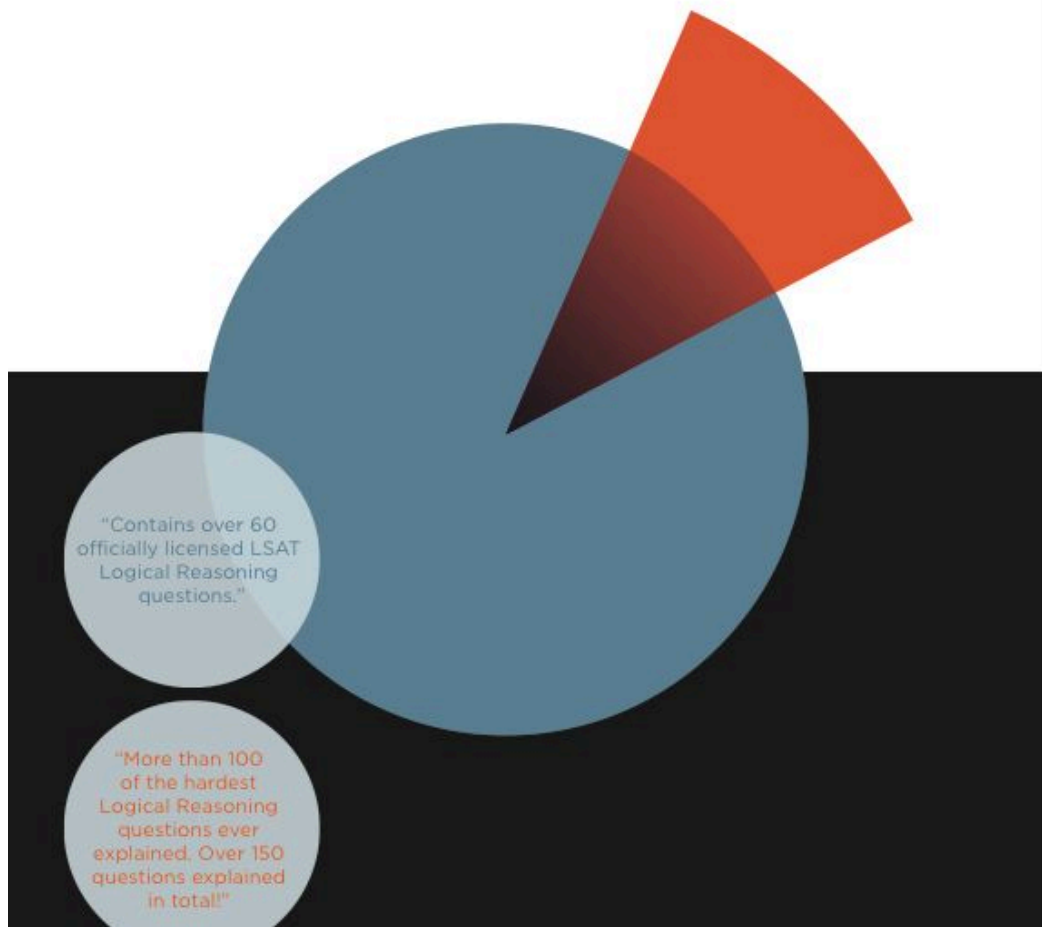


LSAT Logical Reasoning: From the Basics to the Hardest Questions Ever

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Greetings ambitious and brave one!

You are taking the LSAT and you want to go to law school, so you are ambitious. You have chosen a guide that will take you from the basics of logic through the hardest Logical Reasoning questions ever, so you are brave.

The two sentences above each contain a fact and a conclusion – as you shall soon learn, they each contain an *argument*. Most Logical Reasoning questions follow a short passage that is an argument; this is why some LSAT preparation guides refer to the Logical Reasoning section as the “Arguments” section. Some of those short passages, however, are not arguments but consist only of facts; for this reason, it is best to refer to the section as Logical Reasoning. The Law School Admission Council (LSAC), the LSAT authors, refers to section as Logical Reasoning – when it makes sense, you should go with the people that write the test!

If you have experience analyzing arguments, you might have noticed that *every* sentence above contain some crucial *assumptions*. In the first paragraph I assumed that the person reading this – “*you*” – was actually planning on taking the LSAT and not a friend or family member of such a person (or someone who really needs some different hobbies). In those two sentences I also assumed that certain character traits – such as “ambition” and “bravery” – could be deduced from just one known fact. In the last sentence of the second paragraph, I assumed that the authors of the LSAT are, all things being equal, a more reliable authority than certain other test preparation companies. I also assumed that the more reliable authority – in this case the LSAC – provides a better guide to take action: “*you **should** go* with the people that write the test.”

If some, most, or all of these assumptions escaped you, don’t panic! It takes a great deal of practice to recognize the assumptions in an argument. It takes even more practice to recognize that assumptions that are relevant to LSAT questions. This practice is, *I assume*, why you are here!

Before we jump into Logical Reasoning, there are some questions that I think are on every LSAT student’s mind:

How do I get started?

Your first action should be to take the June 2007 LSAT, available for free from LSAC. Give yourself 35 minutes for each section. Do 2 sections, take a 15 minute break, then the 2 remaining sections. Do not worry about the writing sample or the fifth “*experimental*” section for now.

Taking the test will expose you to how challenging the LSAT can be. Your results on the test are not specifically predictive: one cannot conclude that one will improve **X** number of points from one’s first test. But your results on the test will us with some data about your current natural ability and reasoning skills.

Natural ability? Reasoning Skills?

Good questions! What we will be working on are your reasoning skills. For better or for worse, your natural ability will probably not change much; in fact, it will not change much for the rest of your life. This is an awkward issue to face, but I think it is best to get the awkwardness out of the way. Almost all research done up until the present strongly supports the claim that natural ability – IQ – does not change much in an individual's adult life. This flies in face of one of our culture's most popular beliefs: with enough hard work, anyone can achieve anything.

If you want to succeed on the LSAT, learn this now: when the data undermines a widely held belief, embrace the data and doubt the belief! Simplistic slogans such as "statistics can prove anything" prove nothing.

Nearly everyone will improve when they study for LSAT, but few can actually score a 170 or above. Any test-preparation company, or anyone else, who says differently is misleading you. Think about it: how can **everyone** score a 170 or above when 170 or above means that one is in the **top 3 percent**?

These statements might seem harsh - especially for an introduction! – but there is a purpose here: ***I want to work with the best*** – the students that have the best chance of scoring a 170 or above. And the best do not flinch in the face of uncomfortable truths.

But doesn't your website claim that in 2013, 50 percent of your students scored a 170 or above? Does that fact not contradict what you just wrote?

Another great question! I'm looking forward to working with you!

There is no question that I was lucky to work with some very gifted students in 2013 and throughout my career as an LSAT instructor. But they were not simply gifted; they had the *grit* to work tirelessly on improving their reasoning skills and earn the scores they did. By doing so, they were able to improve up to 30 points above their score on their first LSAT!

I am willing to work very hard; I have the "grit", but how do I determine how "gifted" I am?

To be honest, I don't exactly know! To be reasonable is to admit when one does not have sufficient evidence to draw a proper conclusion. SAT scores and your undergraduate GPA can be some indication of your natural ability, but those of course also reflect how well you prepared for the SAT and the difficulty of reasoning required by your undergraduate courses. And, as you will soon find out if you do not already know, the preparation and reasoning skills required by the LSAT far exceed those required by the SAT and undergraduate courses. Many students

who scored a combined 1500 on the Math and Verbal sections of the SAT have trouble breaking 160 on the LSAT.

The only reliable way I know of to determine the one's true LSAT potential is to give it all you've got! Your first diagnostic score – from the June 2007 exam – is a challenge, not a chain. You are not bound to only improve a certain number of points! Alternatively, a good score is no guarantee of future success. Look on every demoralizing moment in LSAT preparation as a call to take further action; look on every victory as a cause for *cautious* optimism.

So what do I do to improve my reasoning skills as much as possible – to give it all I've got?

I divide LSAT preparation into three phases: Learning, Training, and the Final Approach.

Learning: 1 to 2 months

You learn the basics of the LSAT: the different kinds of Logical Reasoning Questions, Reading Comprehension Passages, and Logic Game setups. You practice these questions on the oldest available LSATs: Pretests 1 – 18. If you want to move at an accelerated pace, you can limit your practice questions to Pretests 7, 9-16, and 18 – the tests available in *10 Actual, Official LSAT Pretests*. These tests are hereafter called the “*Green Blues*,” because the book they are in has a green and light blue cover. Pretests 1-6, 8, and 17 must be purchased separately from CAMBRIDGE LSAT or LSAT Blog. Those tests are hereafter called the *Ancient Ones*, because they are very old and must be purchased one at a time. A good compromise tactic – and one that can save you some money – is to purchase the *Ancient Ones* only if you need more practice before entering the training phase.

After the first 6 chapters of this book, you take your “*midterms*”: Pretests 24, 29, 30, and 33. Pretest 24 is available in the book *10 More Actual, Official LSAT Pretests*, which contains Pretests 19 – 28. These tests are hereafter referred to as the “*Yellow Blues*,” because the book they are in has a yellow and blue cover. The other three tests of your *midterms* are available in the book *The Next 10 Actual, Official LSAT Pretests*, which contains Pretests 29 – 38. These tests are hereafter referred to by their test numbers, because the cover of this book is orange and purple, and it just seems silly to use the term “*Orange Purples*.”

If your average score of these 4 tests is within 10 points of your desired LSAT score, you are ready to move on to the *second part of the learning phase*. If your average score is 15 points or more below than your desired LSAT score, you must return to the *Ancient Ones* and do the assigned practice problems from those tests. If your average score is between 10 and 15 points, you can make a judgment call about how to proceed. Once you complete those practice problems from the *Ancient Ones*, or

simply decide to proceed, you are ready to move on to the *second part of the learning phase*.

The second part of the learning phase is Chapters 7 through 9 of this book. These chapters take you through the remaining Logical Reasoning question types: these chapters draw their examples from your midterms Pretests 24, 29, 30, and 33. These chapters also introduce you to some more advanced reasoning concepts.

Do the practice problems from the *Green Blues* for these chapters. Once again, if you are within 10 points of your desired LSAT score, proceed to the training phase. If not, it is best to do the remaining practice problems from the *Ancient Ones*.

Training: 1 week to 8 months

Take tests from the *Yellow Blues*, Pretests 29 – 38, and, if necessary, Pretests 39 – 45. Pretests 39 – 45 are also only available for individual purchase, so they are hereafter called the *Younger Ones* – they were written and administered much more recently than the *Ancient Ones*. Keep doing pretests until you have scored a score with which you are satisfied on at least 3 LSATs. If you have exhausted nearly all of these tests and are still not satisfied, you might need to adjust your expectations. If you score your 3 satisfactory scores very soon into the *Training* phase, and you want to proceed quickly, a later chapter of this book will detail which important Logical Reasoning questions that should be covered individually.

The time students spend training varies considerably: it can be the most frustrating part of LSAT preparation! It is, however, supremely important to have a firm foundation before the *Final Approach*! Also, it is best to be able to adjust your goals during the Training phase. The emotional highs and lows of LSAT preparation are best worked out before you start to take the most recent tests and best worked out well-before you actually take the test.

You also ***must not take Pretests 46 – 51*** – the last 6 of the *Younger Ones*! Even if you have prepared fully, unexpected events or crises, or just test-day anxiety, can cause a performance well below your best. Save these 6 so you have the opportunity, if you need to retake, to test yourself on relatively recent tests.

The tactics I advise are cautious, perhaps overly so. You of course are free to do as you will. I have, however, in the 15 years I have been teaching the LSAT, seen very few students err on the side of too much caution. The vast majority of students, emboldened by past success on standardized tests or a small number of good practice LSAT scores, take the test before they are ready and must retake.

Once you earn scores that make you happy on at least 3, and preferably more, LSATs, you are ready to move on to the Final Approach.

Final Approach: 6 to 10 weeks

The final approach consists of taking **all** the most recent Pretests 52 – 71, available in the two most recent published collections of LSATs. These must be taken as full tests, under test-like conditions. You also must add a fifth section to mimic the experimental section your real LSAT will contain. There is more on the experimental sections, and which sections you should choose to mimic an experimental section, in the introduction to the *Final Approach*.

This book draws questions from Pretests 52 – 71 at a rate of 3-5 questions per test. This is far more questions per LSAT than are chosen from earlier pretests. Are Logical Reasoning questions from these recent pretests harder than questions from earlier pretests?

In general, yes!

So if the recent questions are so much harder, why waste our time with the earlier, easy questions!

Okay, I know you are eager to get started, but there is no need to get snippy!

Recent LSATs are, on average, significantly more difficult than earlier LSATs: why this is the case is discussed more fully in the introduction to the *Final Approach*. Most students experience a drop of 2 – 5 points when they leave the *Training* phase and enter the *Final Approach*. Those points can be made up, and you can increase even further, during the 20 pretests of the Final Approach, but this is why it is so important to achieve strong scores in the *Training* phase.

The earlier questions are, on average, somewhat easier, but they are still relevant to achieving high scores on the contemporary LSAT. To think otherwise is to assume that these earlier questions are **qualitatively** different than the most recent questions. This is not the case! The earlier questions still adhere to principles of reasoning that have remained unchanged since at least the late 18th century Enlightenment. Some of these principles are as old as Plato and Aristotle, and some even older!

The older questions are **quantitatively** different. The difference between older and more recent questions is a difference of degree, not a difference of fundamentals. A contemporary student who can score between 170 and 173 on Pretest 1 can usually score between 167 and 170 on Pretest 71.

What does this mean? Has the LSAC deliberately made the test more difficult?

Sort of, but to say so depends on a very specific definition of “*deliberately*.” This issue is also covered in the introduction to the *Final Approach*.

I included so many recent questions for four reasons:

- 1) The recent questions are the most relevant to the LSAT you will be taking
- 2) The recent questions reveal how the LSAT has evolved to become more and more difficult
- 3) The recent questions reveal new variations on familiar LSAT themes and patterns of reasoning
- 4) My current students studying for the next LSAT are most interested in these questions. I am completing this book in May of 2014, so the June exam is very soon!

The fourth reason relates to the following question:

You argued above that the Training phase is so important, so why do you cover very few questions from those tests? And, now that I think of it, what are we supposed to do about the freaking Logic Games and Reading Comprehension?!?

Later editions of this book will have more questions from the *Training* phase. I wanted to get this book completed for my students studying for the June 2014 LSAT, many of whom were already in the *Final Approach*!

I am working as you read this on Logic Games and Reading Comprehension tutorials that will accompany that book you now have. I focused on Logical Reasoning, however, not simply because there are two sections of it, compared to the one section of *Logic Games* and one section of *Reading Comprehension*. I have focused on *Logical Reasoning*, and its hardest questions, because ***success at the hardest Logical Reasoning questions is the most common barrier between the best students and a 170 plus score.***

With a great deal of practice, repetition, and sheer willpower – true grit, as they say – the most talented students will achieve mastery or near mastery on the *Logic Games*. *Reading Comprehension* is important to study – many students fail to take this section seriously and suffer as a result! But once students understand how to *read the passages as extended arguments* and *treat the questions like supported inferences* – these concepts will be explained in my upcoming *Reading Comprehension* tutorial! – students begin to see that the *reasoning* required by the section is relatively easy. *Reading Comprehension* usually comes down to staying focused and maintaining a reasonable pace. This is not as easy as it may sound. Very few students – myself included – can complete the *Reading Comprehension* section without missing 2 – 6 questions.

With near mastery on the *Logic Games*, however, you can balance these missed questions on *Reading Comprehension*. Then it all comes down to *Logical Reasoning*. And does it ever come down! The best students are usually struggling mightily to get that 5 – 6 wrong per section down to 3 – 4! And that struggle can take weeks or even months! With very few exceptions, the road to a ***170 plus*** score begins, and ends, with *Logical Reasoning*.

When I first conceived of this book, it was intended to cover only the hardest questions ever, with a strong emphasis on more recent questions. As I started to write the book, it became apparent that I would need to cover the basics as well to adequately prepare students for the difficult path ahead. You are brave and ambitious for choosing to work with these materials; very early in Chapter One we are already covering some of the hardest questions ever!

Okay, everything you've said makes sense and I am ready to begin. How do I use this book?

Thanks, you're so understanding!

Read these first chapters and do these early questions very slowly. Whenever you come to a page with a **Question** listed, find and do that question. Even if you get the question correct, read the explanation of the correct answer choice and every incorrect answer choices carefully. The goal in these first chapters is to **learn** about the questions and the reasoning underlying them, not simply to answer the questions correctly.

Later editions of the book will have content assessments – short quizzes on the material presented. But the most important assessments are the actual LSAT questions! You do not do yourself any favors by rushing through this early material. Neither I nor anyone else will grade you or penalize you for not reading thoroughly these chapters or for skimming them as you would some textbooks – the LSAT itself will be your judge!

Now let's get to work!

An Introduction to Argument Analysis

Question Category: Argument Structure

There are four question types in this category: **Main Point**, **Role of Statement**, **Logical Completion**, and **Method of Reasoning**.

Main Point Questions

An **argument** is defined as a **main conclusion**, or **main point**, supported by **evidence**. The evidence consists of **premises**, **intermediate conclusions**, and **contextual claims**:

Premise: a claim stated as a fact and **unsupported** by any independent evidence. A premise usually supports a **main conclusion** directly, but a premise can indirectly support the **main conclusion** via an **intermediate conclusion**.

Intermediate Conclusion: a claim supported by a premise that itself supports the **main conclusion**.

Contextual Claims: the remainder of the argument. Contextual claims can usually be eliminated without affecting the fundamentals of the argument. *Background information, rhetorical claims, and summaries of opposing viewpoints* fall into this category. Most important are the **summaries of opposing viewpoints**, which can be subdivided into **Counterevidence** and **Counterclaims** and are described in more detail below.

The evidence supports a **main conclusion**, or **main point**. The main point is the **purpose** of the argument. The main point is the **logical endpoint** of the argument; although the main point is usually located at the end of an argument, it need not be. In fact, in most **Main Point Questions**, the *main point will be located in the beginning or middle of the argument*.

The following questions all ask for the argument's main point:

Which of the following most accurately expresses the main conclusion of the author's argument?

Which of the following most accurately expresses the conclusion drawn in the argument?

The argument is structured to lead to which of the following conclusions?

Question: June 2007, Section 3, Question 12

This argument has a very common structure:

Counterevidence

Novel X and Y contain similar themes and situations.

Counterclaim

One might suspect one of the authors of plagiarism.

Main Point, introduced by the **Transition Keyword** “however”:

It is more likely the similarities are coincidental.

Evidence, introduced by the **Evidence Keyword**, “since”:

Both authors come from similar backgrounds and have led similar lives.

This is the most common structure of the arguments that precede **Main Point Questions**.

The **Main Point** of an argument must address any **controversial element** and must address any **judgment** the author makes. For this reason, (D) is the author’s **Main Point**. (A), (B), and (C) are all technically true, but they play different roles in the argument.

(D) is **CORRECT**.

(A) is **Counterevidence**: what the author acknowledges is true, but what supports a conclusion that the author opposes.

(B) is a **Counterclaim**: a conclusion usually, but not always, supported by **Counterevidence**, that the author rejects.

(C) is **Evidence**: what supports the author’s conclusion. It is important to note that only one statement in this argument can be classified as **evidence**. The other factual statement in the argument is **counterevidence**: the author does not deny the truth of the counterevidence, but it works against the author’s conclusion and so therefore should not be classified as **evidence**.

(E) is another answer choice that the author most certainly believes is true, but it is not the **main point**. (E) is a **conditional statement**, which is any statement that can be expressed as an *if/then* statement. The author stated the conclusion **unconditionally**: there was no *if* or equivalent word in the conclusion. For this

reason, the *main point* **cannot** be a **conditional statement**. (E) is actually an **assumption** of the argument. We'll be discussing **assumptions** a great deal in Chapter 5!

In a Main Point Question, You are much more likely to see a Transition Keyword introduce a Main Point than a Conclusion Keyword!

If the test writers placed a **Conclusion Keyword** immediately before the *main point*, the question would be too easy. In fact, in **Main Point Questions**, a **Conclusion Keyword** might precede a *conclusion that is not the author's main point: an intermediate conclusion*. These will be discussed shortly.

Evidence Keywords

After All
Because
For
Given That
Since

Conclusion Keywords

Accordingly
Consequently
Ergo
Hence
It follows that
Thereby
Therefore
Thus

Transition Keywords

Although
But
Despite
However
Nevertheless
Yet

*The following argument structure is one of the most common on the LSAT, particularly in **Main Point Questions***

Counterevidence and/or Counterclaim
*Transition Keyword, **Conclusion***
Evidence

Regarding the **Conclusion Keyword** “*thus*”:

English language purists get upset when they see the word **thus** used in a manner equivalent to **therefore**. According to the purists, “*thus*” means “*in this way or manner*.” When Romeo, of *Romeo and Juliet*, says “*Thus with a kiss I die*,” he is not concluding an argument that sought to prove that kissing is a cause of death: he is describing the manner of his death. The purists, full of sound and fury, may protest all they want; so long as the LSAT uses **thus** as a Conclusion Word, so shall we.

The LSAT can, however, use **thus** in the manner the purists prefer. We have already noted how Conclusion Words may precede a statement that is not the main conclusion. In some cases, *thus* might precede a statement that is not a conclusion at all!

Regarding the **Evidence Keyword** “*because*”:

Sometimes **because** does not introduce an *evidence statement*. It can be part of a conclusion when that conclusion is a causal one:

*I prayed for rain in California, and then it rained in California.
Therefore, it rained in California because I prayed for rain.*

In this very poor argument, the entire second sentence is the *main conclusion*. Obviously the *main conclusion* isn’t just “*it rained in California*”; the *main conclusion* is clearly attempting to prove a *causal connection* between prayer and rain.

Question: June 2007, Section 2, Question 10

“**Should**” is an extremely important word in an argument. **Should** usually implies that the author has made a **judgment**, and if an argument contains such a **judgment**, the **main point** will contain a similarly worded **judgment**.

*If there is **evidence** about what **should** or **ought to** be true, the **conclusion** will establish what **should** or **ought to** be true.*

Knowing this, this question can still be difficult, as there were two claims that contained the word **should**. So how does this argument fit together?

First statement

*Double-blind techniques **should** be used whenever possible*

Middle statement

Double-blind techniques help prevent misinterpretations

The last statement

*Scientists **should** try to avoid such misinterpretations*

It is quite clear that the middle statement, the first part of the second sentence, is a **premise**. When confronted with an argument that contains claims about what **is** true and what **ought to be true**, the **main point** must be one of the *judgments*, one of the **ought to be true**, or **should**, statements. But which one is the **main point**? It is not the last statement, because that statement fails to mention “*double-blind techniques*”, and the **main point** must address all the major elements of the argument. Also, the last statement is introduced by the **Continuation Keyword** “*and*.” **Continuation Keywords never introduce conclusions**, because *such words always indicate that what follows is in some sense equal to what came before*. There can only be one **main point**, and that **main point** cannot be equal to any other statement. If a statement is introduced by a **Continuation Keyword**, that statement is almost always a **premise**.

This subtle point about **Continuation Keywords** can be very helpful when confronted with difficult **Role of Statement** questions.

You are always better off determining the **main point** before you get to the answer choices. If you are stuck between two answer choices, however, you can always use the “*Because Answer Choice X, Therefore Answer Choice Y*” test.

Let’s say you are down to (B) and (D), the two answer choices that best describe the two **should** claims from the argument. You will create two *mini-arguments* and decide which of the two is more reasonable.

The first mini-argument: *Because (B), Therefore (D)*.

Because it is advisable for scientists to use double-blind techniques as much as possible, therefore, whenever possible, scientists should refrain from interpreting evidence on the basis of previously formed expectations.

This argument makes very little sense, so (D) is unlikely to be the **main point**.

The second mini-argument: *Because (D), Therefore (B)*

Because, whenever possible, scientists should refrain from interpreting evidence on the basis of previously formed expectations, it is advisable for scientists to use double-blind techniques as much as possible.

This claim makes much more sense, making (B) likely to be the **main point**.

This time-consuming technique only works when you are certain both answer choices are stated in the argument, and when one is the **main point** and the other is a **premise**.

(B) is **CORRECT**. “*Advisable for scientists to use*” is equivalent to “*Scientists should use.*”

The incorrect answer choices.

(A) A paraphrase of the second statement, or first **premise**, of the argument.

(C) This statement is probably true on the basis of the first **premise**, but does not contain the **judgment** in the argument’s conclusion.

(D) A paraphrase of the third statement, or second premise.

(E) This answer choice praises *double-blind studies*, but does not capture the judgment that they “*should be used.*” Also, consider how **strong** the language is: the answer choice states that double-blind techniques are “**often** an effective way of **ensuring** scientific objectivity.” The argument stated that double-blind techniques **should be used** whenever possible. It never went so far as to say that that they **are often** used, or that they **ensure**, that they **guarantee**, scientific objectivity. This answer choice contains **Language of Unsupported Strength**.

Continuation Keywords

And
Also
Furthermore
Moreover

*Another very common argument structure for a **Main Point Question**:*

Main Point
Evidence

*If there is more than one evidence statement, the statements usually will be joined by a **Continuation Keyword**. A **Continuation Keyword** can never introduce a **main point**.*

*When an argument begins with a **judgment** that is **unattributed**, as in the previous argument, that judgment is usually the **main point**.*

*If there is **evidence** about what **should** or **ought to** be true, the **conclusion** will establish what **should** or **ought to** be true.*

This is the first of the Most Difficult Logical Reasoning Questions ever! Good luck!

Question: Prep Test 16 (September 1995), Section 3, Question 19
(page 305 of 10 Actual, Official LSAT Pretests).

When confronted with a **Main Point Question**, do not expect the **main point** to be clearly stated in the last sentence of the argument. In the case of this argument, the presence of the **Conclusion Keyword** “*therefore*” in the last sentence should make you even more suspicious that the actual **main point** lay elsewhere.

The last claim, “*therefore, (a state’s) degree of control is partial*”, is actually an **Intermediate Conclusion**. It is **not** a **premise**, which by definition is an **unsupported** claim. But it cannot be the **main point** because the argument’s logic does not end at the last sentence. The last sentence supports the second sentence; we know that this is the case because the last sentence begins with the phrase “*This is because...*” The second sentence establishes that there is no such thing as a political entity exercising “*total state control*.” The previous statement, after the colon, establishes that “*calling a state totalitarian implies total state control*.”

Since “*total state control*” does not exist, the argument concludes that one cannot “*call a state totalitarian*.”

There are a few important points about the first sentence that make it a strong contender for the **main point**, even before you read the rest of the argument.

1. **It contains a judgment.** Whenever the argument makes a specific judgment, that judgment almost always is the main point. An argument cannot call another claim “*misleading*,” shift to a related matter, and reach a **main point** that ignores the original, rejected claim.
2. **It contains an “interesting idea.”** In case you are completely ignorant of 20th century history, totalitarianism was a big deal. Scholars still debate the significance of the concept: the debate between James and Maria is actually a simplified version of common academic disagreement. An argument will rarely, if ever, mention a hugely important concept and then reach a **main point** fails to mention that concept. Unless you find specific evidence that “*totalitarian*” or some other big-idea is merely an example of a more general phenomenon, expect that word to be a part of **main point**.
3. **It is an unattributed, strongly worded claim.** When the first sentence is stated strongly and not attributed to any other source, it is usually the author’s **main point**. When an argument begins with a vague attribution, such as “*some people think*,” “*some scientists hypothesize*,” or “*some critics argue*,” the **main point** is usually a **rejection** of that first claim.

(A) **CORRECT**. The first statement is Maria's *main point*.

(B) defines an *implication* of a *totalitarian state*. This is an *unsupported* statement made by Maria and therefore a *premise*.

(C) is an *intermediate conclusion*, introduced by the *Conclusion Keyword* "therefore."

(D) is another *intermediate conclusion*. "This is because" follows a *conclusion* and precedes a *premise*.

(E) is an unsupported premise introduced by the *Evidence Keyword* "because".

An <i>intermediate conclusion</i> is a statement supported by at least one premise which itself supports the <i>main point</i> .
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Question Type: Logical Completion (Blank Space Question)

Most **Logical Completion Questions** are simply **Main Point Questions**. However, if an *Evidence* or *Continuation Keyword* precedes the blank space, the question is actually asking for a missing **premise** of the argument.

The following are examples of *Logical Completion Questions*:

Which one of the following most logically completes the philosopher's argument?

Which one of the following most logically completes the argument?

Which of the following best completes the argument?

Question: June 2007, Section 2, Question 8

Because the blank space is preceded by the **Conclusion Keyword** “*thus*”, the **main point** of this argument will answer this question.

This argument has the following structure:

Counterclaim:

Proponents of the electric car maintain....that (the electric car) will result in an abatement of the environmental degradation caused by auto emissions.

Premises, introduced by the **Transition Word** “*but*”:

*Unless we damn more rivers, the electricity to charge the electric car will come nuclear or coal-fired power plants.
Each of these power sources produces environmental damage.*

Conclusion: the **main conclusion** is the correct answer to this question.

The author clearly intends to reject the claim made by the “*proponents of the electric car*.” This **counterclaim** is that the electric car will lead to an abatement of environmental degradation caused by auto emissions, i.e., that the electric car will eliminate the bad environmental effects of automobile use. The **conclusion** is a rejection of this claim: the **conclusion** is that the electric car will **not** eliminate the bad environmental effects of automobile use.

(A) **CORRECT.** We can conclude that the author believes that the electric car will have some negative environmental effects, and so the effects will be *worse than the proponents believe*.

(B) The argument is not about the “*popularity*” of the electric car.

(C) While technical problems are mentioned in the **counterclaim**, they are not directly relevant to argument.

(D) The author never claims that the electric car will produce **more** emissions.

(E) This answer choice is the most commonly chosen incorrect answer, because it seems to conclude the argument. It is inferior to (A), however, because the author never claimed that electric cars would, on the whole, be *worse* for the environment than are conventional cars. Electric cars could still be better overall for the environment and produce “**a net reduction in environmental degradation**” even if they are not as perfect as the proponents claim.

Sometimes, students choose (E) over (A) because (A) seems *stronger* than (E). Most LSAT courses will teach that a *stronger* answer choice is *inferior* to a weaker one. The tactic of eliminating the *stronger* answer choice can be useful, but the tactic is not always appropriate, and when appropriate, it must be used carefully. It is more fully discussed after the next question.

With regard to this question, the “*worse*” in (A) sounds *stronger*, and therefore much worse, than the *no net reduction* in (E)! But we have to consider what (A) really means: it states that the environmental consequences of the electric car will be *worse* than the proponents **believe**. The proponents *believe* that the electric car will result in an *abatement* of negative environmental effects: it will have **no negative effects**! In other words, electric car will be perfect for the environment! The argument concludes that the electric car is an imperfect solution, but it still could be an improvement over traditional cars. (E) goes even further and states that the electric car will result in *no net reduction* of negative environmental effects. (E) is actually *stronger*, because it states not only that the electric car is imperfect but also that it will not be an improvement!

In this question, as in the first question,

Understanding the **counterclaim** is absolutely necessary to accurately describe an argument's conclusion!

Question Type: Role of Statement Questions

These questions ask about the role of a particular statement in the argument. The following are examples of **Role of Statement Questions**:

The claim attributed to the geologist plays which of the following roles in the argument?

The claim that the economy is heading out of the recession plays which of the following roles in the argument?

Which of the following best describes the function in the argument of the claim that ancient reptiles may have been warm-blooded?

Question: June 2007, Section 2, Question 11

This argument has a common structure:

Counterclaim

Electronic media have corroded the intellectual skills required and fostered by the literary media.

Evidence, introduced by the **Transition Keyword** “but”:

Several centuries ago the complaint was that certain intellectual skills...were being destroyed by the spread of literacy.

Main Point, introduced by the **Conclusion Keyword** “so”

What awaits us is probably a mere alteration of the human mind rather than its devolution.

The question asks you about the second sentence. It is often not enough to simply recognize the statement as “*evidence*”. There will often be more than one answer choice that correctly labels what **argument component** the statement is. When this is the case, the correct answer must accurately describe the rest of the argument.

(C) **CORRECT**. The statement is an “*example of a cultural change*” and that change did “*not necessarily*” have a negative impact on the human mind.

(A) This answer choice starts out promisingly by correctly describing the statement as “*evidence*.” But the remainder of the answer choice distorts the argument’s conclusion.

(B) An “**illustration**” is another word for “**example**.” It is true that the *complaint of several centuries ago* is an **example** of a complaint like the contemporary complaint that electronic media is *corroding* literary skills. But this example is not offered in support of a “*general hypothesis*” that intellectual skills are “**inseparable from the means by which people communicate**.” This answer choice can be correct only if that

hypothesis is the argument's *conclusion*, and it is not. A ***hypothesis*** is a "*testable proposition*." One could call the argument's conclusion a *hypothesis* – any prediction or theory is a *hypothesis* – but **not** the *hypothesis* that intellectual skills are ***inseparable*** from the means by which people communicate.

Answer choice (B) is what I call a ***Babelchoice***: an answer choice that incorrectly describes an argument by combining difficult, technical language with some legitimate content from the argument.

(D) This choice starts out promisingly by correctly describing the statement as "*evidence*." This answer choice, more subtly than those other incorrect answer choices, also distorts the argument. The *complaint of several centuries ago* is not ***evidence*** that undermines a claim about the contemporary loss of literary skills. The *complaint* is ***evidence*** that in the past technological change has given rise to fears of human "*devolution*." Also, the author never argues that the claim that certain literary skills are being lost is ***unwarranted***. The author argues that literary skills might indeed be lost, but that this loss is not necessarily as terrible as predicted.

(E) This answer choice completely misunderstands the statement. The complaint of several centuries ago was never "*dismissed*."

When trying to quickly eliminate incorrect answer choices on ***Main Point, Role of Statement***, and the upcoming ***Method of Reasoning Questions***, you have a very useful tactic: you can ***eliminate any answer choice that contains language that is stronger than that in the argument***. So, "***inseparable***" in (B) and "***unwarranted***" in (D) make those answer choices less likely to be correct. With regards to (B), it is clear that the author believes that there is some connection between intellectual abilities and the means used to communicate. But the author never goes so far as to claim that intellectual abilities and means used to communicate are ***inseparable - impossible to separate***. With regards to (D), the author never states that the prediction that certain literary skills will be lost is ***unwarranted***. Because these answer choices contain ***Language of Unsupported Strength***, they can be quickly eliminated.

Similarly, the *weakness* of the phrase "***not necessarily***" makes (C) more likely to be correct. The author's conclusion was that what awaits us is "*probably a mere alteration of the human mind rather than its devolution*." The language in the answer choice (a detrimental result will ***not necessarily*** happen) is actually *weaker* than the language in the argument's conclusion (a detrimental result will ***probably not*** happen). The weaker language makes this somewhat confusing answer choice easier to choose! When asked to describe an argument, or, as you will in the next chapter, choose the most strongly supported ***inferences*** from a set of facts, language that is weaker than that in the argument is to be preferred.

This tactic is often misunderstood. I am **not** claiming that *weak language is always better than strong language*. I am certainly not claiming that correct answers always

contain weak language! I am claiming that **Language of Unsupported Strength**, language that is stronger than that in the argument, will make an answer choice incorrect.

***Role of Statement Questions** are particularly difficult when multiple answer choices correct describe the statement's role; when this is the case some of those incorrect answer choices that correctly describe the statement's role will distort the argument's conclusion.*

*Eliminating answer choices that contain **Language of Unsupported Strength** is a very useful tactic on **Main Point** and **Role of Statement Questions**. But do not fall into the trap of concluding that strength is always bad and weakness is always good!*

*Beware of **Babelchoices***: answer choices that combine some content from the argument with difficult, often technical language to create a statement that, with respect to the argument, is meaningless.*

* The name **Babelchoice** is in honor of the "Babelfish," a creation of the late, great author Douglas Adams. Adams wrote the *Hitchhiker's Guide to the Galaxy*, a treasury of absurd reasoning and a veritable nerd-bible for those of us who came of age in 80s.

There is in language a **hierarchy of strength**. Understanding this **hierarchy** is very useful for determining whether an answer choice contains **Language of Unsupported Strength**.

The strongest words are words that describe what is **necessary** or **must be true**. These include “all” and “always” and their synonyms:

All
Always
Depends
Each
Every
Guarantees
Must
Necessary
Only
Sufficient
Whatever
Whoever

Less strong are those that describe **probability**, what is **likely to be true**. These include “most” and “usually” and their synonyms.

Generally
Likely
Majority
Most
Probably
Usually

The **weakest** words are those that describe **possibility**, what **could be true**. These include “some” and “sometimes” and their synonyms.

Can
Could
Might
Possible
Some
Sometimes

In the negative, the **strongest** words describe what **cannot be true**. These include words like “no”, “none”, “never” and their synonyms.

Cannot
Impossible
Never
None

In the negative, **weaker** words or phrases describe what is **unlikely**. These include phrases like “*Most...not*” and “*usually do not*” and their synonyms.

Improbable
Most...not
Seldom
Unlikely
Unusual

In the negative, the **weakest** words or phrases describe what “**might not**” be true. These include phrases like “**not all**” and “**not always**” and their synonyms.

Insufficient
Some...not
Not Always
Not All
Not Necessary

In addition to the words listed above, you can think of the degree of adjectives as indicative of their strength.

The **strongest** adjectives and adverbs are **superlative**:

Best
Worst
Fastest
Slowest
Most Effective
Least Effective

Less strong are comparative:

Better
Worse
Faster
Slower
More Effective
Less Effective

The root form of each of these adjectives (called the “*positive*” form) is **not always easier to support** than the *comparative* and *superlative* forms.

Good
Bad
Fast
Slow
Effective
Ineffective

For example, a turtle might be faster than a snail, but it would be in most cases unreasonable to call either animal “*fast*.”

On **Main Point, Role of Statement**, and the upcoming **Method of Reasoning Questions**, you can eliminate answer choices that contain language that is stronger than that in the argument, ***Language of Unsupported Strength***.

Question Type: Method of Reasoning Questions

These questions all ask you, “*What does the argument do?*” Or, as LSAC sometime puts it, “*How does the argument go?*” Here are some examples of **Method of Reasoning Questions**.

The argument proceeds by

Which of the following best describes how the biologist reaches the conclusion drawn above?

Which of the following best describes the paleontologist’s strategy of argumentation?

Like **Main Point** and **Role of Statement Questions**, these questions ask you to describe the argument. An answer choice that contains language stronger than that in the argument, **Language of Unsupported Strength**, will be incorrect.

Question: June 2007, Section 2, Question 20

The argument has the following structure:

(The *Counterevidence* and *Counterclaim* are attributed to Munoz)

Counterevidence

The Association overwhelmingly opposes the new water system.

Counterclaim

This opposition suggests that there is widespread city opposition to the new water system.

Premises

Only 25 of 350 members of the Association voted on the resolution opposing the water system, and 10 voted in favor of the system.

The votes against the new water system represent a very small percentage of Hopeville's residents

Conclusion

These few votes do not necessarily represent that majority of Hopeville's residents: Munoz is wrong and there may not be widespread opposition to the new water system.

Before reading the answer choices, you should predict what *elements* the correct answer will contain: the correct answer must address the fact that *Gamba*, the author, countered another argument, the argument one attributed to *Munoz*. The correct answer must address **how** Gamba countered that argument. The correct answer might be very abstract – “*Gamba presented counterevidence undermining an interpretation of statistical data.*” – or very specific to the argument – “*Gamba demonstrated that the number of votes against the new water system is a very small percentage of the total population*” – or somewhere in between.

(E) **CORRECT.** This answer choice matches one of the predictions made above. Note that the answer is somewhat abstract: this answer choice could describe many similar arguments.

(A) Gamba never addressed what made an Association member more or less likely to vote.

(B) It is actually Gamba who uses statistics, and Gamba never makes the claim that statistics are so easy to manipulate. Also, the “to support **whatever** view” makes this choice easier to eliminate: it contains **Language of Unsupported Strength**.

(C) This answer choice is tempting: abstract answer choices like this are often correct. But Gamba does not acknowledge the **truth** of Muñoz’s **only premise**, which is that the Association **overwhelmingly** opposes the new water system.

(D) Gamba did a good job of *disconfirming* the *counterevidence*. This **Babelchoice** is meant to be deliberately confusing, but, as Gamba showed, there is nothing about Muñoz’s evidence that makes it “*impossible to disconfirm*.”

Method of Reasoning Questions ask for a description of how the argument reached its conclusion. As with **Main Point** and **Role of Statement Questions**, you can and should predict the main elements of the correct answer.

Some **Method of Reasoning Questions** require you describe the relationship between two arguments.

Remember Maria's argument about *totalitarianism*? It's back, this time preceding a **Method of Reasoning Question**. When this argument originally appeared on the September 1995 LSAT, it was followed by two questions, a **Main Point Question** and a **Method of Reasoning Question**.

On the contemporary LSAT, we no longer see two questions follow one argument.

Question: Prep Test 16 (September 1995), Section 3, Question 20
(page 305 of 10 Actual, Official LSAT Pretests)

James' argument has the following structure:

Conclusion

A one-party state that has tried to exercise control....is totalitarian

Evidence

The term "totalitarian" describes not "the actual degree of control", but rather the "state's ambitions."

It important to note that James acknowledges that state systems of control have "*practical inefficiencies*": he accepts *some* of Maria's evidence, but denies her **definition** of the term "*totalitarian*," and thus denies her conclusion.

(D) **CORRECT.** This is the only choice that describes how James challenged Maria's **definition** of the term "*totalitarian*".

(A) James disputes Maria's definition of "*totalitarian*." He never claims that Maria's argument is self-contradictory. He probably would accept her conclusion if he agreed with her definition of *totalitarian*.

(B) There is no "*explanation*" of why totalitarianism exists in James' argument.

(C) James does the opposite of this: he accepts some of Maria's evidence - those *practical inefficiencies* of state control - while challenging her conclusion: what she **infers**.

(E) James rejects Maria's definition of *totalitarian*, and so rejects one of her crucial **premises** in reaching his conclusion.

Question: Prep Test 18 (December 1992), Section 4, Question 21
(page 348 of 10 Actual, Official LSAT Pretests)

This is the second of the Most Difficult Logical Reasoning Questions ever! Good luck!

Jane's argument has the following structure:

Conclusion

Harper's ideas have no value.

Premise, introduced by the **Evidence Keyword** "because":

There is no general agreement among musicians about what a guitar should sound like.

Intermediate Conclusion, introduced by the **Conclusion Keyword** "consequently"

There is no widely accepted basis for judging a guitar's sound.

Mark's argument has the following structure:

Premises

*If Harper's ideas resulted in superior sound, they would have been adopted by now
The Torres guitar design has been almost universally adopted*

Implied Conclusion

Harper's ideas do not result in superior sound.

We can *conclude* that Mark believes that Harper's ideas do not result in superior sound, because the premises together *imply* this conclusion. Perhaps Mark might not go so far as to say that Harper's ideas have "*no value*", but it is clear that both Jane and Mark are critical of Harper.

Jane's and Mark's conclusions are similar, but their premises differ. Jane claims that there is "*no widely accepted basis*" for judging a guitar's sound, while Mark claims that the Torres design has been "*almost universally adopted*." These two strongly worded claims **contradict** one another.

(E) **CORRECT.** "**Supposition**" is another word for **premise**, but it is not seen on the contemporary LSAT. A "**presupposition**" is an **assumption**.

(A) Mark does not point out a "*weakness*" in Jane's argument.

(B) Mark and Jane's arguments each have ***conflicting*** premises.

(C) Mark and Jane's arguments each have *similar* ***conclusions***.

(D) Mark and Jane might have similar conclusions, but their ***premises***, and therefore their ***arguments***, are quite different.

Question: Prep Test 15 (June 1995), Section 3, Question 17
(page 274 of 10 Actual, Official LSAT Pretests)

The structure of X's argument:

Conclusion

*Medical research on animals **should not** be reduced*

Premises, introduced by the **Evidence Keyword** "because"

*Such research averts human suffering
In such research a trade-off between human and animal welfare is **always inevitable**.
We **should** give greater weight to human welfare.*

Y's response:

*Research currently done on animals could be done on human volunteers or with computers without **any** animal suffering.*

The question characterizes Y's statement as a "response" not an "argument." This is because Y does not provide a fully formed argument, but what he says does relate to X's argument. By claiming that research currently done on animals could be done on computers and animal suffering could thereby be avoided, Y is challenging X's second premise.

(A) **CORRECT**. Some test takers are scared by the strength of **contradicts**, but that verb is entirely appropriate here. X uses *strong language*: "a trade-off between human and animal welfare is **always inevitable**. All Y needs to do to contradict that claim is to propose one means to avoid that *trade-off*. Y does this by establishing that research can be done with computer modeling or human subjects "without causing **any** suffering."

(B) Y never addresses X's premise about the "weight" that should be given to human versus animal suffering.

(C) Y does not address the "consequences" of X's argument. See **Prep Test 30 (December 1999), Section 4, Question 16** for an example of an argument that criticizes another argument by citing its consequences.

(D) By contradicting a premise of X's argument, Y **weakens**, and does not **strengthen**, X's argument.

(E) *Y contradicts* a premise of *X's* argument; one would not therefore say that *Y "supplies"* a premise to *X's* argument.

(D) and (E) also make very similar claims. To “*supply to premise*” to an argument is to **strengthen** an argument. If two answer choices are ever equivalent, they are both incorrect, because there cannot be two correct answers!

In most of the questions covered thus far, *strong language* has played an important role. In some cases, the language in an answer choice was too strong for the argument, and so the answer choice was said to contain **Language of Unsupported Strength**. In other cases, the *strong language* in the one of the speakers’ arguments allowed us to see the precise nature of the speakers’ *disagreement*. Paying attention to *strong language* is extremely important in *argument analysis* and in choosing correct answers. In fact, I would argue that, because *strong language* is so important for every question type, how well you identify **strong language** and how well you identify the **components of an argument** are the **primary learnable determinants of success** on the **Logical Reasoning** section (such awareness is also crucial on the **Reading Comprehension** section!).

One additional point about *Main Point*, *Logical Completion*, *Role of Statement* and *Method Questions*: these questions usually follow reasonable arguments, so these questions give you a sense of what the LSAT authors consider to be “good” reasoning. These questions are not looking for an answer choice that is critical of the argument. Even if you do not think the argument is a reasonable one, be very skeptical of an answer choice that is critical. The task in these questions is **not to criticize** the argument **but to describe** the legitimate kinds of reasoning employed by different arguments.

*Method of Reasoning, as well as Main Point, Logical Completion, and Role of Statement Questions, usually follow **reasonable** arguments. In these question types, avoid answer choices that are critical of the argument.*

The two primary tasks for a 170 plus score on the Logical Reasoning section:

***Identifying Argument Structure
Identifying Strong Language.***

The following practice problems are from the *Green Blues*.

Prep Test 7

Section 1: 5, 6, 7, 18
Section 4: 2, 16, 20, 21

Prep Test 9

Section 2: 3, 11, 15, 20
Section 4: 9, 18, 20

Prep Test 10

Section 1: 4, 11, 12
Section 4: 3, 13, 25

Prep Test 11

Section 2: 3, 8, 14, 20
Section 4: 2, 8, 10, 12, 24

Prep Test 12

Section 1: 1, 3, 6, 9
Section 4: 10, 14

Prep Test 13

Section 2: 2, 9, 17
Section 4: 1, 3, 6

Prep Test 14

Section 2: 8, 9, 14, 19
Section 4: 16, 24

Prep Test 15

Section 2: 8, 11, 14, 24
Section 3: 1, 4, 11, 15, 17, 21

Prep Test 16

Section 2: 17, 23
Section 3: 7, 19, 20, 25

Prep Test 18

Section 2: 1, 5, 7, 10, 12, 18
Section 4: 2, 4, 21

The following practice problems are from the *Ancient Ones*.

Prep Test 1

Section 3: 13
Section 4: 5, 19, 20

Prep Test 2

Section 2: 6, 8, 12
Section 4: 3, 19, 24

Prep Test 3

Section 2: 6, 18, 24
Section 4: 20

Prep Test 4

Section 1: 6, 17, 18, 21
Section 4: 18

Prep Test 5

Section 1: 6, 9
Section 3: 3, 4, 19

Prep Test 6:

Section 2: 1, 18, 20
Section 3: 12, 21, 23, 26

Prep Test 8:

Section 1: 15, 18
Section 4: 17

Prep Test 17

Section 3: 4, 6, 9, 18, 19

Chapter Two: Introduction to Inferences and Conditional Reasoning

Question Category: Inferences

These question types usually do not contain *arguments*. From now on, we'll be referring to the short passage before the question as the *stimulus*. The stimulus in these questions will usually be a *set of facts* from which no conclusion is drawn: it is your task to draw the *most reasonable conclusion* from these facts.

There are four question types within this category. The first two, *Most Strongly Supported* and *Must Be True*, are sometimes misidentified as the same question type. They do share certain similarities: they both require an answer supported by the passage. When confronting them you should be skeptical of any answer choice that contains *Language of Unsupported Strength*. However, there are some major differences between the two question types.

Most Strongly Supported Questions are more common than *Must Be True Questions*, so we'll start with those.

Question Type: Most Strongly Supported

Question: June 2007, Section 2, Question 18

The correct answer is the answer choice **most supported** by the stimulus. Read the facts established by the stimulus. If any of them seem directly related, you should logically connect them. Such connections are usually, but not always, correct answers.

Statement 1

Modern science is built on showing other hypotheses to be false.

Statement 2

Nothing brings more recognition than overthrowing conventional wisdom

Statement 3

It is unsurprising that some scientists are skeptical of global warming

Statement 4

Very few scientists find evidence that global warming is unlikely

A good prediction would combine Statements 2, 3, and 4:

Some scientists have sought the great recognition that undermining the global warming hypothesis would bring them, but very few find evidence that undermines global warming.

Do not spend too much time trying to connect every statement. You cannot predict with precision, as you could with most **Argument Structure Questions**, what the correct answer choice will contain. The correct answer might combine all the relevant facts, or it might be related to only one of them. *The correct answer need not address every topic mentioned. The correct answer choice is the **most supported** of the five choices, the one most likely to be true.* What this means is that you should **spend more time comparing the answer choices to one another than you should predicting the correct answer.** In this question type, your success depends primarily on the rapidity with which you can eliminate answer choices less likely to be true.

(A) This choice judges severely the scientists who seek to undermine the global warming hypothesis: they are “*not acting in accordance with the accepted standards*”

of scientific debate." There is no such judgmental language in the stimulus: no statements about what scientists *should* or *should not* do, no code of ethics for scientists. If the stimulus contains no such judgments, the answer choice should not contain such judgments. This choice can be eliminated because it contains an **Unsupported Judgment**.

(B) **CORRECT**. This answer choice correctly connects Facts 2 and 3. Perhaps you thought words "*substantial motive*" were too strong. However, Fact 2 does contain strong language: "**Nothing** brings more recognition than overthrowing conventional wisdom."

(C) The claim that there is evidence that "conclusively shows the global warming hypothesis to be false" is arguably **Language of Unsupported Strength**. It is true the little evidence has been found to undermine the global warming hypothesis, but this lack of evidence does *not conclusively prove* the global warming hypothesis. To believe so would be to *assume that a lack of evidence for a claim proves that claim false*, a flawed assumption that will be covered in Chapter Six.

(D) We know that anti-global warming scientists have found very little evidence to support their arguments. The claim that they "*have not offered **any** alternative hypotheses*" makes this choice an easy elimination: it contains **Language of Unsupported Strength**.

(E) This answer choice is not simply about the scientists who are trying to undermine global warming. This answer choice is about "*Research in global warming*," in general, and the choice claims that such research is "**primarily driven**" by a desire for recognition. This answer choice contains a very strongly worded **Causal Claim**. The stimulus certainly establishes that desire for recognition is a factor in any kind of scientific research. But to state that any one factor is the **primary factor** is one of the most dangerous statements on the LSAT, because it is so difficult to prove. It is important to note that this choice contains an **Unsupported Cause** that makes it an easy elimination.

You might have noticed that, unlike in the last chapter, I listed the answer choices in order rather than the correct answer first. This is because on **Most Strongly Supported Questions**, you should focus less on predicting and *more on comparing* answer choices. You can predict, but be ready to have your predictions fail much of the time! From this point on, when the question is such that you should try to predict an answer, the correct answer will be discussed first. When the question is such that you should not predict but compare answers, the answer choices will be discussed in the order they appear.

Thus far we have 3 means to justify an easy elimination. We shall call these **Elimination Justifications**.

Language of Unsupported Strength
Unsupported Judgment
Unsupported Cause

Question: June 2007, Section 2, Question 22

The stimulus presents a series of *causal connections*. **Cause and effect** relationships are extremely important on the LSAT Logical Reasoning section. They are covered more extensively in **Chapter Three**, because **causal claims** are very easy to strengthen or weaken. In fact, on **Inference Questions**, most of time you will be eliminating answer choices because they establish *causal connections* not fully supported by the stimulus. We call these **Unsupported Causes**. With this question, however, because the stimulus is a series of *causal connections*, we can expect the correct answer to contain causal language.

The causal chain is as follows:

The media rarely covers local politics and local politics is conducted secretly; these factors cause local politicians to be isolated; this causes a reduced chance that resident acts will elicit a positive response; this causes residents to be discouraged from participating in local politics.

It can be simplified:

*Rare Media Coverage and Secret Conduct **causes** Local Politicians Isolated **causes** Positive Response Less Likely **causes** Less Participation in Local Politics.*

The relationship between “Rare Media Coverage” and “Less Participation in Local Politics” is, on the LSAT, said to be an **indirect cause**. Even if the causal connection is clear and logical, it is an **indirect cause** if there are any intermediary factors.

A causes B, B causes C.

A is a **direct cause** of B and an **indirect cause** of C.

The correct answer will be a paraphrase of or a very reasonable conclusion drawn from this causal chain.

(A) According to the causal chain, politicians’ isolation reduces the chance that local participation will elicit a positive response. So it is reasonable to suppose that less isolation would make positive responses *more likely*. But would it make positive responses **likely**? Would it make positive responses **probable**? After all, buying two lottery tickets, as opposed to just one, makes one *more likely* to win the lottery, but it does not make winning the lottery **likely**. The “likely” makes this choice an example of **Language of Unsupported Strength**.

(B) This answer choice contains the word “should” but there is no **should statement** in the stimulus. This answer choice can be eliminated because it contains an **Unsupported Judgment**.

(C) Superlatives are very dangerous in **Inference Question** answer choices: “**most important**” makes this choice an easy elimination: it contains **Language of Unsupported Strength**.

(D) **CORRECT**. This answer choice is a strongly supported inference. We know that rare media coverage of local politics indirectly discourages participation in local politics. It is a “*source*” of such discouragement, and increasing media coverage would “*reduce at least one source*.” The language in this answer choice is reasonable and not too strong: there is no claim that increased media coverage of local politics would *guarantee* greater participation in local politics, or even make such greater participation “*likely*.” The “*likely*” in (A) makes it an inferior answer choice to (D), which has better-supported language.

(D) This answer choice has the causal chain reversed. In the stimulus, isolated local politicians’ isolation indirectly discourages resident participation in local politics. Some other factor, such as a proposed toxic waste site or some other alarming development, might encourage resident participation in local politics and have no effect on local politicians’ behavior. Because this answer choice has the causal chain reversed, we can call this an example of an **Unsupported Cause**.

Some test takers are drawn to (E) because it appears to be a **contrapositive** of a claim made by the stimulus. If you do not know what a contrapositive is, fear not, it will be defined soon!

The following claim is supported by the stimulus:

Isolated Local Politicians Discourage Local Participation in Politics.

Could we not infer, by the contrapositive

~~*Discouraged Local Participation*~~ → ~~*Isolated Politicians*~~

No! Contrapositives can only be taken of **conditional statements**, which will be discussed soon. *Causal claims*, absent conditional language, do not yield contrapositives.

When two answer choices to an **Inference Question** both seem supported by the stimulus, choose the answer choice with weaker language. This does not mean that weak language is always correct, but of two otherwise equally acceptable answers, the weaker of the two will be a superior answer choice.

**This is the third of the 100 most difficult Logical Reasoning Questions ever.
Good luck!**

Question: Prep Test 32 (October 2000), Section 1, Question 18
(page 124 of *The Next 10 Actual, Official LSAT Pretests*)

The first sentence of the stimulus establishes that the cabin air is replenished *less frequently today than it was before 1985*. It also establishes the *less frequently the cabin air is replenished, the higher the level of carbon dioxide and the easier it is for airborne illnesses to spread*. You can combine the claims to form two conclusions.

- 1) The carbon dioxide levels on flights today is higher than it was before 1985.
- 2) It is easier for airborne illnesses to spread on flights today than it was before 1985.

However, on a ***Most Strongly Supported Question***, these conclusions are ***not precise predictions***, but instead establish a ***realm of possibility*** for the correct answer.

(A) There is no mention in the stimulus of a *loosening of regulations*. This “loosening of regulations” is an ***Unsupported Element***, which is an element of the answer choice that has no direct support in the stimulus. An ***Unsupported Element*** can be added to our list of ***Elimination Justifications***.

(B) This answer seems to paraphrase the second conclusion. ***As this question is a Most Strongly Supported Question, however, you must read all five answer choices and compare them.***

(C) The stimulus establishes that higher levels of carbon dioxide make it easier for illnesses to spread. It never goes so far as to say that low levels of carbon dioxide make it “*impossible*” for illnesses to spread. The strength of “*impossible*” makes this choice an easy elimination: it contains ***Language of Unsupported Strength***.

(D) The stimulus establishes that higher levels of carbon dioxide make it easier for illnesses to spread. It never establishes that the lower level of carbon dioxide before 1985 was “*sufficient*” to protect passengers. The strength of “*sufficient*” makes this choice an easy elimination: it contains ***Language of Unsupported Strength***.

(E) **CORRECT.** This answer choice matches the paraphrase of the first conclusion drawn above. So why is this answer choice superior to (B)? Answer choice (E) simply compares the carbon dioxide levels today to the carbon dioxide levels before 1980, a time obviously before 1985. Answer choice (B) is actually less similar to the second prediction than is (E) to the first prediction. This is because the second prediction was that airborne illness could ***spread more easily*** today than they did before 1985. (B) states that people are more likely to ***contract*** airborne illnesses

today than they were before 1985. Contracting an illness is obviously related to, but it not exactly the same as, an illness spreading. Perhaps today people have healthier immune systems or there are fewer contractible illnesses on a typical flight. In either of these cases, people would be less likely to contract an illness, even if the higher carbon dioxide levels allowed illnesses to spread more easily.

Both (B) and (E) establish comparisons. (E) is a *better-supported comparison* because it compares carbon-dioxide levels, which can be objectively measured and were specifically established to be higher *today* than before 1985. (B) is an inferior comparison because it compares the *likelihood of contracting an illness* today with that *likelihood* before 1985. Such a “*likelihood*” is harder to objectively compare: doing so is a far more complicated task than comparing carbon-dioxide levels. Because (B) is a comparison less likely to be true than another answer choice, it can be called an **Unsupported Comparison**, the fourth of our **Elimination Justifications**.

*An answer choice that seems likely to be true may be incorrect if there is a better one. On **Most Strongly Supported Questions**, you must read all five answer choices and **compare!***

*There are now five **Elimination Justifications** for **Inference Question** answer choices:*

Language of Unsupported Strength
Unsupported Cause
Unsupported Comparison
Unsupported Element
Unsupported Judgment

**This is the fourth of the 100 most difficult Logical Reasoning Questions ever.
Good luck!**

Question: Prep Test 34 (June 2001), Section 3, Question 19
(page 207 of *The Next Ten Actual, Official LSAT Pretests*)

The stimulus establishes that light is registered in the retina when photons from the light hit rhodopsin molecules and change the molecules shape. To put it more simply, ***we see things when molecules change shape***. However, normal molecular motion can cause the molecules to change shape, causing errors in the visual system. Or, ***molecular motion can cause visual errors***. Such motion is directly proportional to the temperature of the retina. Or, ***the warmer the retina, the more molecular motion***.

When I first saw this question, I thought that molecular motion could be higher in situations of extreme cold. After all, could not -185 degrees, with its large negative number, cause greater motion? The answer is, of course, no. Temperature is really just a measure of molecular motion. The coldest possible temperature, absolute zero, indicates that no motion is occurring. Warmer temperatures mean more motion.

On the LSAT, it is sometimes important to understand ***proportions***:

If A is directly proportional to B:

As A increases, B increases, and vice versa.
As A decreases, B decreases, and vice versa.

If A is inversely proportional to B:

As A increases, B decreases, and vice versa.
As A decreases, B increases, and vice versa.

Since there is no conclusion drawn in the stimulus, we should form our own conclusion. The conclusion should combine all the statements that can be combined. Because higher temperature means more molecular motion, and molecular motion causes visual errors, we can conclude

As temperature increases, visual errors increase.

This conclusion, however, is necessary but not sufficient to answer this difficult question correctly. Remember that a ***Most Strongly Supported Question*** requires that you find the answer choice most likely to be true, so even if an answer choice

looks correct, you must read all five and choose the best one. And, even if all the answer choices look incorrect, you must choose the one that is the *least bad*!

(A) There is no connection drawn in the stimulus between the light striking the retina and the retina's temperature. Also, the strength of "*depends*" makes this choice an easier elimination: it contains ***Language of Unsupported Strength***.

(B) CORRECT. There was nothing in the stimulus about animals whose body temperature *matches that of their surroundings*. You might have eliminated this choice as an example of an ***Unsupported Element***. However, ***an inference question answer can correctly apply what was described in the stimulus to a relevant situation***. Such a cold-blooded animal, whose body temperature matches those of its surroundings, would most likely experience more visual errors in warmer temperatures than in colder temperatures.

(C) There is no connection drawn in the stimulus between the temperature of the retina and the *speed* with which rhodopsin molecules react with photons. In fact, one would expect the higher temperature to increase the speed of the molecules' reactions. This answer choice seems to state the opposite of what is implied by the stimulus, so we could say that this choice ***Runs Counter to the Stimulus***: this is another of our ***Elimination Justifications***.

(D) There is no connection drawn in the stimulus between the sensitivity of the rhodopsin molecules and the surface area of the retina. Since "*surface area*" of the retina is mentioned nowhere in the stimulus, it is an ***Unsupported Element*** and makes this choice an easier elimination.

(E) Rhodopsin molecules are the only molecules mentioned in the stimulus, but that does not imply that they are the only naturally occurring pigment molecules in the retina. The strength of "*only*" makes this choice an easy elimination: it contains ***Language of Unsupported Strength***

Even if you are not totally convinced that (B) is true, it is the best of the five: (A) and (E) contain ***Language of Unsupported Strength***, (C) ***Runs Counter to the Stimulus***, and (D) contains an ***Unsupported Element***.

There are now six **Elimination Justifications** for **Inference Question** answer choices:

Language of Unsupported Strength

Runs Counter to Stimulus

Unsupported Cause

Unsupported Comparison

Unsupported Element

Unsupported Judgment

A correct answer to an **Inference Question** can contain new elements **if and only if** the claim correctly applies what was stated in the stimulus.

The situation in the box above occurs very often when an answer choice is a **conditional statement**, a statement that has an “**if/then**” structure.

Given the following premise:

All reptiles are cold-blooded

The following conclusion is fully supported:

If my pet Jacques is a reptile, Jacques is cold-blooded.

Jacques was not mentioned at all in the premise. However, because *Jacques* is **within the if** part of that **conditional statement** and the **then** part correctly applies to *Jacques* what was stated in the premise, the **conclusion** is a **valid** one – a fully supported conclusion.

The **if** part of a conditional statement is called a **Sufficient Condition**.

The **then** part of a conditional statement is called a **Necessary Condition**.

Before we begin **Must Be True Questions**, we must learn more about **conditional statements** and their **Sufficient and Necessary Conditions**.

Sufficient and Necessary Conditions

The keywords that establish that a statement is a ***conditional statement*** are all words that sit atop the "*Hierarchy of Strength*". These strongest words can be further divided into ***Sufficient and Necessary Keywords***.

Sufficient Keywords:

If
All
Each
Every
People who
When
Whenever
Whatever
Whoever

Necessary Keywords

Always
Never (negate the Necessary Condition)
Depends
Essential
Guarantees
Must
Needs
Only if
Only when
Requires
Requirement

Rewordings: Converse, Inverse, and Contrapositive

Statement: *All Spartans are Greeks.*

The following all have identical logical meanings to the initial statement:

If one is a Spartan, then one is a Greek
One is a Greek if one is a Spartan

*One is a Spartan only if one is a Greek
Only Greeks are Spartans.
Being a Spartan requires being a Greek
Being a Spartan guarantees that one is Greek.
Being a Spartan depends on being Greek.
People who are Spartans are Greeks.
Whoever is Spartan is Greek.*

The statement can be diagrammed

Spartan \rightarrow Greek

If the **sufficient and necessary conditions** are **reversed**, the result is

Greek \rightarrow Spartan

This is called the **converse**. If a statement is true, its **converse** is **not necessarily true**. In the example above, we know that the **converse** is **false** (what about Athens, and every other place in Greece?). However, suppose you were dealing with entities that you did not know very well. Perhaps you are told that the proposition $P \rightarrow Q$ is true. It would be unreasonable to assume that $Q \rightarrow P$ is true, but it would be also unreasonable to assume that $Q \rightarrow P$ is false. It would be **reasonable to declare that it is unknown** whether $Q \rightarrow P$ is true. That is why a **converse is not necessarily true**.

If the **sufficient and necessary conditions** are of the initial claim are **negated**, the result is

~~Spartan~~ \rightarrow ~~Greek~~

This is called the **inverse**. If a claim is true, its **inverse**, like its **converse**, is not necessarily true.

If the **sufficient and necessary conditions** are **reversed AND negated**, the result is

Greek \rightarrow Spartan.

This is called the **contrapositive**. If a claim is true, its **contrapositive must be true**. A **contrapositive** is simply a rewording, a paraphrase, of a **conditional statement**. Though the statements below might sound different, they all have the exact same logical meaning:

*If one is a Spartan, then one is a Greek
If one is not a Greek, one is not a Spartan.*

One is a Greek if one is a Spartan

One is not a Spartan if one is not a Greek.

*One is a Spartan only if one is a Greek
One is not a Greek only if one is not a Spartan.*

*Only Greeks are Spartans.
Only non-Spartans are non-Greeks.*

*Being a Spartan requires being a Greek
Being a non-Greek requires being a non-Spartan.*

*Being a Spartan guarantees that one is Greek.
Being a non-Greek guarantees that one is a non-Spartan.*

*Being a Spartan depends on being Greek.
Being a non-Greek depends on being a non-Spartan.*

*People who are Spartans are Greeks.
People who are not Greeks are not Spartans.*

*Whoever is Spartan is Greek.
Whoever is not Greek is not Spartan.*

Why the terms *converse* and *inverse*?

Some LSAT preparation courses refer to the *converse* as an “Illegal, Mistaken, or Bad Reversal.”

Some LSAT preparation courses refer to the *inverse* as an “Illegal, Mistaken, or Bad Negation.”

I prefer the classical terms *converse* and *inverse* for two reasons:

- 1) I want students to be able to draw connections between LSAT logic and the logic they may have encountered in a philosophy or mathematics class. A class on formal logic or geometry will employ the terms ***converse*** and ***inverse***.
- 2) The *inverse* is **not** a negation. If $A \rightarrow B$ is true, then $\neg A \rightarrow \neg B$ could be true. A ***negation*** is a ***logical opposite***. The *negation* of $A \rightarrow B$ can be stated in many ways:

*Some As are not Bs.
Even if A is true, B might not be true.
Not all As are Bs.
B is not a requirement for A.*

A can exist without B.

A **negation** of a claim **always contradicts** that claim. An **inverse** of a claim **never contradicts** that claim. To call an *inverse* a kind of negation, even a “bad” or “mistaken” one, is to invite a great deal of unnecessary confusion.

Negations – logical opposites are discussed more fully in Chapter 4.

Logically, the converse is equal to the inverse.

Statement: $A \rightarrow B$

Contrapositive: $\neg B \rightarrow \neg A$

Converse: $B \rightarrow A$

Inverse: $\neg A \rightarrow \neg B$

Note that the **inverse** and **converse** are the **contrapositive** of each other. In some of the explanations that follow, we refer to the *converse/inverse* of a statement, because a *converse* and an *inverse*, like a claim and its *contrapositive*, have identical logical meanings. It is ultimately better to understand both the inverse and the converse as **confusions of sufficient and necessary conditions**.

Given: $A \rightarrow B$

*$\neg A \rightarrow \neg B$ is the **inverse**, which is **not necessarily true**.*

*$B \rightarrow A$ is the **converse**, which is **not necessarily true**.*

*$\neg B \rightarrow \neg A$ is the **contrapositive**, which **must be true**.*

When negating “and” becomes “or” and “or” becomes “and”

Claim: *Bob is both rich and handsome.*

To **falsify** this claim – to **negate** it – we would establish the following:

*Bob is **not** both rich and handsome.*

This would allow three possibilities: Bob could be **rich and not handsome**, **handsome and not rich**, or **neither rich nor handsome**. He simply **cannot be both** rich and handsome.

We can symbolize this “*not both rich and handsome*” in the following manner:

~~*Rich or Handsome*~~

This allows for the three possibilities mentioned above. On the LSAT, unless directed otherwise, **or** is assumed to be **inclusive**, which means that both possibilities are allowed.

So we have established that the **negation** of “*Both A and B*” is

~~*A or B*~~

Now suppose we have a **conditional statement**:

Whoever I marry must be rich and handsome.

This statement could be diagrammed

Marry → *Rich and Handsome*

To take the contrapositive, reverse and negate:

~~*Rich and Handsome*~~ → ~~*Marry*~~

We know from above that the negation of “*A and B*” is “~~*A or B*~~”. Therefore, the negation of ***Rich and Handsome*** is ~~***Rich or Handsome***~~.

The final contrapositive:

~~*Rich or Handsome*~~ → ~~*Marry*~~

Therefore, **when taking a contrapositive, *and* becomes *or*.**

By the definition of *contrapositive*, we can take another *contrapositive* – reverse and negate again – and return to the initial wording of the claim. The **or** would once again be an ***and***.

So, **when forming a contrapositive, *or* becomes *and*, and *and* becomes *or*.**

This logical truth is not affected by whether the ***and*** or the ***or*** is in the ***sufficient or necessary condition***. It is a logical property of these conjunctions that they change in this way when they are negated.

When forming a ***contrapositive***, or the ***negation*** of any statement, ***and*** becomes ***or*** and ***or*** becomes ***and***.

Difficult Conditional Phrases

Only If
If and Only If
No/Not Both
Either/Or
Either/Or, but Not Both
Unless.

The following are words that invoke conditional relationships that can be very confusing.

Only if

A only if B = Only if B, then A

$A \rightarrow B$

$\neg B \rightarrow \neg A$

The easiest way to diagram an **only if** statement is to remember that **only if always immediately precedes the necessary condition**.

Statement: *You can go to Harvard Law only if you take the LSAT.*

Harvard Law School \rightarrow LSAT

~~LSAT \rightarrow Harvard Law School~~

Statement: *Only if you study hard will you succeed on the LSAT.*

Success on LSAT \rightarrow Study Hard

~~Study Hard \rightarrow Success on LSAT~~

Let's say that a more optimistic friend tells makes the following claim:

If you study hard you will succeed on the LSAT.

Study Hard \rightarrow Succeed on LSAT.

~~Succeed on LSAT \rightarrow Study Hard~~

Note that the "if you study hard" and the "only if you study hard" claims are the **converses** of one another. **Converses** are not **logically equivalent**, but they **do not contradict** one another. They are compatible: they *could both be true*. If both claims were true, the following would be true:

If you study hard, and only if you study hard, you will succeed on the LSAT.

This claim can be simplified:

If and only if you study hard you will succeed on the LSAT.

This statement then makes two claims about “studying hard”: it is **sufficient** for LSAT success,

Study Hard \rightarrow Succeed on LSAT

and it is **necessary** for LSAT success:

Succeed on LSAT \rightarrow Study Hard

These two converses can be combined to form what is called a **bi-conditional**, an arrow that goes both ways:

Succeed on LSAT \leftrightarrow Study Hard
~~*Succeed on LSAT \leftrightarrow Study Hard*~~

We now know how to diagram *if and only if*.

If and Only If

A if and only if B = If and only if A then B

A \leftrightarrow B
~~***A \leftrightarrow B***~~

The following expressions are all equal to *A if and only if B*:

All and only As are Bs.
If A occurs, then and only then does B occur.
A occurs when and only when B occurs.

If A, then B is equal to A only if B. They are diagrammed:

$$A \rightarrow B$$

$$\neg B \rightarrow \neg A$$

If B, then A is equal to B only if A. They are diagrammed:

$$B \rightarrow A$$

$$\neg A \rightarrow \neg B$$

A if and only if B is equal to B if and only if A. They are diagrammed:

$$A \leftrightarrow B$$

$$\neg A \leftrightarrow \neg B$$

No/Not Both

No As are Bs = No Bs are As = Not Both A and B

$$A \rightarrow \neg B$$

$$B \rightarrow \neg A$$

When a logical statement begins with the word **no**, the **necessary condition** must be negated. The **sufficient condition** stays as it is.

No one who is not member can enter the club.

The **sufficient condition** – *not a member* – stays as it is and the **necessary condition** – *enter club* – is negated.

$$\neg \text{Member} \rightarrow \neg \text{Enter Club}$$

=

$$\text{Enter Club} \rightarrow \text{Member}$$

When presented with a **no** claim, many test takers are tempted to negate the **sufficient condition**, because **no** is often the first word in the statement, and therefore closer to where we normally find the sufficient condition.

Statement: *No reptiles are humans.*

If you negated the **sufficient condition**, you would get the following claim:

~~Reptile~~ → Human

The statement now means that *if one is not a reptile, one must be human*. So all fish, birds, bears, and bacteria are humans! Clearly this is not the intention of the original statement. When the **sufficient condition** is negated, and the necessary is positive, the result is an *Either/Or* claim, which is discussed next.

The correct diagram of the statement is the following:

Reptile → ~~Human~~

Human → ~~Reptile~~

Of course, it is possible to have something that is neither a reptile nor a human, such as a bird, a bear, or a bacterium. **No/not both claims allow for the possibility that neither condition is true.**

Either/Or

Either A or B = If not A, then B = If not B, then A

A → B

B → A

Claim: *You must provide either a passport or a social security card.*

This claim could be reworded:

If you do not provide a passport, you must provide a social security card.

The claim would be diagrammed in this way:

~~Passport~~ → Social Security Card

~~Social Security Card~~ → Passport

The statement above does not disallow the possibility of providing both a passport and a social security card. On the LSAT, an ***either/or*** is assumed to ***inclusive***, allowing for both possibilities. If an ***exclusive either/or*** is intended, that must be explicitly stated:

You must have rice or pasta, but not both.

Such a statement is actually a combination of two statements:

1) You **must** have rice **or** pasta.

2) You **cannot** have **both** rice and pasta.

The first statement can be diagrammed in this manner:

$$\begin{array}{l} \text{Rice} \rightarrow \text{Pasta} \\ \text{Pasta} \rightarrow \text{Rice} \end{array}$$

The second statement can be diagrammed in this manner:

$$\begin{array}{l} \text{Pasta} \rightarrow \text{Rice} \\ \text{Rice} \rightarrow \text{Pasta} \end{array}$$

Note that the diagrams of the first claim are each **converses** of the diagrams of the second claim. This is one reason why **either/or** and **not both** claims are so easy to confuse. As with an **if and only if** statement, when converses are combined, a bi-conditional is formed:

$$\begin{array}{l} \text{Rice} \leftrightarrow \text{Pasta} \\ \text{Pasta} \leftrightarrow \text{Rice} \end{array}$$

Most test takers would probably prefer to write out or state to themselves “*Either rice or pasta, but not both*”, rather than construct this somewhat confusing diagram. But it can be very useful to know that an **either/or, but not both** can, like an **if and only if**, be represented with a bi-conditional.

No As are Bs = No Bs are As = Not both A and B = If A, then not B = If B, then not A

$A \rightarrow \neg B$

$B \rightarrow \neg A$

Either A or B = If A, then not B = If not B, then A

$\neg A \rightarrow B$

$\neg B \rightarrow A$

Either A or B, but not both

$A \leftrightarrow \neg B$

$B \leftrightarrow \neg A$

And now onto one of the most difficult diagramming keywords:

Unless

A unless B = B unless A

$\neg A \rightarrow B$

$\neg B \rightarrow A$

There are two methods to diagram an **unless** statement:

Method 1: **unless** introduces the **necessary condition**. The other condition is **negated** and becomes the **sufficient condition**. If the other condition is negative in the original sentence, it becomes positive in the sufficient condition.

You cannot go to Harvard Law School unless you take the LSAT.

Harvard Law School \rightarrow LSAT

Method 2: **unless** means **if not**. So **unless** introduces a **sufficient condition** that must be negated.

You cannot go to Harvard Law School unless you take the LSAT.

~~LSAT \rightarrow Harvard Law School~~

Because each method produces the **contrapositive** of the other, both methods are equal. It is, however, best to be familiar with both methods, because some sentences will be easier to diagram with one of the two methods. This is particularly true when **unless** precedes conditions joined by a conjunction such as **and** or **or**.

You cannot go to Harvard Law School unless you take the LSAT and have an undergraduate degree.

Here Method 1 would be easier.

Harvard Law School → LSAT and Undergraduate Degree

If you were to use Method 2, you would have to negate “take the LSAT and have an undergraduate degree.” To do this correctly, you would have to remember to change “and” to “or.”

LSAT or Undergraduate Degree → Harvard Law School

The following statement would be easier to diagram using Method 2:

We will have plenty to eat and a fun time unless Rob arrives.

~~*Rob Arrives*~~ → Plenty To Eat **and** Fun Time

Using Method 1, you run the risk of incorrectly negating “plenty to eat and a fun time.” The following diagram is incorrect.

~~*Plenty To Eat and Fun Time*~~ → Rob Arrives

The correct diagram is

~~*Plenty To Eat*~~ **or** ~~*Fun Time*~~ → Rob Arrives.

Except and **until** can be diagrammed like **unless**.

All students, except for those who have received special permission, must take the final exam.

~~*Special Permission*~~ → Take Final Exam

~~*Take Final Exam*~~ → Special Permission

We will not prevail until reinforcements arrive.

~~*Prevail*~~ → Reinforcements Arrive

~~*Reinforcements Arrive*~~ → Prevail

Some test preparation programs add **without** to the list of words that can be diagrammed like **unless**. This is usually correct, because on the LSAT usually **without** appears with a strong verb like **cannot**.

*Without reinforcements, we **cannot** survive*

*Survive \rightarrow Reinforcements
Reinforcements \rightarrow Survive*

However, when **without** appears with a weaker verb, no conditional relationship is established.

*Without reinforcements, we **can** survive.*

It would be unreasonable to infer that the following diagram is correct:

*Survive \rightarrow Reinforcements
Reinforcements \rightarrow Survive*

The statement established that survival was **guaranteed**, even if reinforcements did not arrive. The statement was not that reinforcements were **sufficient** or **necessary** for *surviving* or for *not surviving*. The claim was that survival **does not depend** on reinforcements. The statement could be represented in the following manner:

*Survive **and** Reinforcements*

This establishes that “surviving” and “no reinforcements” can coexist. These two conditions **do not imply** one another, **but** they **do not contradict** one another. You could also say such conditions are **consistent**, which means **does not contradict**. Such a claim would be the **logical opposite** of the following claim:

Survive \rightarrow Reinforcements

Logical Opposites are discussed further in Chapters 4 and 5.

A unless B = B unless A

$\neg A \rightarrow B$

$\neg B \rightarrow A$

Not A unless B = B unless not A

$A \rightarrow B$

$\neg B \rightarrow \neg A$

Unless = Except = Until = (in most cases) Without

Question Category: Inference

Question Type: Must Be True

The second type of **Inference Question** requires an answer choice that **must be true**. The following are examples of this question type:

If the statements above are true, which of the following must be true?

Which of the following can be properly inferred from the statements above?

Which of the following can validly concluded from the statements above?

Which of the following is a conclusion that can be validly drawn from the statements above?

Note that the last example asks for a “**conclusion**” that is **valid**. A **valid conclusion** is an absolutely true claim, but not necessarily the **main conclusion** of an argument.

The stimuli of **Must Be True Questions** usually have statements that can be diagrammed. When statements can be diagrammed, they should be diagrammed. Such diagrams allow you to properly predict the correct answer.

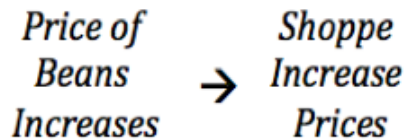
Follow this approach for diagramming **Must Be True Questions**:

- 1) **Diagram** the **conditional statements**
- 2) If possible, **connect** the **conditional statements**
- 3) **Apply** the **unconditional facts**, if any, to the **conditional statements**. If there are no facts, take the **contrapositive** of the statements.
- 4) If there are facts in the stimulus, the correct answer will be a conclusion that you can reach by **applying the facts** to the **conditional statements**. If there are no facts in the stimulus, the correct answer will most likely be a **combination** of the statements or **contrapositive** of those statements.

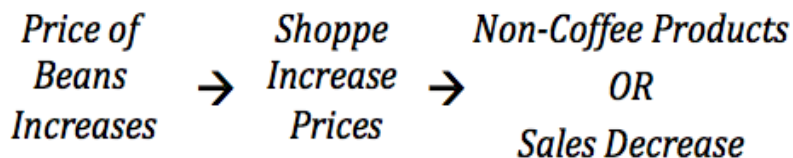
First we'll look at a June 2007 question that contains only conditional statements:

Question: June 2007, Section 3, Question 22

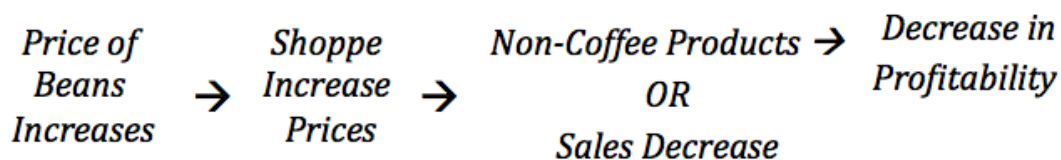
Because of the *Sufficient Keyword* **if**, the first sentence can be diagrammed:



The second sentence begins with “*in that case*”, which refers to *Shoppe Increase Prices*, and establishes that at least one of two conditions will be **necessary result** of *increased prices*. Because the **sufficient condition** of the second sentence matches the **necessary condition** of the first sentence, the two sentences can be combined: Instead of diagramming each statement separately, extend the chain when the statements allow you to do so.



The third sentence establishes a **necessary result** of *Non-Coffee Products*. It can be diagrammed and added to the chain:



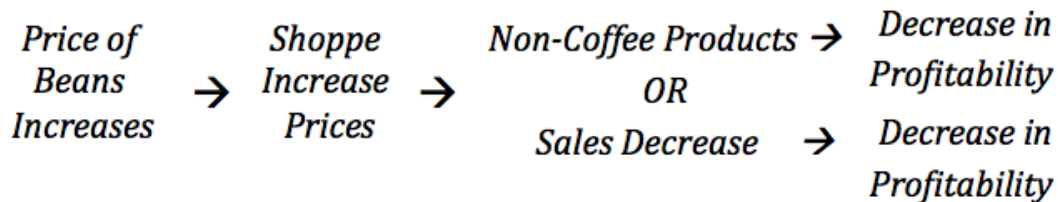
The last sentence contains the *Necessary Keyword* **only if**. Furthermore, because the goal of diagramming is to combine statements, the “*avoid a decrease in overall profitability*” and “*sales do not decrease*” should be diagrammed in such a way that they can be combined more easily with the other statements. It should be diagrammed



This diagram might not seem to combine with chain above. But we can take its **contrapositive**:

Sales Decrease → Decrease in Profitability

Now the claim connects easily to the end of the chain. All the statements can be combined:



The correct answer will probably, but not necessarily, be a statement restates the entire chain, while skipping over the intermediate steps: *if the price of beans increases, the Shoppe is guaranteed to see a decrease in its profitability*. The correct answer, however, could be any part of this chain.

It is probably not necessary to take the contrapositive of this entire chain. **Logical Reasoning Questions** seldom involve so much work: diagramming and connecting 4 conditional statements is usually enough!

Now let's look at the answer choices:

(C) **CORRECT**: Because of the *Sufficient Keyword* **if**, this choice can be diagrammed: *Price of Beans Increase → Decrease in Profitability*. As predicted, the correct answer is a restatement of the entire chain that skips over the intermediate steps.

(A) Because of the *Sufficient Keyword* **if**, this choice can be diagrammed: *Decrease in Profitability → Price of Beans Increases*. This is the *converse* of a combined claim established by the stimulus. A *converse* is not necessarily true, and so incorrect on a Must Be True question.

(B) Because of the *Sufficient Keyword* **if**, this choice can be diagrammed: *Decrease in Profitability → Non-Coffee Products OR Sales Decrease*. This is the *converse* of the second sentence.

(D) Because of the *Keyword* **without**, paired with the verb *cannot*, this choice can be diagrammed: ~~*Decrease in Profitability → Price of Beans Decrease*~~. Correctly diagrammed, however, it makes very little sense. If the "decrease" were changed to "increase", this choice would be supported by the contrapositive of the combined chain above and would be correct. As it is, this confusing choice is here to perplex

those who did not adequately diagram and further confuse those who do not understand how to diagram a **without** claim.

(E) Because of the Keyword **either/or**, this choice can be diagrammed: ~~Price of Beans Increase~~ → Sales Increase. This could be true, but is *not necessarily true*. The condition ~~Price of Beans Increase~~ does not precede an arrow in our diagram; it therefore has **no necessary condition** and **cannot lead to a conclusion that must be true**.

Connect conditionals whenever you can. Those connections will lead you to the correct answer.

Now let's look at question that requires you to apply **conditional statements** to **unconditional facts**.

This is the fifth of the hardest 100 Logical Reasoning Questions Ever! Good luck!

Question: Prep Test 15 (June 1995), Section 2, Question 12
(page 265 of 10 Actual, Official LSATs)

Do not be scared of a highly technical or scientific stimulus. When the language is difficult, the logic is usually quite simple. You can understand the logic by paying close to attention to keywords that introduce sufficient and necessary conditions.

The second sentence, because of the *Sufficient Keyword* **if**, can be diagrammed in this way:

<i>Polypyrroles Form From Pyrrole in the Presence of Zeolite</i>	\rightarrow	<i>Lumps on Outer Surface of Zeolite OR Chains within Zeolite</i>
--	---------------	---

To simplify, let's call it:

Polypyrroles Form \rightarrow Lumps on Zeolite OR Chains in Zeolite

The second sentence, because of the **Sufficient Keyword** "when", can be diagrammed in this way:

Zeolite Changes From Yellow to Black \rightarrow Polypyrroles Form From Pyrrole

To simplify, let's call it:

Yellow to Black \rightarrow Polypyrroles Form

At this point, you can combine the two diagrams of the second and third sentences:

*Yellow to Black \rightarrow Polypyrroles Form \rightarrow
Lumps on Zeolite **OR** Chains within Zeolite*

You might be skeptical about these simplifications. I conveniently, perhaps too conveniently, ignored phrases like “*in the presence of zeolites*”. Perhaps the simple combination above is not allowed due to one of these ignored phrases!

This objection is reasonable, but such simplifications are almost certainly not going to be a problem when diagramming. The LSAT authors are not interested in cheap tricks and creating statements that seem like they connect, but in fact do not connect due to some highly technical detail. The test is hard enough as it is. ***When statements seem like they connect, they almost certainly do, and so you should not be so skeptical that you overlook the simple connections present.***

We have diagrammed the conditional statements. At this point we need to apply the following two ***unconditional facts*** to those statements.

Unconditional Facts

*Yellow zeolite turned black.
No polypyrroles on outer surface of zeolite*

The first fact invokes the sufficient condition of the combined chain.

Yellow to Black → Polypyrroles Form → Lumps on Zeolite OR Chains in Zeolite

We can conclude that there should be “*Lumps on Zeolite*” or “*Chains in Zeolite*.”

The second fact establishes that there were *no polypyrroles on the surface of the zeolite*. Since “*nothing on surface*” implies “~~*Lumps on Zeolite*~~,” we can infer that *chains of polypyrrole in the zeolite* must have formed.

The correct answer will be easy to find if you have done the proper analysis. At this point, you can be quite certain that the correct answer must state that chains of polypyrrole have formed.

(C) CORRECT. This choice is the only one that mentions the formation of “*chains of polypyrrole*.”

(A) The zeolite was “*free of any pyrrole*” before it was submerged, so how could polypyrroles have “*already formed*”? This choice ***Runs Counter to the Stimulus***.

(B) This answer choice is an easy elimination because it contains the ***Unsupported Cause “responsible for its color change.”*** It is important to remember that conditional statement may, but do not necessarily, imply causality.

(D) This choice is almost certainly false: how could chains have formed within the zeolite if none of the pyrrole attached itself to the zeolite? “***None***” makes this choice an easy elimination: it contains ***Language of Unsupported Strength***.

(E) The stimulus established that the clains form “*within the zeolite’s inner channels.*” So how can it be true that “*little, if any*” of the pyrrole reached the zeolite’s inner channels. This choice ***Runs Counter to the Stimulus.***

To recap, the full diagram of the stimulus is

Yellow to Black → Polypyrroles Form → Lumps on Surface OR Chains within Zeolite

Facts: Yellow to Black AND No Lumps on Surface

Valid Conclusion: Chains within Zeolite

I hope that you can see that underneath the highly technical language is some rather simple logic.

*By properly connecting **conditional statements** and correctly apply them to the **unconditional facts**, you can turn the most difficult passages into simple statements that predict the correct answer.*

Let's try another ***Inference Question*** that contains difficult language and conditional reasoning. It is also a rare instance of a ***Most Strongly Supported*** question that contains conditional reasoning.

This is the sixth of the hardest 100 Logical Reasoning Questions Ever! Good luck!

Prep Test 31 (June 2000), Section 3, Question 22
(page 101 of The Next 10 Actual, Official LSAT)

The stimulus is an onslaught of scientific language that can be confusing. If you get lost in these details, you should actually be thankful when you see the word **if**, because a **Sufficient** or **Necessary Keyword** indicates not only that a diagram is possible but also that some of the most important information in the stimulus will follow.

While usually you do not do much analysis and try to predict an answer on **Most Strongly Supported Questions**, when you encounter conditional statements, predict as you would on **Must Be True Question**!

The conditional statement is actually the second clause of the last sentence, following the comma. Because the of Sufficient Keyword **if**, it can be diagrammed in this way:

<i>Nucleomorph Not the Remains of an Engulfed Organism</i>	→	<i>One Would Expect to Find a Single Version of the Gene</i>
--	---	--

This can be simplified:

Engulfed → *Single Version of Gene*

The **unconditional facts** that precede the **conditional statement**:

The definition of “endosymbiosis”: *the engulfing of one organism by another leads to the origin of a new organism*
An unusual nucleomorph has been found in a chlorarachniophyte
Two versions of gene have been found in the nucleomorph

The third fact invokes the contrapositive of the conditional claim, because “*two versions of a gene*” implies “**not** *a single version of a gene.*” The **contrapositive** of the conditional claim:

Single Version of Gene → *Engulfed*

We can therefore conclude that the *nucleomorph* was probably “*engulfed*.” This conclusion, when combined with the definition of *endosymbiosis*, supports the claim that *chlorarachniophytes emerged through endosymbiosis*.

(E) **CORRECT.** This answer choice closely matches the prediction above, which correctly applied the **conditional statement** to the fact about the “*two versions of the gene*,” and invoked the definition of *endosymbiosis*.

(A) This answer choice can be diagrammed, because of the *Necessary Keyword* **only**: *Nucleomorph* → *Organism Originated Through Endosymbiosis*. The stimulus never stated that the presence of a nucleomorph is alone sufficient to prove that endosymbiosis has occurred. **Only** makes this choice an easy elimination: it contains **Language of Unsupported Strength**.

(B) This answer choice could be true: if one replaced “*all*” with “*some*”, this answer choice must be true. As it is, **all** makes this choice an easy elimination: it contains **Language of Unsupported Strength**.

(C) The stimulus is not about the origins of *nucleomorphs*, it is about the probable origins of *chlorarachniophytes*. Since the “*origin of nucleomorphs*” is mentioned nowhere in the stimulus, it is an **Unsupported Element** and makes this choice easier to eliminate.

(D) This answer choice can be diagrammed because of the *Keyword* **unless**: *Two Organisms Undergo Endosymbiosis* → *Nucleomorph*. The stimulus states that “*engulfing*” is a defining characteristic of endosymbiosis. The stimulus never states that a “*nucleomorph*” is a necessary condition of endosymbiosis. Note that this choice is close to the *converse* of (A). **Unless** makes this choice an easy elimination: it contains **Language of Unsupported Strength**.

You would be correct to wonder whether (E) *must be true*. After all, the **conditional statement** qualifies its own certainty with the phrase “*one would expect*.” Also, and more importantly, even if we were certain the *nucleomorph* was *engulfed*, that does not *guarantee* that *endosymbiosis* occurred. The stimulus establishes that *engulfing* is a defining characteristic of *endosymbiosis*; the stimulus never establishes that *engulfing* sufficiently proves endosymbiosis.

These objections would be relevant for a **Must Be True Question**, but they can be fatal for a **Most Strongly Supported Question**: **It is important to note that evidence can support a claim even if it does not entirely prove that claim.** The evidence in the stimulus supports the claim in (E) more than it supports any other answer choice.

Sometimes, when there is not a clearly correct answer on a **Most Strongly Supported Question**, it can be helpful to shift your thinking from “**Inference**” mode to “**Main Point**” mode. That is, instead of finding a fully supported statement, as you

always would on a **Must Be True Question** and would usually do in a **Most Strongly Supported Question**, try to find an answer choice that provides a reasonable judgment that encompasses all the evidence in the stimulus – like a **main point** would. This method can be very useful to get to (E) on this question, even if you fail to fully comprehend the **conditional reasoning** in this question. After all, behind the scientific language, this stimulus is remarkably simple:

First statement

Establishes a definition of a phenomenon – endosymbiosis – by which some organisms have originated.

Second statement

Describes an organism that contains some interesting evidence - an unusual nucleomorph.

Third statement

Further describes this interesting evidence and shows how it relates to the phenomenon defined in the first sentence.

When examined in this way, (E) looks remarkably like a reasonable **main point** to draw from this evidence. (E) states that the organism described in the second sentence emerged through the phenomenon defined in the first sentence.

This **Main Point Approach** to **Most Strongly Supported Questions** works well when you cannot find any proper inferences. I have found it particularly useful on some recent difficult **Most Strongly Supported Questions** that have appeared after the June 2007, particularly **Prep Test 53 (December 2007), Section 3, Question 21; and, Prep Test 57 (June 2009), Section 3, Question 25**. These examples are covered in later chapters.

Some **Most Strongly Supported Questions** are easier to answer when you think of them more like **Main Point Questions**. When you cannot find a fully supported inference, find the answer choice that provides that most reasonable judgment based on the stimulus.

When conditional statements appear in the stimulus of a **Most Strongly Supported Questions**, you can treat the like question like a **Must Be True Question** with conditional statements: diagram and predict!

Now let's look at a question that asks for an answer choice that is **LEAST** supported by the stimulus.

This question is the seventh of the 100 Hardest Logical Reasoning Questions Ever. Good luck!

Question: Prep Test 26 (September 1998), Section 3, Question 20.

Here the correct answer choice is one that is LEAST likely to be true. In practice, this means that four answer choices **must be true**, or are extremely likely to be true, and one answer choice, the correct answer choice, is **unsupported**.

Because of the **Necessary Keyword** "only," the first statement can be diagrammed:

~~Can be Translated Well~~ → Poetry

The next statement starts with the conclusion of the argument, introduced by the **Conclusion Keyword** "therefore": "it is poets who preserve languages." This conclusion is supported by the statement above, and by the **conditional statement** (that starts with the **Evidence Keyword** "for") that follows:

Can Be Translated Well → ~~Motivation to Learn a Language~~

Notice that I diagrammed "if we get everything written in it from a translation" as *Can be Translated Well*. I do emphasize that **your diagrams should always aim to connect!** If that means changing a few words, do it, so long as that word change does not significantly alter the meaning of the statement. In the case of this argument, connecting is not really an issue: by concluding "it is poets who preserve languages" the argument *implicitly* connects the claims for you. But here is the connected claim:

Motivation to Learn a Language → ~~Can be Translated Well~~ → Poetry

The conclusion drawn above is only an **intermediate conclusion**. The last sentence is the main conclusion, introduced by the **Conclusion Keyword** "so," but it contains evidence within it, introduced by the **Evidence Keyword** "since." The evidence can be diagrammed, because of the **Keyword** **except** (diagrammed like **unless**).

Witness Beauty of Poetry → Understand Language of Composition

The **main point**, which seems reasonable given the evidence, is that "we have a motivation to learn the language (of a poem)." The few times that an **Inference Question** has contained an actual **argument** (rather than a **fact set**), the arguments have been *reasonable*. The goal is not to judge the argument, however; it is to find those answer choices that are supported by the stimulus and eliminate them.

Because the correct answer is unsupported, you have way to predict what that answer will be! Read each answer choice and eliminate those that **must be true**.

(A) While this choice seems unlikely to be true, because of the **Sufficient Keyword** “all,” it can be diagrammed: *Nonpoetic Literature* → *Can Be Translated Well*. This is almost identical to the **contrapositive** of the first statement; it therefore must be true and the answer choice is incorrect. Sometimes the word “literature” is confusing here. After all, the precise contrapositive of the first claim was *Poetry* → *Can Be Translated Well*. How can the “literature” in the answer choice be justified? This question will be answered after the remaining answer choices are.

(B) **CORRECT**. The crucial word in this choice is “purpose.” We know that poetry preserves languages, because those who want to experience the beauty of poetry in its original language have a *motivation* to learn that language. We must not, however, confuse *purposes* with *consequences*. Scholars today learn ancient Greek to read Homer in his original language. But we **cannot infer** that a **consequence** of Homer’s work **proves** the **purpose** behind Homer’s work. Perhaps he wrote poetry to become famous, perhaps he was divinely inspired, or maybe he just needed the money: it was surely hard out there for a blind Greek dude. A *purpose* is a conscious *motivation*, and a motivation is a kind of *cause*. We could say, therefore, that this answer choice contains an **Unsupported Cause**. That, in this case, makes this answer choice correct!

(C) **Some** means “**at least one**.” So this answer choice claims that at least one translation does not capture everything in the original. Since we know that translated poetry cannot capture all that was in the original, this answer choice, on the very reasonable assumption that such translations actually exist and are not theoretical, **must be true**.

(D) Because of the **Sufficient Keyword** “people who,” this answer choice can be diagrammed: *Understand Language of Poem* → *Beauty of Poetry Immediately Accessible*. This answer choice is very close to the contrapositive of the second conditional statement above, but some test takers are skeptical of the “immediately.” As with (A), this issue will be discussed below.

(E) “Impossible” might be seem like **Language of Unsupported Strength**, but the stimulus has some strong words: for example, “cannot” appears twice. Since we know that translated poetry does not capture all of poetry’s beauty, we can infer that *perfect* translations of poetry are *impossible*, and therefore that a “perfect translation” is “*sometimes impossible*.”

Important points about (A) and (D).

(A): We know the following statement is true, according to the stimulus:

~~Poetry~~ → Can Be Translated Well

Does it follow from the stimulus that this statement is true?

Nonpoetic Literature → Can Be Translated Well

Some try to argue “no”. They claim that “*literature*” is an **Unsupported Element**. **Sometimes, however, what seems like an Unsupported Element is actually irrelevant to the truth of an answer choice.** The original claim was

~~Poetry~~ → Can be Translated Well

“*Nonpoetic*” is equal to ~~Poetry~~. Once we have the sufficient condition *nonpoetic*, we have the enough to conclude that whatever is *nonpoetic* can be translated well. So whether it is *nonpoetic* literature, or a *nonpoetic* Applebee’s menu, we can determine that whatever is *nonpoetic* can be *translated well*. The word “*literature*” is actually irrelevant to the truth of the answer choice.

When an **Inference Question** answer choice can be expressed as a **conditional statement**, as in (A), it can contain elements not mentioned in the stimulus and still **be true**, so long as the answer choice correctly applies the conditional reasoning. This issue was discussed earlier, before the introduction of conditional reasoning as a topic, but it deserves another look! Consider the following premise:

All Spartans are brave.

It can be diagrammed:

Spartans → *Brave*

The following statement is completely supported by the premise, and would be correct as a **Must Be True** or **Most Strongly Supported Question**:

If Bruno is a Spartan fishmonger, then Bruno is brave.

The premise never mentioned “*Bruno*” or “*fishmongers*”, but because these elements are within the **sufficient condition** (the **if** part of the claim), **and** they properly connect to a **sufficient condition** established by the premise, **and** the necessary condition – *brave* – is a condition fully supported by the premise, the statement **must be true**.

(D) In the explanation above, I noted that this answer choice was a paraphrase of the contrapositive of the last conditional. Here is that contrapositive:

~~Understand Language of Composition~~ → ~~Witness Beauty of Poetry~~

And here is the diagram of answer choice (D):

~~Understand Language of Composition~~ → ~~Beauty Immediately Accessible~~

The *immediately* sometimes convinces test takers that (D) is **unsupported** by the stimulus and is therefore correct. It is true that *immediately* can be an example of **Language of Unsupported Strength** that can make a claim less likely to be true. If it is established that the sea levels will rise due to global warming, it might not be the case that the sea levels will rise “*immediately*.” **You should not, however, be so quick to judge a strong word when such a word is attached to a negated verb.** If it is established that the sea levels will **not** rise, it would be reasonable to conclude that the sea levels will *not* rise **immediately**.

Together, these two answer choices demonstrate an important point about **Elimination Justifications**.

If Language of Unsupported Strength, an Unsupported Element, or some other Elimination Justification appears in the sufficient part of a conditional statement – the if part – or is attached to a negated verb in a statement, you cannot perfunctorily consider that statement to be unsupported.

Perfunctorily means “*mechanically or automatically*.” It is a word that appears often in Reading Comprehension, so learn it!

That was a lot of explaining for one question, but do not despair! You are now able to see that the word “*purpose*” in (B), an **Unsupported Cause** stated **unconditionally** and attached to a **positive verb**, is far more dangerous than the words “*literature*” in (A) and “*immediately*” in (D). Remember, for this question, “danger” makes an answer choice more likely to be correct! With practice, you will make this assessment much more quickly on future difficult questions.

Because **Must Be True (EXCEPT) Questions** usually contain **Quantity Statements**, such questions are discussed in Chapter 4.

Most Strongly Supported and Must Be True Questions

Green Blues

Those questions you should logically diagram are labeled “*Conditional Reasoning*”.

Preptest 7

Section 1: 8, 9, 12, 16, 21

Section 4: 7, 10, 15

Preptest 9

Section 2: 13 (Conditional Reasoning)

Section 4: 4 (Conditional Reasoning), 7, 13, 16, 23

Preptest 10

Section 1: 18 (Conditional Reasoning), 22 (Conditional Reasoning), 24

Section 4: 10, 16, 20

Preptest 11

Section 2: 7 (Conditional Reasoning), 16 (Conditional Reasoning)

Section 4: 4, 14, 16

Preptest 12:

Section 1: 8, 21

Section 4: 1, 3

Preptest 13

Section 2: 4, 6, 10 (Conditional Reasoning), 18

Section 4: 5, 18

Preptest 14

Section 2: 11, 16, 23

Section 4: 5, 17, 21

Preptest 15

Section 2: 9, 12, 15

Section 3: 5, 7 (Conditional Reasoning), 26 (Conditional Reasoning)

Preptest 16

Section 2: 3, 9, 11, 20

Section 3: 5, 8, 16, 21

Preptest 18

Section 2: 20

Section 4: 6, 10, 24

The Ancient Ones

Preptest 1

Section 3: 4, 7, 14 (Conditional Reasoning), 16, 20

Section 4: 2, 6, 11, 21 (Conditional Reasoning)

Preptest 2

Section 2: 9 (Conditional Reasoning), 13 (Conditional Reasoning), 16, 21

Section 4: 8, 18, 21 (Conditional Reasoning), 23

Preptest 3

Section 2: 4 (Conditional Reasoning), 10 (Conditional Reasoning),
22 (Conditional Reasoning)

Section 4: 4, 9, 13 (Conditional Reasoning), 16, 22

Preptest 4

Section 1: 7, 12 (Conditional Reasoning), 15, 22

Section 4: 7 (Conditional Reasoning) 17, 21

Preptest 5

Section 1: 1, 25 (Conditional Reasoning)

Section 3: 12, 22 (Conditional Reasoning), 23

Preptest 6

Section 2: 3, 6, 10, 11 (Conditional Reasoning), 12, 23 (Conditional Reasoning)

Section 3: 5, 11 (Conditional Reasoning)

Preptest 8

Section 1: 9, 14, 19, 22, 24

Section 4: 5 (Conditional Reasoning)

Preptest 17

Section 2: 1, 20

Section 3: 1, 11 (Conditional Reasoning), 24

Chapter Three

Question Category: Additional Information

Question Types: Weakening and Strengthening

The next major category of questions contains those questions that ask for some *additional information that affects the stimulus*. These include **Weakening Questions**, **Strengthening Questions**, and **Paradox Questions**. What unifies all three types of question is that the correct answer must provide some new information that has a significant effect on the claims in the stimulus.

This requirement represents a significant shift from all the questions covered thus far: they all required an answer that was either a description of or an implication of the stimulus: the correct answer could not contain *language stronger than that in the stimulus, elements not in the stimulus, causes not in the stimulus, or judgments not in the stimulus*. In other words, the correct answer could not contain **Language of Unsupported Strength, Unsupported Elements, Unsupported Causes, Unsupported Comparisons, and Unsupported Judgments**.

The question stem is an example of a **Most Strongly Supported Question**:

The author's argument most supports which of the following claims?

This question stem is an example of a **Strengthening Question**:

Which of the following most supports the author's argument?

The two questions sound similar, but are in fact very different: in the first example, the **Most Strongly Supported Question**, the correct answer is the **object** of the **active verb** "supports." In second example, the correct answer is **subject** of the **active verb** "supports."

So at first I thought we would call **Most Strongly Supported Questions**, and other similar questions, "*objective questions*" and **Strengthening Questions**, and other similar questions, "*subjective questions*." Then I realized how incredibly dumb that would be, suggesting as it does that certain questions have answers that are objectively correct while other questions are more a matter of personal taste. All questions have answers that are objectively correct; when there is an objectively correct answer choice, the question is a bad one and should have been removed from scoring.

To find a better way to distinguish these two broad categories of question, let's rephrase the **Most Strongly Supported Question**:

Which of the following is most strongly supported by author's argument?

In this phrasing, the correct answer is the *subject* of the **passive** verb "supported." In the **Strengthening Question** above, the correct answer is the *subject* of the **active** verb "supports."

So, *Most Strongly Supported Questions*, all **Inference Questions**, and all **Argument Structure Questions** (*Main Point, Role of Statement, Method of Reasoning*) can be called **Passive Questions**: the correct answer must **be** what the question demands, but it **cannot do anything new** to the stimulus: this is why *Language of Unsupported Strength, Unsupported Elements, Unsupported Causes, Unsupported Comparisons*, and *Unsupported Judgments* are all grounds for eliminating an answer choice.

These new questions, however, are **Active Questions**: the correct answer **must do something new to the stimulus**. *Language of Unsupported Strength* and the other **Elimination Justifications** no are longer dangerous for an answer choice. In these questions, strong language and new, unmentioned, elements can make an answer choice much better!

In these questions, we are not at all concerned with whether an answer choice is likely to be true. We are concerned with whether an answer choice, *if true*, has the *impact* demanded by the question. This is why most questions in this category contain the phrase "*if true*" within them.

Also, these **Additional Information Questions**, like **Most Strongly Supported Questions**, are all **relative**: there may be more than one answer choice that *weakens* or *strengthens*, for example, so you must decide which one weakens or strengthens the most. In other cases, all the answer choices may have very little impact on the argument, but there will be one that is better than the others, that **does more** than the incorrect answer choices.

As these questions are **active** and **relative**, *Language of Unsupported Strength* is no longer an Elimination Justification. Get ready for some new **Elimination Justifications**, such as **Language of Lesser Strength**!

Question Type: Weakening

Most weakening questions are phrased in the following way:

Which of the following, if true, most weakens the author's argument?

Which of the following, if true, most undermines the author's argument?

However, weakening questions can also be phrased in the following ways:

Which of the following most challenges the hypothesis put forth by the scientists?

Which of the following would count as evidence against the author's explanation?

A *hypothesis* and an *explanation* are essentially the same: they are both **causal conclusions** supported by limited evidence.

Consider the following:

*A researcher noted in a certain laboratory experiment, mice fed a high-protein diet have higher rates of cancer than mice fed a high-carbohydrate diet. The researcher **hypothesized** that a high-protein diet can cause cancer in mice.*

Other ways to express the italicized text:

*The researcher **concluded** that a high-protein diet could cause cancer in mice.*

*The researcher claimed the differing cancer rates can be **explained** by the possibility that a high-protein diet causes cancer in mice.*

So, for the purposes of most **Weakening** and **Strengthening Questions**, look on **explanations**, **hypotheses**, and **conclusions** as essentially the same: **causal conclusion** that can be *strengthened* or *weakened* by **additional evidence**.

There are some significant differences between what is typically called an **explanation** and a **hypothesis**. An **explanation** can be limited to one phenomenon, but one who proposes a **hypothesis** usually aims to have the **hypothesis** confirmed by future events or a future experiment: ultimately, the goal of an ambitious scientist who forms a **hypothesis** is a *general scientific rule*.

For example, a historian might claim that competition over trade routes was the primary cause of the Trojan War. This would be a historical **explanation** for the war, and could be effectively *strengthened* or *weakened* **only by evidence from the time of that war**. A political scientist might read the historian's work and form the **hypothesis** that competition over trade routes is the primary cause of all wars. This **hypothesis** is far broader than the historian's **explanation**; the **hypothesis** could be *strengthened* or *weakened* by evidence drawn from virtually any point in human history.

Despite these differences, it is important to realize that *explanations and hypotheses*, as well as many *conclusions* that precede *Weakening* and *Strengthening Questions*, propose **causes for observed effects**. To use the terminology of arguments, *the observed effects are the evidence and the cause is the conclusion*.

*When weakening an argument that proposes an **explanation** or **hypothesis**, never challenge the evidence (the **effect**), challenge the conclusion (the **cause**).*

Let's look at a June 2007 questions that asks you to weaken an explanation:

Question: June 2007, Section 2, Question 5

Effect/Evidence:

The annual temperature has increased by 0.5 degrees over the last century.

Explanation/Conclusion/Cause

The buildup of minor gases caused the warming.

When weakening an *explanation*, never challenge the evidence: never doubt what is being explained. Challenge the explanation itself.

(A) The explanation is that the warming is due to the buildup of minor gases. It is **not** that the warming is due to the buildup of minor gases that were caused by **industrial pollution**. Only if you misunderstand the explanation as one that proposed that the gases were definitely human-produced would this answer choice be tempting. We have a new **Elimination Justification** for a **Weakening Question: Challenges a Distorted Conclusion/Explanation**.

(B) **CORRECT**. This answer choice establishes that the *warming*, the *effect* that was to be *explained*, mostly occurred after 1940, while the minor gas buildup, the proposed explanation, mainly occurred after 1940. This answer choice makes the proposed causal explanation very unlikely to be a complete explanation: the warming was well underway before the minor gas buildup (the observed effect). When the observed effect occurs before, or in the general absence of, the proposed causal explanation, this forms a very common weakener: the **Effect without Cause Weakener**.

(C) This answer choice suggests that an **Alternative Explanation**, solar radiation, might be responsible for the *warming*. Very often an **Alternative Explanation** is an effective *weakener*. But this answer choice fails to weaken, because the **Alternative Explanation** is claimed to be more prevalent "*in certain years than*" in others. Had this answer choice established that solar radiation, like the warming itself, had increased over the last century, this choice would be an effective weakener. Because the strength of radiation varies from year to year, the choice is does not present an effective **Alternative Explanation**. So we have our next **Elimination Justification** for a **Weakening Question**, a **Failed Alternative**.

(D) *Volcanic dust* might sound like a potential **Alternative Explanation**, but the answer choice establishes that such dust actually cools the planet by reflecting radiation “*back into space*.” This choice is another **Failed Alternative**.

(E) This answer choice establishes that the accumulation of minor gases has been greater this century than in previous centuries. Because this recent century was most likely warmer than the previous century, *this answer choice strengthens the explanation* by showing that the gases (*the causal explanation*) were more common when the warming (*the observed effect*) occurred in this century, and less common in the last century, before the warming. This answer choice contains two very common kind of strengthener: the **Cause with Effect** and the **No Cause, No Effect**. Because this answer choice *strengthens the explanation*, and the question asked us to *weaken the explanation*, this answer choice contains another common **Elimination Justification**: the **Opposite Impact**.

*Weakening and Strengthening Questions are **Active Questions**: the correct answer must **do something new** to the argument in the stimulus!*

*Weakening and Strengthening Questions often follow arguments that establish hypotheses or explanations, which are proposed **causes** for observed **effects**.
Never weaken, or strengthen, the observed effect; weaken, or strengthen, the proposed cause.*

Elimination Justifications for Weakening Questions

Challenging a Distorted Conclusion/Explanation
Failed Alternative
Opposite Impact

Common Ways to Weaken

Alternative Explanation
Effect without Cause

Common Ways to Strengthen

No Cause, No Effect
Cause with Effect

Question: June 2007, Section 2, Question 14

Evidence/Effect

After milk is heated to 50 degrees in a microwave, the milk contains half of its original lysozyme. When milk is heated to 50 degrees from a conventional heat source, it contains nearly all of its original lysozyme.

Conclusion/Explanation/Cause

Microwaves, not heat, destroy lysozyme

By presenting evidence about the results of heating milk with a conventional source, this argument *strengthens* its conclusion by showing that when no microwaves are present, little lysozyme is destroyed. This evidence is itself an example of the **No Cause, No Effect Strengthener**. You could also think of this evidence as weakening the *competing causal explanation*, the heat, by establishing that the heat does not always lead to the effect, the loss of lysozyme: this is the **Cause without Effect Weakener**.

To weaken this argument, the correct answer could posit some *alternative explanation* for the loss of lysozyme, something other than heat or microwaves. However, in a **Weakening Question**, when a *competing causal explanation* is addressed by the argument, the correct answer almost always supports that *competing causal explanation*. An answer choice that shows how **heat** could have been the actual reason for the loss of lysozyme will probably be correct.

(A) This seems to *strengthen* the argument because it establishes that *stronger* microwaves destroy *more* lysozyme. It does not support the “heat” explanation at all. This answer choice has an **Opposite Impact**.

(B) This answer choice is **Irrelevant to the Argument**. The argument is not at all about how destroyed enzymes can be replaced, but about how the enzymes were destroyed in the first place.

(C) This answer choice is arguably **Irrelevant to the Argument**. While it is surely is more relevant than in (B), it is not clear how *quickly* the conventional heat sources reach 50 degrees is relevant to the destruction of lysozyme. Perhaps you thought the speed with which the heat source reached its goal could make a compelling **Alternative Explanation**. Maybe the rapidity of the heating is the major factor destroying the lysozyme. However, if you ever find yourself wondering “*maybe*” about the impact of an answer choice, there is almost certainly a better one. Most importantly, (C) does not explain why the microwaved milk had less lysozyme than the conventional heated milk. **The best weakeners explain the evidence as they challenge the conclusion.**

(D) This answer choice is ***Irrelevant to the Argument***. The argument is not at all about the taste of the milk after heating.

(E) **CORRECT**. This answer choice establishes that in microwaved liquid there are “zones” that are much hotter than the overall temperature. So in that microwaved milk there were zones that were “much hotter” than 50 degrees. It could be within these zones that the lysozyme was destroyed. It therefore could have been heat that was actually responsible for the destruction of the lysozyme. This choice strongly supports an ***Alternative Explanation***, so it is correct.

Elimination Justifications for Weakening Questions

Challenging a Distorted Conclusion/Explanation

Failed Alternative

Irrelevant to the Argument

Opposite Impact

Common Ways to Weaken a Causal Explanation

Alternative Explanation

Cause without Effect

Effect without Cause

The best weakeners explain the evidence as they challenge the conclusion

Question: June 2007, Section 3, Question 15

Evidence/Effect:

The survey respondents who have been in treatment longer than 6 months are more likely to claim that treatment has “made things a lot better” than are respondents who have been in therapy less than 6 months

Conclusion/Explanation/Cause

Treatment lasting longer than 6 months is more effective than shorter-term treatment.

To reach its conclusion about how longer term treatment is more effective, the argument divides the survey respondents into 2 groups: those who have received treatment for less than 6 months and those who have received treatment for more than 6 months. *Whenever an study **compares 2 groups**, finds a **difference between those 2 groups**, and draws a **conclusion explaining the difference** between those groups, that **conclusion is not well-supported if there are other major, relevant differences between the two groups**.*

Let's say researchers are trying to study the effectiveness of a new diet, the *Nothing But Bacon Diet*. There are two groups, one trying the *Nothing But Bacon Diet* and the other trying a more traditional diet. If the *Nothing But Bacon Diet* group loses much more weight, this *strengthens* the conclusion that the *Nothing But Bacon Diet* is more effective than a traditional diet. However, if we then learn that the *Nothing But Bacon Diet* group also engaged in vigorous exercise everyday, but the traditional diet group did not, the conclusion would be severely weakened.

This rather simple example points to the *importance of comparing similar groups, of “comparing like to like.”* That is why researchers will use **control groups**: a control group, in the *Nothing But Bacon* study above, would be a group that ate a more traditional diet and exercised the same amount as the *Nothing But Bacon* group. In this way researchers can *isolate the causal factors* involved when they attempt to *explain any difference* between the groups they are studying.

In this question, the **survey does not compare like to like**. It compares two groups, the *more than 6 months* group and the *less than 6 months* group, and each may have very different psychological problems and different experiences with therapy. It would be extremely difficult to find two groups of individuals who have the same set of problems. Even if we had a set of people who all suffered from depression, for example, a study of them would be affected by their varying levels of depression and by the different events in these people's lives that might worsen or ameliorate depression.

Usually, an argument that rests on a comparison between two groups will be *most weakened* by an answer choice that establishes a major difference between the two

groups. You should consider, briefly, what those possible differences might be, but you do not want to spend too much time forming a prediction. Like a **Most Strongly Supported Question's** correct answer, a **Weakening Question's** correct answer can be unpredictable. As long as you know you are looking for difference between the compared groups, that is enough to proceed to the questions.

(A) This answer choice has an **Insignificant Impact** on the argument: 10 percent is not a large enough percentage to have a significant impact on an argument with such a broad conclusion.

(B) This does establish a difference between the compared groups. Keep this one for now.

(C) This also establishes a difference between the compared groups. Keep this one for now.

(D) This answer choice seems relevant, but it establishes a difference between those who are satisfied and those who are not, not between the *more than 6 months* and the *less than 6 months* groups. It has an **Unknown Impact** on the argument.

(E) It is unsurprising that “*many psychologists encourage*” patients to stay in treatment longer than 6 months, but psychologists’ arguably subjective and definitely self-interested opinions are *less relevant* to this discussion than is actual data about how the patients are doing. If the psychologists are correct, this answer choice strengthens the argument: it has an **Opposite Impact**.

So we are left with (B) and (C).

(B) seems to question the **representativeness** of this survey. This answer choice would weaken an argument about the magazine’s readers’ general level of satisfaction with psychological treatment, but **it fails to explain the data** that suggests those who have received therapy for more than 6 months would consider that therapy more effective. **The best weakeners explain the evidence as they challenge the conclusion: when the argument establishes significant statistical evidence, the correct answer will almost always explain that statistical evidence while it weakens the conclusion.**

(C) **CORRECT.** This answer choice establishes a major and relevant difference between the *less than 6 months* and the *more than 6 months* groups: those for whom therapy is effective are more likely to remain in therapy. So the *more than 6 month group* is *more likely* to contain members that are pleased with the therapy. This answer choice explains the difference in the survey results even as it weakens the conclusion. (C) is correct, not because (B) does not weaken at all, but because it weakens far more effectively than does (B). (C) does what the best weakeners do: explain the evidence!

(C) told us why the *more than 6 month* group would be more likely to claim that therapy “made thing a lot better”. It was *not because longer therapy produced better results, but **because better results make patients stay in therapy longer***.

The evidence that those in therapy longer reported better results than those in therapy for less time can be called a **correlation**:

*A **correlation** is a relationship between two factors that suggests, but does not prove, the existence of a causal relationship between those two factors.*

Let’s look at a question you have already seen for another example of a correlation.

Question: June 2007, Section 2, Question 21

The following question is a **Flaw Question**, and we have not yet discussed this question type. Given the current topic, however, you will probably find the answer easily (or at least more easily than when you first saw this question.)

Evidence/Effect

Minivans have a lower rate of accidents than do other cars

Conclusion/Explanation/Cause

To lower my chances of an accident, I should buy a minivan.

The conclusion implies that the author believes that a minivan would **cause** him to drive more safely.

(A) **CORRECT.** The argument confused the *correlation* between minivans and lower accident rates with a claim that minivan *cause* lower accident rates.

If this were a weakening question, there would probably be an answer choice that *explained the correlation but undermined the causal conclusion*. In the previous question, the argument concluded that *longer therapy caused better results*; the correct answer weakened the argument by establishing that ***better results caused people to stay in therapy longer***: the better results caused longer therapy! This is a special kind of **Alternative Explanation** is called the **Causal Reversal**, and it can be a very powerful technique to weaken an argument that confuses a correlation for causation. But the **Causal Reversal** is unlikely to be useful in this argument about minivans. An accident would occur, or not occur, once one already has purchased one's car. It makes very little sense to claim that a lower accident rate causes one to magically go back in time and purchase a minivan. When the **Causal Reversal** makes no sense, look for another variable, a different **Alternative Explanation**, to explain both the supposed cause and supposed effect. In the case of this argument, it is probably the **driver** that is the **missing variable**. People tend to buy minivans when they have children, and people tend to behave, and particularly drive, more responsibly once they have children. So a *safer driver* is more likely to choose a minivan and less likely to get into an accident. This kind of **Alternative Explanation** is described in the study of statistics as a "*lurking variable*." Since the new variable explains *the supposed cause and the supposed effect*, it can be called a *Higher Cause*; I like to call it an **Uber Cause**, in honor of Prussian philosopher Immanuel Kant, famous for his writings on causality, knowledge, morality, aesthetics, the Enlightenment, and for his love of cheese sandwiches.

The remaining answer choices will be discussed later when this question appears in the chapter on **Flawed Reasoning**.

If you wish to see another example of the **Causal Reversal**, take another look at a question you did in the Argument Structure homework:

Question: Prep Test 11, Section 4, Question 12.

The stimulus actually describes the **Causal Reversal**!

Now let's look at another **Weakening Question** that infers **causation** from a **correlation**.

Question: Preptest 26 (September 1998), Section 2, Question 12
(page 261 of *10 More Actual, Official LSAT Pretests*)

This is the eighth of the 100 hardest Logical Reasoning Questions ever! Good luck!

Evidence/Effect:

The higher the fat intake in a country, the higher the cancer rates in that country. The lower the fat intake, the lower the cancer rates.

Conclusion/Explanation/Cause:

To avoid cancer, one should avoid fat.

The argument never explicitly states a **causal connection** between fat and cancer, but the conclusion clearly indicates that the argument inferred a **causal connection** from a **correlation**.

Here the **Causal Reversal** is unlikely to be in the correct answer. It makes very little sense to claim that those afflicted with cancer are more likely to consume a high fat diet. Cancer usually occurs later in life, whereas eating habits form at a much younger age. When the **Causal Reversal** seems unreasonable, look for an **Uber Cause** as an effective weakener that **explains the evidence/correlation while undermining the causal conclusion**.

(A) The argument concludes that a diet higher in fat can cause cancer. This answer choice establishes that differences in fat intake are due to differences in traditional diets. The argument is not concerned with the causes of a high fat diet, but with the results of a high fat diet. The causes of a high fat diet are **Irrelevant to the Argument**.

(B) Greater "wealth" might allow fat-consuming countries to better treat cancer, but this answer choice does not establish how such "wealth" could be an Alternative Explanation for the higher cancer rates. "Wealth" is a **Failed Alternative**.

(C) This answer seems like a good weakener: by establishing that cancer is a prominent cause of death in countries where a low average fat intake, this choice seems like an example of the **Effect without Cause Weakener**. However, cancer is, unfortunately, a common ailment all over the world. It also can have many causes: genetic, environmental, and behavioral, for example. That cancer occurs where diets are low in fat does very little to disprove that fat can be a cause of cancer. The **Effect without Cause Weakener** does little, because the *effect* – cancer – is a complicated phenomenon; similarly, the **Cause without Effect Weakener** would probably be inadequate: an answer choice that claimed that many people who consume a high fat diet will not get cancer would probably be incorrect. Most smokers will not develop lung cancer, for example, but we know that smoking is a major cause of lung cancer. Ultimately, this answer choice does weaken, but it is a **Lesser Weakener** because it *fails to explain the correlation* the argument presented as *evidence*.

(D) **CORRECT**. This answer choice establishes a convincing **Uber Cause**: a society with environmental pollution. Such a society is said to have a higher fat intake and the pollution is a possible **Alternative Explanation** for the higher rates of cancer. This answer choice is better than (C) because it explains why there is a statistical relationship between fat intake and cancer rates while undermining the conclusion that fat intake causes cancer. ***This correct answer explains the evidence while undermining the conclusion.***

(E) This answer choice establishes the obvious truth that individuals do not always conform to what is generally true of their peers. This might be relevant to challenging an argument about a particular case of cancer, but it does little to explain the evidence or challenge the conclusion about fat as cause of cancer. Also, this answer choice is so obviously true that it is unlikely to have any impact on the argument. Effective weakeners are seldom so self-evidently true; they are seldom so boring! An effective weakener almost always is a statement that is not only relevant but also interesting.

This question shows the importance of reading every answer choice. Many students stop at (C) and get this question wrong. Like **Most Strongly Supported Questions**, **Weakening** and **Strengthen Questions** can have multiple “good” answer choices. You really must read all five and choose the best.

Elimination Justifications for Weakening Questions

Challenging a Distorted Conclusion/Explanation

Failed Alternative

Insignificant Weakener

Irrelevant to the Argument

Lesser Weakener

No Impact

Opposite Impact

*Particularly when relevant statistical evidence is presented,
the best weakeners **explain** the evidence as they **challenge** the conclusion*

*Common Ways to Weaken a **Correlation Implies Causation** Argument*

***Causal Reversal**
Uber Cause*

Now let's look at our first **Strengthening Question**. These as well can contain arguments that rely on correlations as evidence.

Question: Pretest 33 (December 2000), Section 3, Question 20

This is the ninth of the 100 hardest Logical Reasoning questions ever. Good luck!

Evidence/Effect:

Rats with higher concentrations of galinin in their brains were more likely to prefer fatty foods than were rats with lower concentrations.

Conclusion/Explanation/Cause:

Galinin causes rats to crave fatty foods.

This argument infers causation from a correlation. When an argument does so, first consider if the **Casual Reversal** is possible. Perhaps the higher concentration of galinin is a result, and not a cause, of fatty food consumption. The **Casual Reversal** is a reasonable **Alternative Explanation**, and good strengtheners **eliminate** the most compelling **Alternative Explanations**.

(A) This answer choice actually weakens the argument: it has an **Opposite Impact**. This is so because the choice establishes that the desire for fatty foods does not always result in a rat's choosing fatty foods. The experiment would be less compelling if the rats, in an unexpected bout of self-control, did not choose the foods they craved.

(B) This answer choice is **Irrelevant to the Argument**. At issue is whether the amount of galinin in a rat's brain, not the amount of fat.

(C) This answer choice has **No Impact** on the argument. If the choice stated that galinin were only found in fatty foods, and not in lean foods, the choice would weaken the argument: it would have an **Opposite Impact**.

(D) **CORRECT**. This choice establishes that the **Causal Reversal** is highly unlikely. If the higher concentrations of galinin existed before the rats were offered fatty foods, the galinin is more likely to be a cause, and not an effect, of a preference for such foods.

(E) This answer seems to have an **Opposite Impact**, as it suggests that the galinin is a result and not a cause of fat consumption. It actually has an **Unknown Impact**, however. It could be the case that the low rate of metabolizing fat produces galinin, which in turn produces the fat craving. These would be some unlucky rats: they

would be both really fat and really hungry! Any time, however, you need to preface an explanation for an answer choice with “it could be the case,” you are probably looking at an answer choice that has an **Unknown Impact**.

This question demonstrates that a correct answer to a **Strengthening Question** can, obviously enough, be the opposite of the correct answer to a **Weakening Question**. So while an answer choice that presents an *Alternative Explanation* for a certain effect or certain evidence makes for a great weakener, an answer choice that **eliminates**, or at least makes less likely, an **alternative Explanation** makes for a great strengthener.

One kind of **alternative explanation** is the **Alternative Cause**. In the question about *microwaving milk* (June 2007, Section II, Question 14), an **alternative cause** mentioned in the argument was exploited by a *good weakener*. If an **alternative cause** is mentioned in the argument, a *good strengthener* will **eliminate** it.

Elimination Justifications for Strengthening Questions

Strengthening a Distorted Conclusion/Explanation

Insignificant Strengthener

Irrelevant to the Argument

Lesser Strengthener

No Impact

Opposite Impact

Unknown Impact

Ways to Strengthen a Causal Explanation

Eliminate an Alternative Cause

Eliminate the Causal Reversal

Question: Preptest 17 (December 1995), Section 3, Question 12

Evidence/Effect:

The number of people who smoke cigarettes has declined by 3 percent.

Conclusion/Cause:

The antismoking campaign was responsible for the decrease in the number of smokers.

The argument mentions an **Alternative Cause** for the decrease in the number of people who smoke cigarettes: *the cigarette tax*. It's a small tax, and unlikely to have a substantial impact on the number of smokers, but the decrease in smokers is likewise small.

(A) This answer choice is **Irrelevant to the Argument**. The conclusion is about the number of smokers, not consumers of other tobacco products.

(B) This answer choice is also **Irrelevant to the Argument**. The conclusion is about the number of smokers, not about whether those that do smoke less.

(C) This answer choice is good news, but also **Irrelevant to the Argument**. The decrease in admissions for chronic respiratory ailments is suspiciously much larger than the decrease in the number of smokers.

(D) **CORRECT**. This choice **Eliminates an Alternative Explanation**, an **Alternative Cause**, by establishing that the small tax in no way affected the price of cigarettes. If a tax in no way affects the price, it is **unlikely** to have **any effect** on consumer behavior.

(E) This answer choice has an **Opposite Impact**: if smokers are poorer than nonsmokers, they are more likely to be affected by a tax, even a small one.

We have already discussed the **Cause without Effect** and **Effect without Cause** **Weakeners**. These, naturally, suggest two kinds of strengthener: **Cause with Effect**, and **No Cause, No Effect**.

Question: Preptest 7 (February 1993), Section 1, Question 15

Evidence/Effect:

*The deer population is 6 times what it was before the ban.
Deer are invading and damaging property and causing injury to motorists.
There were never any hunting injuries when hunting was allowed.*

Conclusion/Cause

The hunting ban was unnecessary and created a danger to public safety that would not otherwise exist.

The conclusion implies that author believes the hunting ban caused the explosion in the deer population. The conclusion is not simply a causal one; there is a claim that the hunting ban was *unnecessary*. This “*unnecessary*” claim is rather convincing, however, and causal claim is in need of far more support: by definition, a **causal claim is always difficult to establish**. This is why **causal arguments** occur so often in **Strengthening and Weakening Questions**: such arguments are very easy to strengthen or weaken, but very difficult to prove or disprove. The correct answer will **support the causal claim**, but you should not expect the correct answer to **prove the causal claim**.

(A) CORRECT. This answer choice is an example of the **No Cause, No Effect Strengtheners**: the surrounding counties, which had no hunting ban, have not experienced a growth in the deer population. This makes **Alternative Explanations**, such as a massive migration of deer, less likely.

(B) The correct answer to a **Strengthening Question** must provide additional information: this answer choice merely **Repeats Evidence**.

(C) This answer choice arguably has an **Opposite Impact**: by establishing that overpopulation leads to disease and malnutrition, this choice strongly suggests that any overpopulation, and therefore danger, created by the hunting ban will soon cease to exist. One could claim that the argument is about current, and not future, problems. In that case this answer choice would be **Irrelevant to the Argument**.

(D) This has an **Opposite Impact**: the food and salt provided could be an **Alternative Explanation** for the population growth.

(E) This answer choice also ***Repeats Evidence***. In fact, it is much weaker than the evidence itself. In the argument, the deer might be causing human deaths. In this answer choice, they are only fatal for shrubs!

Elimination Justifications for Strengthening Questions

Strengthening a Distorted Conclusion/Explanation

Insignificant Strengtheners

Irrelevant to the Argument

Lesser Strengtheners

No Impact

Opposite Impact

Repeats Evidence

Unknown Impact

Ways to Strengthen a Causal Explanation

Cause with Effect

Eliminate an Alternative Cause

Eliminate the Causal Reversal

No Cause, No Effect

Strengthening and Weakening Arguments that Are Not Causal Explanations

When **Strengthening** and **Weakening Questions** do not contain **causal arguments**, they contain arguments that make *unstated*, but *detectable*, leaps in logic. These **unstated leaps** are called **assumptions**.

Sometimes, the correct answer to a **Strengthening Question**, or **Weakening Question**, simply makes the argument a little better, or worse, respectively. But most of the time, strengthening or weakening an argument that is not a causal explanation involves supporting or attacking that argument's **assumptions**.

Many **Strengthening** and **Weakening Questions** contain arguments that make predictions about the future based on evidence about the past or present. Such arguments usually **assume** that all relevant factors unaddressed by the argument will remain constant.

Consider the following argument

Statistical analysis predicts sales of smartphones to increase 200 percent every year for next five years. If the statistical analysis is correct, we can expect prices of smartphones to increase dramatically because of this increased demand.

This argument draws a conclusion about *price* based on evidence about *demand*, but *price is proportional to demand* and **inversely proportional to supply** – and the LSAT question authors expect you to know this! This argument **assumes** that other relevant factors, such as the number of smartphone sellers – the **supply** – will remain constant, or at least will not increase radically.

*An effective **weakener** will establish that some other relevant factor has changed, making the prediction less likely. An effective **strengthenener** will establish that some other relevant factor will remain constant, making the prediction more likely.*

Question: June 2007, Section 2, Question 9

Counterevidence:

Videogame sales have been increasing lately

Evidence:

*Video games have historically been purchased by those 13 to 16 years of age.
The number of people in this age group is expected to decline over the next ten years.*

Conclusion:

Video game sales will soon decrease

The correct *weakener* will establish that some factor has changed, making the “historical” evidence less relevant. Also, the correct *weakener* (or *strengtheners*) will probably involve the **counterevidence**.

(A) By establishing that older people never purchase a video game, this answer choice has a strong **Opposite Impact**.

(B) The number of video game “rentals” is **Irrelevant to the Argument**. The conclusion is about “sales” of video games. It could be argued that rentals declining suggests a general interest in video games declining. Yet it could also be argued the rentals declining suggests a future increase in sales, because video game players will be less likely to rent a game instead of buying it.

(C) Other “entertainment options” could easily lead to fewer video game sales. This answer choice has an **Opposite Impact**.

(D) The “types” of video games “available” is **Irrelevant to the Argument**.

(E) **CORRECT**. This answer choice establishes that the historical circumstances that the argument **assumes** will continue are changing. Effective *weakeners* rarely challenge the evidence; if an answer choice seems like it is challenging the evidence, it is probably incorrect. This answer choice does, however, **attack an assumption**: in this case, the correct answer shows that the evidence, while true, is not powerful enough to prove the conclusion. It also addresses the counterevidence: the general increase in sales could be due to this new, older group of video game purchasers.

A good *weakener* **attacks an assumption**. A good *strengtheners* for this argument would have been one that stated that the recent increase in videogame sales – the **counterevidence** – is not due to increased interest in videogames from other age groups. If there is **counterevidence**, a good *strengtheners* almost always addresses

the **counterevidence**. Such a strengthener is one that **blocks a relevant objection**. All arguments **assume** that all relevant objections do not hold merit; so, by *blocking a relevant objection*, a good strengthener **supports an assumption** of an argument.

There is another way a strengthener can **support an assumption**; instead of *blocking an objection*, it can directly **connect the evidence** to the conclusion.

Question: June 2007, Section 3, Question 13

This is the tenth of the hardest Logical Reasoning questions ever. Good luck!

Evidence:

*Cognitive psychotherapy focuses on changing a patient's conscious beliefs.
Only conscious beliefs are under a patient's conscious control.*

Conclusion:

Cognitive psychotherapy is likely to be more effective than forms of therapy that focus on changing unconscious beliefs.

The evidence statements can be combined. Just as you would combine those statements that can be combined in a **Must Be True Question** to predict the correct answer, you should combine the evidence statements in a **Strengthening Question**, and in any other question type. **When it is possible to combine statements, you should do so!**

Combined Evidence:

Cognitive psychotherapy focuses on changing the only beliefs that are under the patient's conscious control.

Conclusion:

Cognitive psychotherapy is likely to be more effective than forms of therapy that focus on changing unconscious beliefs.

Now, look at the conclusion as you would an **Inference Question** answer choice: what would make the conclusion an incorrect answer choice? Both the evidence and the conclusion mention “cognitive psychotherapy”, so *cognitive psychotherapy* is not a problem – and will therefore probably not be in the correct answer. What is most striking is the **Unsupported Element** – actually an **Unsupported Comparison** - “**more effective than forms of therapy that focus on unconscious beliefs.**”

To predict the correct answer, connect what is **Unconnected in the Evidence** to what is **Unsupported in the Conclusion**:

Unconnected in Evidence to Unsupported in Conclusion prediction:

Focusing on changing what is under s patient's conscious control is more effective than focusing on changing unconscious beliefs.

This approach may seem time consuming, but making the prediction will allow you to save tremendous time in the answer choices. Also, you need not always make a prediction that is so precise: simply noting that “effective” is an **Unsupported Element** in the conclusion allows you to quickly eliminate three of the answer choices.

- (A) Does not contain the **Unsupported Element** “effective”.
- (B) Contains “effective.” Keep this answer choice.
- (C) Does not contain the **Unsupported Element** “effective”.
- (D) Contains “effective.” Keep this answer choice.
- (E) Does not contain the **Unsupported Element** “effective.”

(B) **CORRECT.** This is closer than (D) to the prediction above. This answer choice states that focusing on what is under patients conscious control is **more likely to be effective** than any therapy that does not have such a focus.

(D) This answer choice starts out promisingly. By establishing a necessary condition for an effective therapy that focuses on unconscious beliefs, this answer choice has the potential to prove that a therapy that focuses on unconscious beliefs cannot be effective. Yet, ultimately, this answer choice has **No Impact**. Here is a diagram of the answer choice:

*Effective Therapy that Focuses on Unconscious Beliefs →
Also Helps Change Conscious Beliefs*

If we knew that the therapy that focuses on unconscious beliefs *did not help at all to change conscious beliefs*, this answer choice, because of its *contrapositive*, would greatly strengthen the argument: it would prove that such a therapy **cannot** be effective. We do not know, however, if the unconscious focus also assists in changing conscious beliefs. *For a conditional statement to have an impact, we must know that its sufficient condition is true or that its necessary condition is false.*

Otherwise, such a statement has **No Impact**.

(D) merits such a long discussion because it is so similar to so many other tempting yet incorrect answer choices. (D) contains the **Unsupported Element** “effective”, but the necessary condition of this conditional statement *could be true*; therefore the answer choice unable to strengthen the argument. If you truly understand why (D) is incorrect, you will be able to eliminate some of the most tempting incorrect

answer choices for not only **Strengthening Questions**, but also for **Assumption Questions**, **Flaw Questions**, and **Principle Questions**!

When strengthening or weakening an argument that is not a causal explanation, the correct answer will usually support or attack the argument's assumptions.

*An argument that makes a prediction about a future change assumes that **all other relevant factors** will remain constant. An argument that makes a prediction that something will remain constant assumes that **all factors** will remain constant. In either case, to strengthen such an argument **support that assumption** with an answer choice that establishes all relevant factors have remained constant or will remain constant; to weaken such an argument **attack that assumption** with an answer choice that establishes a relevant factor has changed or will change.*

*There are two ways to support an argument's assumptions: **block an objection** or **connect the evidence**. Usually when there is an identifiable **Unsupported Element** in the argument's conclusion and/or **Unconnected Evidence** among the premises, the correct answer will connect the Unconnected Evidence to the Unsupported Element in the conclusion.*

*A conditional statement is relevant to an argument **in and only in** two cases: one knows that **sufficient condition is true** or one knows that **the necessary condition is false**. If the sufficient condition **could be false**, or the necessary condition **could be true**, the conditional statement has **No Impact** on the argument.*

Elimination Justifications for Strengthening/Weakening Questions

Strengthening/Weakening a Distorted Conclusion/Explanation

Failed Alternative

Insignificant Strengtheners/Weakener

Irrelevant to the Argument

Lesser Strengtheners/Weakener

No Impact

Opposite Impact

Repeats Evidence

Unknown Impact

Strengthening and Weakening Questions

The Green Blues

Preptest 7

Section 1: 1, 15, 23

Section 4: 1, 4

Preptest 9

Section 2: 4, 7, 9, 10, 12

Section 4: 2, 17, 22

Preptest 10

Section 1: 16
Section 4: 1, 2, 9

Preptest 11

Section 2: 1, 11, 19, 21
Section 4: 5, 11, 18, 21

Preptest 12

Section 1: 11, 15, 16, 20
Section 4: 4, 11, 21

Preptest 13

Section 2: 1, 5, 13, 21
Section 4: 12, 17, 19, 23

Preptest 14

Section 2: 6, 7, 12, 15, 21
Section 4: 4, 25

Preptest 15

Section 2: 3, 7
Section 3: 8, 10, 23

Preptest 16

Section 2: 2, 5, 16, 18, 21
Section 3: 1, 6, 13, 18

Preptest 18

Section 2: 6, 16, 21
Section 4: 5, 7

The Ancient Ones

Preptest 1

Section 3: 5, 9, 15, 23
Section 4: 12, 15, 23

Preptest 2

Section 2: 7, 10, 14, 18
Section 4: 5, 7, 14, 16, 25

Preptest 3

Section 2: 9, 14, 16, 17, 23
Section 4: 2, 5, 11

Preptest 4

Section 1: 1, 3, 4, 9
Section 4: 1, 6, 8

Preptest 5

Section 1: 2, 5, 8, 17
Section 3: 2, 8, 24

Preptest 6

Section 2: 19, 21
Section 3: 2, 4, 17

Preptest 8

Section 1: 7, 10, 11, 13
Section 4: 11, 14, 24, 25

Preptest 17

Section 2: 7, 8, 13
Section 3: 6, 12, 17, 18

Chapter Four: Inference Questions – Part Two

Quantities, Could be False, Contradiction, and Disagreement Questions

We have already discussed how to combine conditional statements.

Statements:

All As are Bs: $A \rightarrow B$

All Bs are Cs: $B \rightarrow C$

Combined Statements:

All As are Cs: $A \rightarrow C$

Other kinds of statements can also be combined with **conditional statements** in certain instances.

Some As are Bs = at least one A is a B.

It is important to note that a **some** statement is deliberately imprecise. It does not imply “more than one” or “not all.” A **some** statement allows for many possibilities, from **one** to **all**.

Perhaps scientists have discovered a new species of bacteria, *Species X*. Researchers witness *Species X* consuming a protein that no other bacteria are known to consume, *Protein Y*. It would be proper at the time to conclude

Some members of Species X consume Protein Y.

It might be the case that all members of *Species X* consume *Protein Y*, but it would be premature to draw or reject that conclusion before further observations can be conducted.

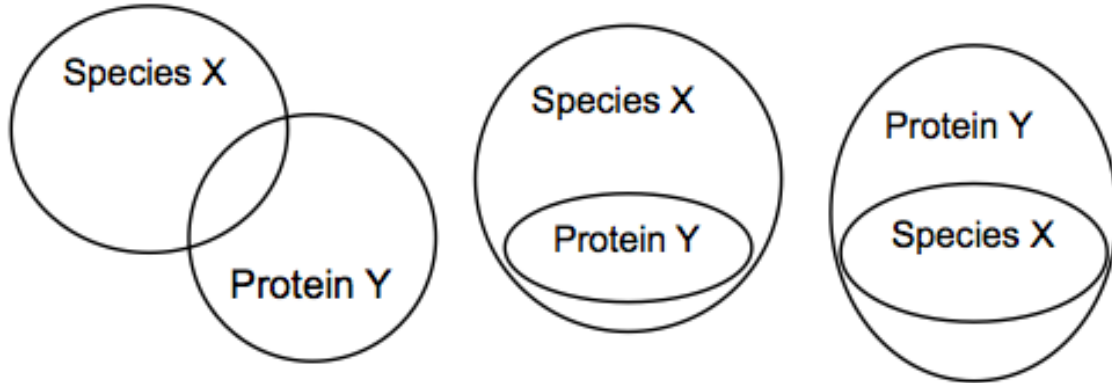
*“All member of Species X consume Protein Y” ($\text{Species X} \rightarrow \text{Consume Protein Y}$)
Could be True, but is Not Necessarily True*

It also might be the case that *Species X* is the only species that consumes *Protein Y*, but it would be premature to draw or reject that conclusion before further observations can be conducted.

“Only members of Species X consume Protein Y” ($\text{Consume Protein Y} \rightarrow \text{Species X}$)

Could be True, but is Not Necessarily True

All of the following are possible, not necessary, representations of the claim “Some members of Species X consume Protein Y.”



Because *all* of the above Venn diagrams are *possible*, are *none* are *necessarily true*, one Venn diagram cannot be used to **prove** claims involving **Some** statements. They cannot show that a claim **must be true**. They can, however, show that claims **could be false**.

Let's look at two sets of facts.

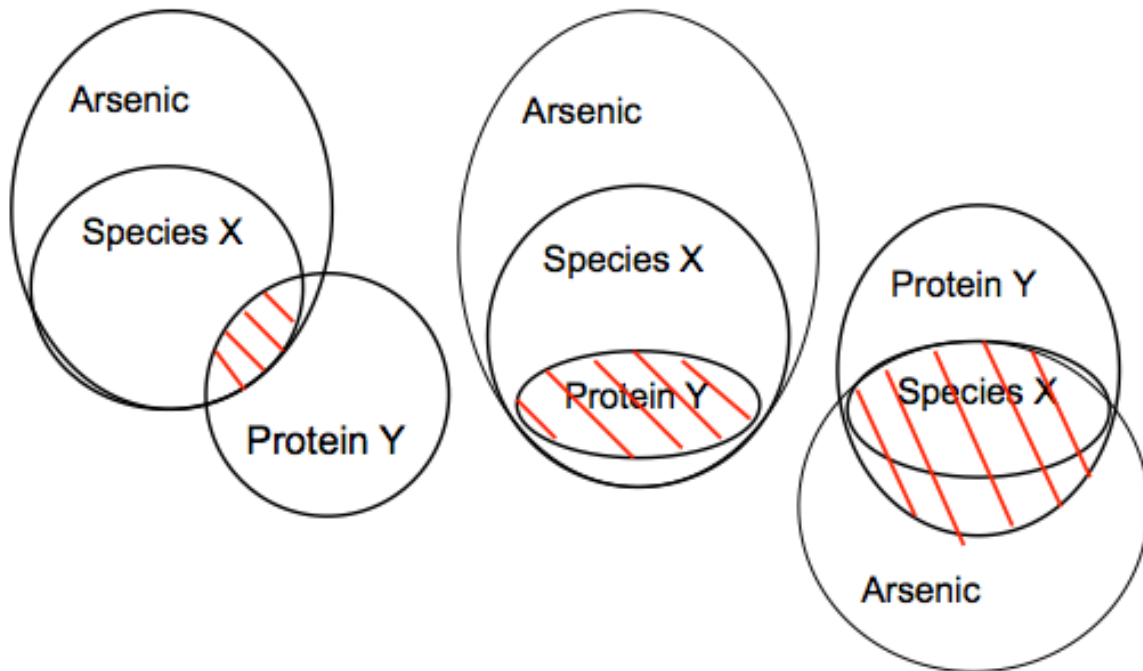
First Set:

Some members of Species X consume Protein Y
All members of Species X produce arsenic.

Second Set:

Some members of Species X consume Protein Y
Only members of Species X produce arsenic.

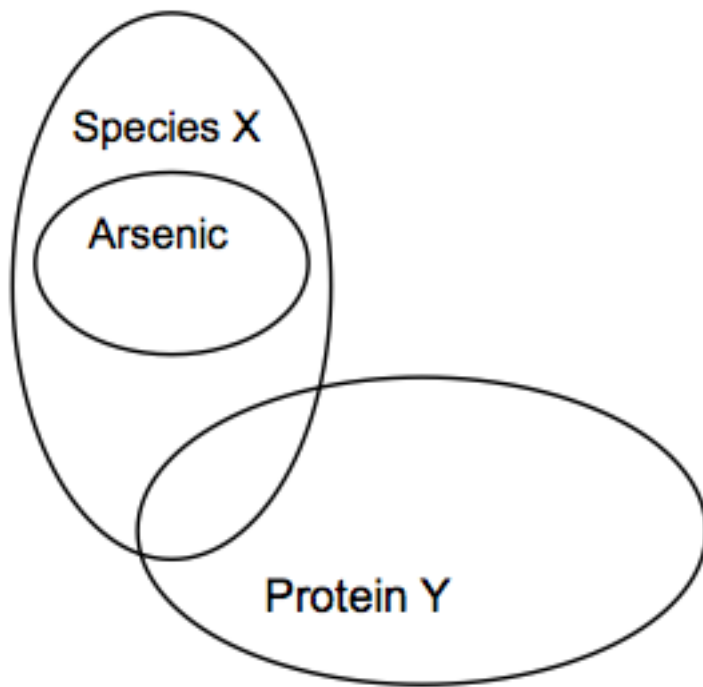
Potential representations of the First Set:



In all of these representations, there is an overlap, represented by the red lines, of *Consume Protein Y* and *Produce Arsenic*. While many different representations could be drawn, they would all contain an overlap between *Consume Protein Y* and *Produce Arsenic*. It would be reasonable to conclude that

Some organisms that Consume Protein Y Produce Arsenic .

The Second Set of facts does not lead to the same conclusion. In fact, all we need is one **counterexample** to show that “*Some specimens that Consume Protein Y Produce Arsenic*” could be false.



This shows that there *might* be no overlap between *Produce Arsenic* and *Consume Protein Y*. There are, of course, many other potential representations of the Second Set that could be true. We cannot conclude, as the Venn diagram suggests we can, that *No bacteria that Produces Arsenic Consumes Protein Y*. But this one representation is enough to show that that claim derived from the First Set, *Some organisms that Consume Protein Y Produce Arsenic*, **could be false**.

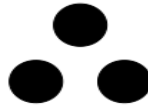
You do not have the time to draw out Venn diagrams to show what **could be false**, and you certainly *do not have time to draw out multiple Venn diagrams to show what must be true*. What we need is a quick and reliable method to determine which statements lead to proper deductions and which do not. Diagramming the different fact sets will reveal this method.

Before we diagram the fact sets, we should note that a **Some** statement is completely reversible.

Some organisms that Consume Protein Y Produce Arsenic
is equal to
Some organisms that Produce Arsenic Consume Protein Y

This is because a **Some** statement implies that two quantities overlap at one or more points. If “*some As are Bs*”, then “*some Bs are As*.” For this reason, when diagramming, place “**SOME**” between the two elements of the **Some** statement.

Also, in the diagrams below, and in all subsequent diagrams, the three dots symbol,



which means “*therefore*”, precedes the conclusion.

First Set:

*Some members of Species X
consume Protein Y.
All members of Species X produce
arsenic.*

Diagram:

*Species X SOME Protein Y
Species X → Produce Arsenic*

∴ Protein Y SOME Produce Arsenic

Second Set:

*Some members of Species X
consume Protein Y.
Only members of Species X produce
arsenic.*

Diagram:

*Species X SOME Protein Y
Produce Arsenic → Species X*

No Conclusion Can be Drawn

What is the difference between the two sets of facts? They each have the same ***Some*** statement. They each have a conditional statement that contains the element “Species X”, which was also found in the ***Some*** statement. But in the first fact set, “Species X” is a ***sufficient condition***; in the second fact set, “Species X” is a ***necessary condition***.

Diagram:

*Species X SOME Protein Y
Species X → Produce Arsenic*

∴ Protein Y SOME Produce Arsenic

Diagram:

*Species X SOME Protein Y
Produce Arsenic → Species X*

No Conclusion Can be Drawn

To draw a conclusion connecting a **Some** statement to a **conditional statement**, an element from the **Some** statement must be the **sufficient condition** of the **conditional statement**.

Now let's look at our first question that tests our ability to combine **Some** statements. This question is also the first time we have seen a **Must Be True (EXCEPT) Question**. All of the incorrect answer choices are claims that can be deduced from the stimulus: that **must be true**, according to the stimulus.

Question: Preptest 13 (December 1994), Section 4, Question 14
(page 209 of 10 Actual, Official LSAT Pretests)

The first sentence can be diagrammed:

World's Most Beautiful SOME Persian

The second sentence can be diagrammed as two **conditional statements**:

Persian Cats → Pompous
Pompous → Irritating

We know how to combine two **conditional statements**:

Persian → Pompous → Irritating

Because "*Persian*" is an element of the **Some** statement as well as the **sufficient condition** of the **conditional chain**, we can connect the **Some** statement to the chain:

World's Most Beautiful SOME Persian → Pompous → Irritating

This connection implies that "*some of the world's most beautiful cats are pompous and irritating.*"

(A) This **Some** statement must be true according to the connection of the **Some** statement with the conditional statements.

(B) This **Some** statement must be true according to the connection of the **Some** statement with the conditional statements. Also, this is the reversal of answer choice (A), *all Some statements can be reversed*.

(C) This **conditional statement** can be diagrammed: *Irritating → Persian*. This is the **contrapositive** of the combined **conditional statements**, and therefore it **must be true**.

(D) This **Some** statement must be true according to the connection of the **Some** statement with the conditional statements.

(E) **CORRECT.** This answer choice could be true, and in fact seems likely to be true, but most importantly, it **could be false** and is therefore **correct**. There is no such thing as a contrapositive of a **Some** statement: a Some statement can be reversed, but no rewording that changes a negative to a positive, or vice versa, is allowed. For this reason we can make no conclusion about what *some beautiful cats are not*; we can only conclude that some of those beautiful cats **are** *pompous and irritating*.

Some As are Bs = at least one A is a B
Some As are Bs = Some Bs are As

You cannot change a positive to negative, or vice versa in a Some statement. There are no contrapositives of Some statements:

Some As are Bs neither implies nor disproves Some As are not Bs
Some As are Bs neither implies nor disproves Some Bs are not As
Some As are Bs neither implies nor disproves Some things that are not B are not A.

To connect a Some statement to another statement, an element of the Some statement must be the Sufficient Condition of a conditional statement. No other connections are allowed.

Some As are Bs
 $B \rightarrow C$

Some As are Cs

Some As are Bs
 $C \rightarrow B$

No Conclusion Can be Drawn

Another quantity word that must be discussed is **most**.

Most = more than 50 percent

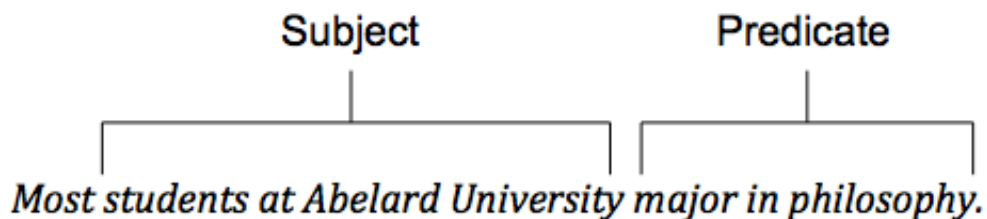
Most students at Abelard University major in philosophy.

This claim establishes that a **majority**, *more than 50 percent*, of the students at Abelard University major in philosophy. If there are 100 students at Abelard University, at least 51 major in philosophy. But a **Most** statement does not imply anything about actual numbers. There could be three, or thirty thousand, or more, students at Abelard University.

A **Most** statement is a statement about a percentage: it means more than 50 percent. A **Some** statement is, despite its inexactitude, a statement about a number: it means 1 or more. **Statements about a number can be reversed**: if there are **at least** 50 students at Abelard University who are philosophy majors, then there are **at least** 50 philosophy majors who are students at Abelard University; if there are **at most** 50 students at Abelard University who are philosophy majors, then there are **at most** 50 philosophy majors who are students at Abelard University; if there are **exactly** 50 students at Abelard University who are philosophy majors, then there are **exactly** 50 philosophy majors at Abelard University.

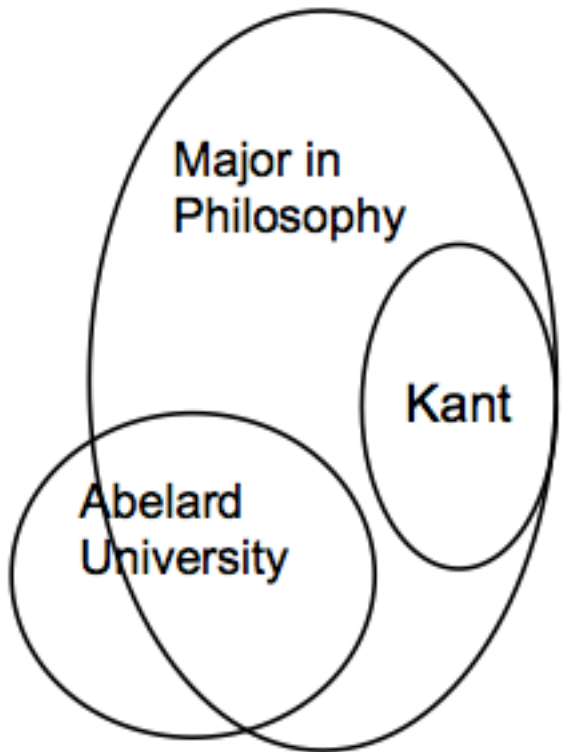
Statements about a percentage, however, are not reversible: if 60 percent of the students at Abelard University are philosophy majors, it is not necessarily, and probably not, the case that 60 percent of philosophy majors go to Abelard University.

Because a **Most** statement, like any percentage statement, is not reversible, we must speak of the two parts of a **Most** statement: the subject and the predicate. We can use these grammatical terms because a **Most** statement, like all statements in logic, is a sentence.



Like a **Some** statement, a **Most** statement can only connect to a **conditional statement** through a **sufficient condition**. If an element of a **Most** statement is a necessary condition in a conditional statement, no conclusion can be drawn:

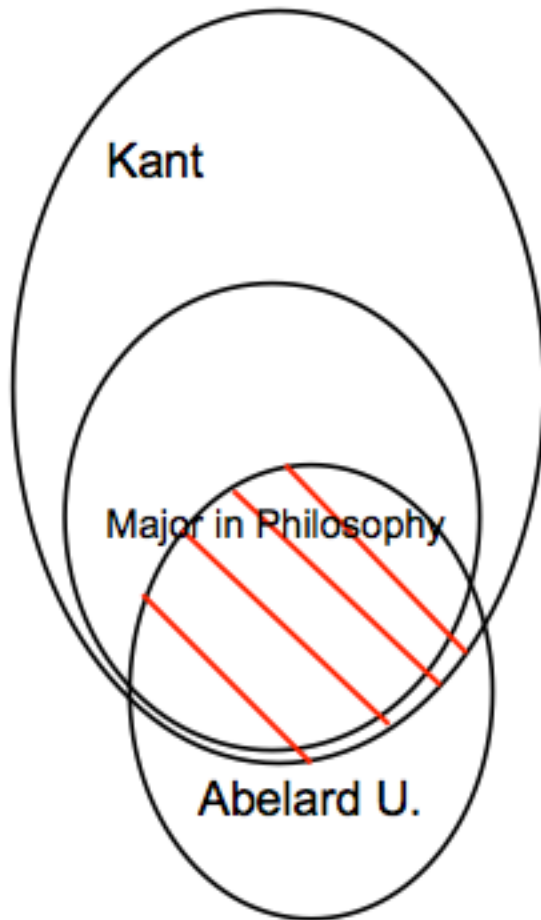
*Most students at Abelard University major in philosophy.
All students of Kant major in philosophy.*



Like all Venn diagrams, this Venn diagram is *not a necessarily true* representation of the facts above, but it shows that there **could be no connection** between “Abelard University” and “Students of Kant”.

When an element of a **Most** statement is a **sufficient condition** in a **conditional statement**, a conclusion can be drawn. But the precise wording of that conclusion depends on whether the **subject** or the **predicate** of the **Most** statement is that **sufficient condition**.

*Most students at Abelard University major in philosophy.
All those who major in philosophy study Kant.*

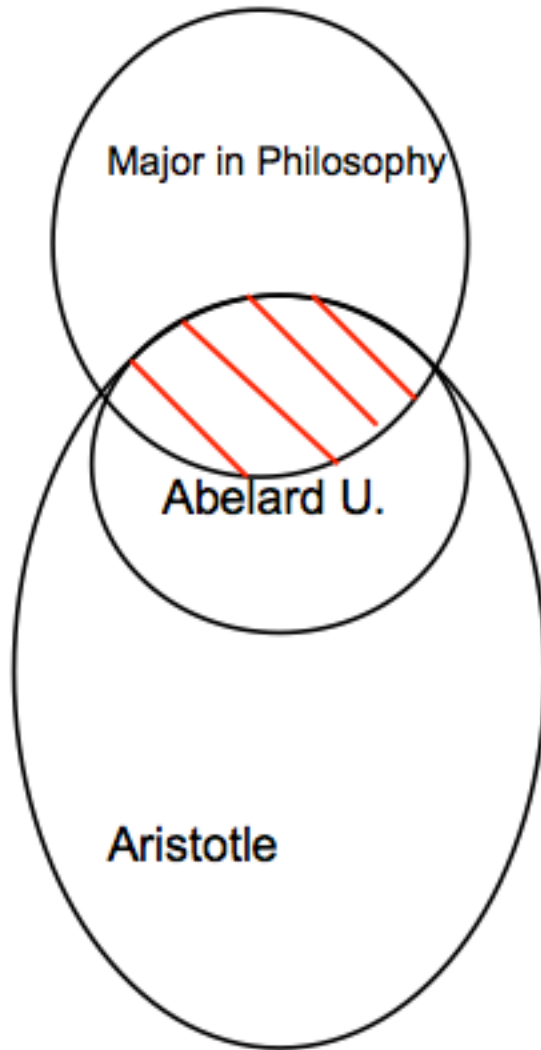


“Major in Philosophy” is the **predicate** of the **Most** statement, and is the *sufficient condition of a conditional statement*. No matter how you draw a Venn diagram, you will end up with a **Most** statement as a conclusion. In this case you can conclude

Most students at Abelard University study Kant.

When the **subject** of a **Most** statement is the sufficient condition of a conditional statement, only a **Some** statement can be concluded:

Most students at Abelard University major in philosophy.
All students at Abelard University study Aristotle.



The claims do not establish how large the “*Aristotle*” category is and how large the “*Major in Philosophy*” category is. No matter how you draw this Venn diagram, there will always be **some** overlap between “*Major in Philosophy*” and “*Aristotle*”, but the size of that overlap can vary wildly. Since there is always an overlap, but that overlap is imprecise, *only a **Some** statement can be concluded when the **subject** of a **Most** statement is a **sufficient condition**:*

Some who study Aristotle major in philosophy.

Most As are Bs = More Than Half of As are Bs = A Majority of As are Bs

To connect a **Most** statement to a **conditional statement**, an element of the **Most** statement must be a **sufficient condition**. No conclusion can be drawn when an element of a **Most** statement is the **necessary condition** of a conditional statement. The resulting conclusion depends on **which element of the Most statement** is a sufficient condition.

When the **subject of the Most statement is a sufficient condition**, the resulting conclusion is a **Some** statement.

Most As are Bs

$A \rightarrow C$

Some Bs are Cs

When the **predicate of the Most statement is a sufficient condition**, the resulting conclusion is a **Most** statement.

Most As are Bs

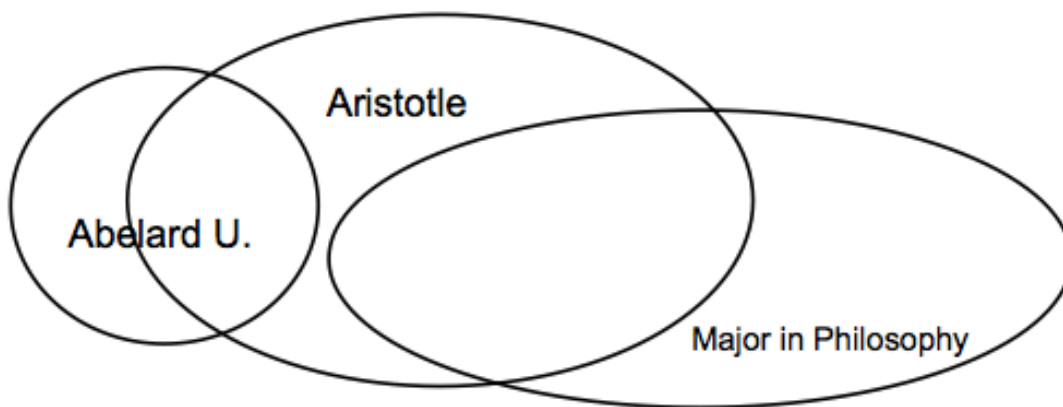
$B \rightarrow C$

Most As are Cs

There is, however, an interesting way in which the subjects of a two **Most** statements can lead to a conclusion.

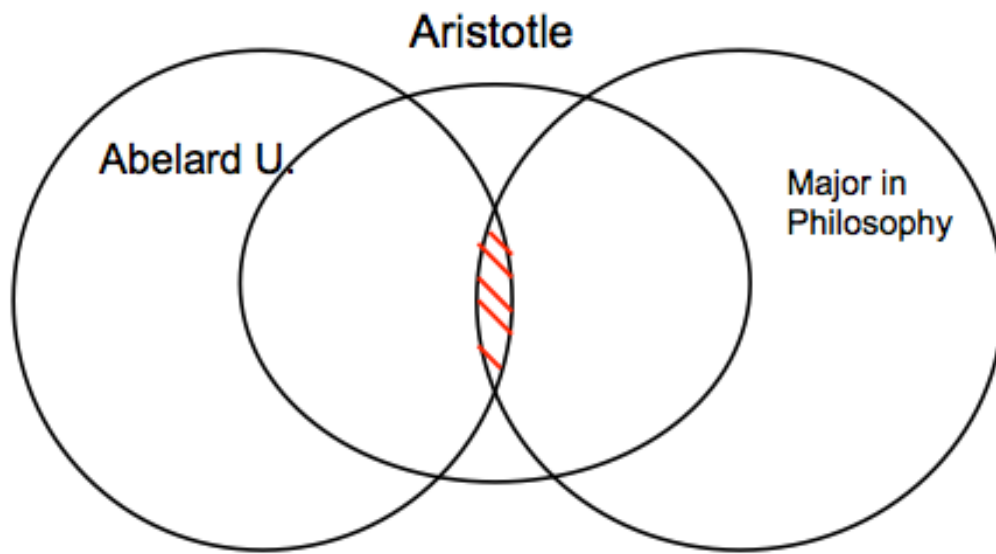
*Most students at Abelard University study Aristotle.
Most students who study Aristotle major in philosophy.*

These two statements do not necessarily lead to any conclusion about “*Abelard University*” and “*Major in Philosophy*”. The following representation is possible, showing there is no necessary connection between those two elements.



However, if the two **subjects** of two **Most** statements are the same, a connection is implied:

*Most students of Aristotle attend Abelard University.
Most students of Aristotle major in philosophy.*



No matter how you represent the two claims, there will be **some** overlap between "Abelard University" and "Major in Philosophy." The following can be concluded:

Some students at Abelard University major in Philosophy.

Question: Preptest 33 (December 2000), Section 3, Question 8

**This is the eleventh of the 100 most difficult Logical Reasoning questions ever.
Good luck!**

This stimulus starts out with the word “**most**”, and the remaining statements contain other kinds of quantity words.

First statement:

Most stock market investors do no research of their own.

Second statement:

Some who do no research of their own rely on their broker’s advice and other make decisions on hunches.

This **some** statement contains the **predicate** of the **most**, but a **some** and a **most** statement cannot combine, because a **some** statement can only connect with a **sufficient condition** of a conditional statement.

Third statement:

Other people do some research of their own but just as often rely on hunches.

These “*other people*” are stock market investors, and stock market investors are the **subject** of the **most** statement above; but because this claim is imprecise, we must represent it as a **some** statement. “**Some** stock market investors to some research but just as often rely on their hunches.” A **some** and a **most** statement cannot combine.

Fourth statement:

Only a few (stock market investors) do their own research.

The “**only**” in this sentence modifies “**a few**”, and so this **only** does not imply a conditional statement. “**A few**” means “*a small number*.” It is more precise than a **some** statement, but it functions like a **some** statement in that it can only connect with the **sufficient condition** of a conditional statement.

Fifth statement:

A majority of investors in the stock market make a profit.

“Majority” means **“most.”** So the subject of this **most** statement is the same of the subject of the first **most** statement.

First Statement: **Most** stock market investors do no research of their own.

Fifth Statement: **Most** stock market investors make a profit.

The subjects of these two **most** statements are the same, so they can combine to form a **some** statement.

Some stock market investors who do no research of their own make a profit.

Or

Some stock market investors who do make a profit do no research of their own.

Or, diagrammed:

Profit SOME ~~Own-Research~~

All three of the above claims are identical.

(A) **CORRECT.** This answer choice is almost identical to the second prediction above. It might take time to do the analysis required to make this prediction, but you ultimately save time doing so, because that analysis gives you the confidence to choose (A) immediately.

(B) – (E). All of these answer choices contain **some** or **most** statements, but none of them can be concluded from the stimulus.

When reading a stimulus on a timed exam, you should not feel compelled to diagram every **quantity** – every **some** or **most** – statement. *If you understand that there are only two kinds of legitimate quantity connections – **connecting an element of a some or most statement to a sufficient condition of a conditional statement** or **connecting the subjects of two most statements** – you will be better focused on diagramming the statements likely to form a connection, which are the statements likely to lead to the correct answer!*

Advanced Tip: When **few** is not preceded by the indefinite article, **few** means **“a minority,”** which means **“some, but most....not.”**

Few philosophy majors study Sartre

=

*A **minority** of philosophy majors studies Sartre*

=

***Some** philosophy majors study Sartre, but **most** philosophy majors do **not**.*

Quantity Review

Some, and other **number statements** such as **a few**, **many**, and **exactly** (such as **exactly 3**), can be reversed and restated.

Some As are Bs = Some Bs are As
Exactly 3 As are Bs = Exactly 3 Bs are As
A Few As are Bs = A Few Bs are As
Many As are Bs = Many Bs are As

The elements of such statements can only connect to a **sufficient** condition of a conditional statement.

Fill in the following blanks:

1.

Some As are Bs
+
 $B \rightarrow C$
=

2.

Some As are Bs
+
 $C \rightarrow B$
=

3.

A Few As are Bs
+
 $A \rightarrow C$
=

4.

A Few As are Bs
+
 $B \rightarrow C$
=

5.

A Few As are Bs

$$\begin{array}{c} + \\ C \rightarrow B \\ = \end{array}$$

6.

$$\begin{array}{c} \text{Many As are Bs} \\ + \\ A \rightarrow C \\ = \end{array}$$

7.

$$\begin{array}{c} \text{Many As are Bs} \\ + \\ B \rightarrow C \\ = \end{array}$$

8.

$$\begin{array}{c} \text{Many As are Bs} \\ + \\ C \rightarrow B \\ = \end{array}$$

9.

$$\begin{array}{c} \text{Exactly 3 As are Bs} \\ + \\ B \rightarrow C \\ = \end{array}$$

Answers:

1. Some As are Cs
2. No conclusion
3. At least a few Bs are Cs
4. At least a few As are Cs
5. No conclusion
6. Many Bs are Cs
7. Many As are Cs
8. No Conclusion
9. At least 3 As are Bs

Order matters in **most** statements and other *percentage statements*, such as “***few***,” a “***minority***” or ***exactly*** (as in *exactly 30 percent*).

When the ***predicate*** of a percentage statement is the ***sufficient*** condition of a conditional statement, the percentage in the resulting combined statement does not diminish. When the ***subject*** of a percentage statement is a ***sufficient*** condition of a conditional statement, the resulting combined statement is only a ***some*** statement. As in ***some*** statements, when an element of a *percentage statement* is a ***necessary*** condition of a conditional statement, no conclusion is possible.

When the ***subjects*** of two ***most*** statements are identical, a ***some*** conclusion can be drawn.

Fill in the following blanks:

1.

$$\begin{array}{c} \textit{Most As are Bs} \\ + \\ B \rightarrow C \\ = \\ \hline \end{array}$$

2.

$$\begin{array}{c} \textit{Most As are Bs} \\ + \\ A \rightarrow C \\ = \\ \hline \end{array}$$

3.

$$\begin{array}{c} \textit{Most As are Bs} \\ + \\ C \rightarrow A \\ = \\ \hline \end{array}$$

4.

$$\begin{array}{c} \textit{Most As are Bs} \\ + \\ \textit{Some As are Cs.} \\ = \\ \hline \end{array}$$

5.

Most As are Bs
+
Most Bs are Cs
=

6.

Most As are Bs
+
Most As are Cs
=

7.

Few As are Bs
+
 $B \rightarrow C$
=

8.

Exactly 30 percent of As are Bs
+
 $B \rightarrow C$
=

9. This one is tough!

A minority of As are Bs
+
A minority of As are Cs.
=

1. Most As are Cs
2. Some As are Cs.
3. No conclusion
4. No conclusion
5. No conclusion
6. Some Bs are Cs.
7. Some As are Cs.
8. At least 30 percent of As are Cs.

9. Some things are neither Bs nor Cs.

Explanation for 9:

A minority of As are Bs = Most As are not Bs.

A minority of As are Cs = Most As are not Cs.

Because the subjects of two most statements are the same, we can reach the conclusion

Some things that are not B are not C.

This statement can be reworded as

There are some things that are neither B nor C.

Logical Equals and Opposites

There are certain logical equals and logical opposites that must be memorized. Some of these terms, like ***Must Be True***, you already know.

Perhaps without realizing it, you have been using these logical equals and opposites when doing Logic Games. On a ***Must Be True Question***, for example, you have learned that the incorrect answers are ***not necessarily true***, which is equal to ***could be false***. To evaluate an answer choice on a ***Must Be True Question***, it is actually counterproductive to test if an answer choice ***could be true***, because ***could be true*** is neither equivalent to nor the opposite of ***must be true***. Therefore, if you prove an answer choice ***could be true***, you can neither choose that answer choice nor eliminate that answer choice.

Must Be True	is the logical opposite of	Not Necessarily True
---------------------	----------------------------	-----------------------------

is equal to

is equal to

Cannot be False	is the logical opposite of	Could be False
------------------------	----------------------------	-----------------------

Not Necessarily False	is the logical opposite of	Must Be False
------------------------------	----------------------------	----------------------

is equal to

is equal to

Could be True	is the logical opposite of	Cannot be True
----------------------	----------------------------	-----------------------

Other logical equals and opposites must also be memorized.

<i>Positives</i>		<i>Negatives</i>
All	is the logical opposite of	Not All
is equal to		is equal to
Every	is the logical opposite of	Some...not
Most	is the logical opposite of	Not Most
is equal to		is equal to
More than half	is the logical opposite of	Half or less
Some	is the logical opposite of	None
is equal to		is equal to
One or More	is the logical opposite of	Zero

A word on the positive side, such as ***all***, implies that every statement ***below*** it on the positive side is true. If "***all Spartans are Greeks***" ***must be true***, then it is true that "***most Spartans are Greeks***" and it is true that "***some Spartans are Greeks***." ***All*** is the logical opposite of ***not all***, and every statement ***including not all*** and ***below not all*** on the table, is false. If "***all Spartans are Greeks***" ***must be true***, the following statements ***must be false***: "***some Spartans are not Greeks***," "***most Spartans are not Greeks***," and "***no Spartans are Greeks***."

A word on the negative side, such as ***none***, implies that every statement ***above*** it on the negative side is true. If "***no Roman is Greek***," ***must be true***, then it is true that "***most Romans are not Greek***" and it is true that "***some Romans are not Greek***." ***None*** is also the opposite of ***some***; ***none*** implies that ***some***, and every statement ***ABOVE some*** on the table, is false. If "***no Roman is Greek***," ***must be true***, the

following statements **Must Be False**: “**some** Romans are Greeks,” “**most** Romans are Greeks,” and “**all** Romans are Greeks.”

Note that words that introduce **sufficient** and **necessary** conditions, such as **all** and **none**, are the **logical opposites** of much weaker statements, such as **some...not** and **some**, respectively.

Understanding logical opposites is extremely important both for the next two question types and for **Necessary Assumption Questions**.

Memorize the **logical equivalents** and **logical opposites** in the table above!

A **logical opposite** of a statement **contradicts** that statement. The logical opposite of “**all** Spartans are brave” is “**some** Spartans are **not** brave.” There are, of course, many other ways to **contradict** the original statement: “**most** Spartans are **not** brave” and “**no** Spartan is brave” obviously contradict “**all** Spartans are brave.” These contradictions are not what we call **logical opposites**, however. The **logical opposite** is the **minimum contradiction**, or, the *most weakly worded contradiction possible*.

Another way to think of a **logical opposite** of a statement is to pose the following question.

If Statement X is false, what must be true?

What “*must be true*” is the **logical opposite** of Statement X. For example, if we know that “A good economy requires a low tax rate” is false, what do we know is true? Let’s diagram the original statement.

Good Economy → Low Tax Rate

Even if we know that this statement is false, it would be a mistake to conclude the following:

Good Economy → ~~Low Tax Rate~~

This statement means, “*in order to have a good economy, one **cannot** have a low tax rate.*” This clearly **contradicts** the original statement, but it is not the **minimum contradiction**. The **minimum contradiction**, the **logical opposite**, is that “A good economy **does not require** a low tax rate.”

Other ways to express this statement are

*A good economy **can exist without** a low tax rate.*

*A good economy **need not have** a low tax rate.
A good economy is **compatible** with a tax rate that is **not** low.
Some good economies do **not** have low tax rates.*

The last example sounds different than the others. It establishes that there **are** existing good economies without low tax rates, whereas the first three establish merely that it is **possible** for an economy to be good without a low tax rate. This distinction, however has never been important on any question that has appeared on the LSAT.

In future problems, we shall symbolize the logical opposite of a conditional statement is the following way.

Conditional Statement: *Good Economy* \rightarrow *Low Tax Rate*

Logical Opposite: *Good Economy* **and** ~~*Low Tax Rate*~~

“And” establishes that “*good economy*” and “~~*low tax rate*~~” can coexist, but that neither implies the other.

It is important to note that a conditional statement has a very specific logical opposite. The following statements **do not contradict** the statement *Good Economy* \rightarrow *Low Tax Rate*

~~*Low Tax Rate and Good Economy*~~
~~*Good Economy and Low Tax Rate*~~
~~*Good Economy* \rightarrow *Low Tax Rate*~~
Good Economy \rightarrow *Low Tax Rate*
~~*Good Economy* \rightarrow *Low Tax Rate*~~

The last two seem incompatible with *Good Economy* \rightarrow *Low Tax Rate*, but they can coexist with it and have interesting implications if they do.

If both *Good Economy* \rightarrow *Low Tax Rate* **and** *Good Economy* \rightarrow ~~*Low Tax Rate*~~ are true, then the condition *Good Economy* itself results in a contradiction: *Low Tax Rate* and ~~*Low Tax Rate*~~ cannot both be true. If a **sufficient condition results in a contradiction**, that sufficient condition itself can never be true; in this case, therefore, a *good economy* is **impossible**!

If both *Good Economy* \rightarrow *Low Tax Rate* **and** ~~*Good Economy* \rightarrow *Low Tax Rate*~~ are true, then, no matter what kind of economy exists, a *low tax rate* always exists. To express this statement, one could state the following: *whether or not the economy is good, there will be a low tax rate*. If a **sufficient condition** has a **necessary condition** and the **negation** of that **sufficient condition** has the same **necessary condition**, the **sufficient condition is irrelevant** and the **necessary condition is always true**; in this case, the tax rate is always low!

These strange conditional relationships are extremely rare on that LSAT – though on *Preptest 34, Logic Game 4*, there was one rule that contained a sufficient condition that resulted in a contradiction! I discuss them here to make emphatically the point that ***there is only one logical opposite of a conditional statement***: the sufficient condition and the negation of the necessary condition, coexisting. Many statements that *seem like they contradict* a conditional statement are in fact compatible with it.

The logical opposite of the conditional statement

Sufficient \rightarrow Necessary

is

Sufficient and ~~Necessary~~

The logical opposite of

A \rightarrow B

is

A and \neg

Question Type: Contradiction (Must Be False/Cannot be True)

We have already seen the following question wordings:

Which of the following is LEAST supported by the statements above?

If the statements above are true, each of the following must be true EXCEPT?

These two questions above imply that four of the answer choices **must be true**, or are strongly supported, and one **could be false**, or is unsupported. Those questions must be distinguished from the following questions:

If the statements above are true, which of the following must be false?

If the statements above are true, each of the following could be true EXCEPT

Each of the following is consistent with the statements above EXCEPT

Each of the following is compatible with the statements above EXCEPT

The statements above support the rejection of which of the following?

These are questions that ask for an answer choice that **cannot be true**, or, in the last example, that is *most likely to be false*. The correct answer contradicts the stimulus; the correct answer must be the **logical opposite** of what is stated or implied by the stimulus.

The words **consistent** and **compatible** are equivalent and are often misunderstood. They do not mean “follows from”, or “goes with,” or “is cool with” or any such nonsense. Two statements could be **consistent** or **compatible** and have no logical connection.

The sky is blue.

and

Keith Richards is white.

are **consistent**, **compatible** statements. They are **consistent** and **compatible** because they **do not contradict** each other. Therefore, those questions that ask for a statement that is **inconsistent** or **incompatible** with the stimulus are asking for a statement that **contradicts** the stimulus.

Question: Preptest 18 (December 1992), Section 2, Question 23

First statement: The **necessary keyword** “only when” introduces “help students become independent learners,” so the first sentence can be diagrammed:

Teachers effective → *Students Independent Learners*

Second statement: “not until” is a difficult phrase. The sentence can be rephrased:

Until teachers have the power to make their own decisions, they cannot enable their students to make decisions.

Because **until** is equivalent to **unless**, the second sentence can be diagrammed:

Students Make Decisions → *Teachers Make Decisions*

Third statement: the **necessary** condition word **essential** describes “Students’ capability to make decisions”, so this sentence can be diagrammed:

Students Independent Learners → *Students Make Decisions*

The three statements can be combined to show that the fourth sentence is a valid conclusion:

Teachers Effective → *Students Independent Learners* → *Students Make Decisions* → *Teachers Make Decisions*

The question asks for a statement that **cannot be true** about teachers who have “enabled their students to make their own decisions.” These teachers’ “students make decisions”, so, following the diagram above, we can infer that those “**teachers make decisions.**” We do not know whether those “students are independent learners” or whether those “teachers are effective.” **When evaluating combined conditional statements, you can infer what must be true (and must be false) by reading left to right. You can infer what could be true (and could be false) by reading right to left.** We can infer that “teachers make decisions” **must be true**; we know that the correct answer **must be false**, so it must **contradict what must be true**. We can predict that the correct answer will be “~~Teachers Make Decisions~~” “teachers do not have the power to make their own decisions.”

(E) is CORRECT.

- (A) Could be True
- (B) Could Be True
- (C) Could Be True
- (D) Must Be True

This was a ***Contradiction Question***. If an answer choice ***could be true***, then it must be incorrect. An answer choice that ***must be true***, like (D), also ***could be true***. This sometimes seems confusing, because ***must be true*** and ***could be true*** sound like fundamentally different statements. However, if a statement is definitely true, it also is ***possible***. Otherwise, it would be impossible, and therefore untrue!

Whatever must be true, could be true.

Must Be True \rightarrow Could Be True

Whatever is necessary is possible.

Necessary \rightarrow Possible

Question: Preptest 31 (June 2000), Section 2, Question 8

In a **Contradiction Question**, just as you would in a **Must Be True Question**, pay very close attention to any strongly worded statements, particularly statements that can be diagrammed:

For all species of higher animals, reproduction requires the production of eggs but not necessarily the production of sperm.

To diagram a complicated sentence like this, you can separate a prepositional phrase:

Higher Animals: Reproduction Requires Eggs and Not Necessarily Sperm

When analyzing arguments, “**but**” and “**and**” are different: “**but**” is a **Transition Word** and “**and**” is a **Continuation Word**. When doing logical diagramming, however, **but** is equal to **and**.

The **necessary condition** word “**requires**” allows the first part of the sentence to be diagrammed:

Higher Animals: Reproduction → Eggs

The second part of the sentence **should not** be diagrammed in this way:

Higher Animals: Reproduction → ~~Sperm~~

The diagram above implies that higher animals cannot reproduce when sperm is involved. This would be quite shocking to bulls, bucks, and fathers everywhere. “**Not necessarily**” **does not imply a negated necessary condition**. A **not necessarily** statement such as this can be represented in this way:

*Higher Animals: **Some** can reproduce **without** sperm*

or

*Higher Animals: Reproduce **and** ~~Sperm~~*

These statements are the **logical opposite** of

*Higher Animals: Reproduction **requires** sperm*

Which can be diagrammed:

Higher Animals: Reproduction → Sperm

This **logical opposite**, the statement that *for higher animals, reproduction requires sperm*, could be the correct answer. Usually, however, correct answers to **Contradiction Questions** are the **logical opposites** of the **conditional statements** or other strongly worded claims in the stimulus.

There are other **some** statements in this stimulus, and the last sentence contains a **comparison** (“*making the species less adaptive*”). These statements, however, cannot combine with any other statement. The only statement that merits a diagram in this stimulus is the conditional statement in the second sentence:

Higher Animals: Reproduction → Eggs

The correct answer will most likely be the **logical opposite**, the **minimum contradiction**, of this statement. A stronger contradiction, however, can also be a correct answer. There is no such thing a better or worse contradiction. Any answer choice that contradicts the stimulus is correct!

(B) **CORRECT**. This **some** statement contradicts the claim diagrammed above. It is established that **all** species higher animals **must** produce eggs to reproduce. A mutant species of higher animal that produced no eggs would go extinct in one generation and cease to be a species!

(A) The stimulus mentioned a “*rare female-only*” species of salamander. There are probably other salamander species with male and female members.

(C) This is possible. “*Significant number*” is very vague and therefore not the kind of language we usually find in a correct answer to a **Cannot be True Question**. While the female-only salamander is “*rare*”, other female-only species might be quite common.

(D) The stimulus states that female-only species are “*less adaptive*” than species containing male and female species. This comparison does **not** imply that **all** species containing male and female members are “*very adaptive*.”

(E) This answer choice contains an **Unsupported Comparison**. The only comparison made by the stimulus is the statement that female-only species are less adaptive than those species that contain male and female members. Any other **comparison** is **unsupported**. We know that **Unsupported Comparisons**, **Unsupported Elements** and **Unsupported Judgments** are incorrect answer choices to **Must Be True** and **Most Strongly Supported Questions**. These are all also incorrect answers to **Contradiction Questions**: the correct answer must **contradict** what **must be true**. If the stimulus does not contain a relevant comparison, element, or judgment, we cannot determine whether an answer choice that contains a comparison, element, or judgment **must be false**.

Contradiction Questions require an answer that is the **logical opposite** of what is stated or implied by the stimulus: to determine what **must be false**, one must first determine what **must be true**. When there are **conditional statements** or other strongly worded claims in the stimulus, the correct answer is usually the **logical opposite** of one of those statements.

Question: Preptest 2 (October 1991), Section 2, Question 11

This is the twelfth of the 100 hardest Logical Reasoning questions ever. Good luck!

Biologist

Forest Continues to Disappear at Current Pace → Koala Approach Extinction

Politician

("All that is needed" is an antiquated expression, absent from the contemporary test, which introduces a **sufficient condition**)

~~Deforestation~~ → ~~Koala Extinction~~

Often, this question is mistakenly thought to be a **Disagreement Question**, the question type discussed next. This question, however, has two demands: a statement **consistent** with the biologist but **inconsistent** with the politician. The correct answer must **contradict** the politician, but **could be true** according to the biologist. This is different from a **Disagreement Question**, which demands an answer that **contradicts** one speaker but **must be true** according to the other speaker.

Remember that **consistent** means "**does not contradict**." So there are infinite statements that are consistent with the biologist. But **there is only one logical opposite to a conditional statement**, and a **logical opposite of a statement is the minimum contradiction of that statement**.

The **logical opposite** of the Politician's claim is

~~Deforestation~~ **and** Koala Extinction

The correct answer must contain this statement, or a more strongly worded version of this statement, such as ~~Deforestation~~ → Koala Extinction.

(B) is **CORRECT**. This is the only one of the answer choices that contradicts the politician's claim. If you understand logical opposites, you will understand what the correct answer must contain! This answer choice is not implied by the biologist's claim, but it is **consistent** with it: the biologist did not state that deforestation was the **only** threat to the koala!

As with this question, and with future questions, when there is a **clear, absolute, and unmistakable** criterion for a correct answer, discussing the incorrect answer choices would be counterproductive!

Question Type: Disagreement Question

These questions, often called **Point at Issue Questions**, usually follow a stimulus that contains two speakers. The correct answer must be a statement about which the two speakers would **disagree**. For an answer choice to be correct, it must contain a statement about which one speaker would claim, "That statement **must be true**, or is *very likely to be true*, while the other speaker would claim that that same statement **must be false**, or is *very likely to be false*. These questions, therefore, are actually a hybrid of **Inference** and **Contradiction Questions**.

Question: June 2007, Section 2, Question 16

As always, regardless of the question type, note all occurrences of strong language in the stimulus. Taylor not only claims that the researchers' claim is suspect, but that "**all** such mathematically precise claims...**could never** be established by science." This statement can be diagrammed:

Mathematically Precise Claims → ~~*Established by Science*~~

Strongly worded claims, particularly **conditional statements**, are the statements most likely to be contradicted by the other speaker. The **logical opposite** of Taylor's claim is

Some mathematically precise claims **can** be established by science.

If Sandra believes that there is even one mathematically precise claim that can be established by science, then she has **contradicted** Taylor's claim. Her claim that "*Many scientific disciplines obtain extremely precise results*" is stronger form of this **logical opposite** and therefore **must be false** according to Taylor.

Also note that Sandra makes no claims about the research at the local university or "*nonverbal signals*."

(A) – (C) All of these answer choices contains statements about "*nonverbal signals*." Sandra does not address this issue at all. Sometimes, a conditional statement can imply the rejection of a claim, even if elements of that claim are not specifically mentioned. Sandra, however, makes no conditional statements.

(D) **CORRECT**. Taylor would claim that this statement **must be false**: it **contradicts** his conditional statement about *mathematically precise claims*. Sandra would claim that this statement **must be true**.

(E) Neither speaker evaluates the "**majority of claims made by scientists**."

Question: Preptest 1 (June 1991), Section 3, Question 25

**This is the thirteenth of the 100 hardest Logical Reasoning questions ever.
Good luck!**

Shanna makes a claim that, because of the **sufficient keyword** “any”, can be represented as a conditional statement:

Owner of an Artwork: Distasteful OR Inconvenient → Ethical Right to Destroy the Art

Jorge also makes a claim that can be represented as a conditional statement:

Owner of a Unique Artwork → Right to Possess + ~~Ethical Right to Destroy the Art~~

They clearly disagree about the ethical right to destroy artwork. Shanna claims that ownership itself confers the right to destroy, whereas Jorge believes that owners of *unique* artwork cannot destroy it.

(A) **CORRECT.** Most test-takers overlook this answer choice because the *unflattering portrait of the owner’s father* seems to be an **Unsupported Element**. However, Shanna believes that ownership *automatically* confers the right to destroy an artwork, so she would claim that this answer choice **must be true**. Jorge, however, would claim that this answer choice **must be false**: if the owner’s father just happened to be one of the rather large subjects in a painting by Colombian artist Fernando Botero then Jorge would claim that the owner of this *unique* portrait, simply by virtue of ownership, does not have the right to destroy it. Perhaps that seems like a stretch, but consider how strong this answer choice is: it contains the word **anyone**! Certainly there are **some** people who possess portraits of their family members that are *unique artworks*: according to Jorge, these people do not have right to destroy those artworks. Shanna would agree that “**anyone who owns (artwork)...is justified in destroying it.**” Jorge would disagree: he believes that “**some who own (artwork) are not justified in destroying it.**” The “*father*” issue is really a distraction from the deeper disagreement.

(B) Neither speaker addresses a moral obligation to make the paintings available for public viewing.

(C) Neither speaker addresses how *often* owners intentionally destroy their artworks.

(D) Shanna would claim that this answer choice **must be true**: her claim applies to all artworks, whether or not they are “*unique*.” This answer choice is the *converse* of

Jorge's claim, and *converses could be true*. Since *must be true* and *could be true* are *not logical opposites*, this answer choice is incorrect.

(E) The disagreement between Shanna and Jorge is about ethics: neither speaker addresses the *legality* of destroying one's own artwork. It is very likely that Shanna would claim that this answer choice *must be true*. Jorge might agree, so this answer choice is incorrect.

Question: Preptest 8 (June 1993), Section 4, Question 15

**This is the fourteenth of the 100 hardest Logical Reasoning questions ever.
Good luck!**

Consumer Advocate:

*Manufacturers are misleading or **deceiving** consumers by their labeling practices. For example, they label a certain orange juice “fresh,” though this orange juice is made with flavor enhancers.*

*Since “fresh” is **commonly understood** to mean “pure and unprocessed”, this labeling practice is **deceptive**.*

Manufacturer

*Using words differently than they are **commonly used** is **not deceptive**.*

“Fresh” can also mean “never frozen.”

We cannot be faulted for failing to comply with standards that have not been officially formulated, but will comply with clear standards if the government sets them.

Note that they disagree about whether the practice is **deceptive**, but the manufacturer acknowledges that his definition of “fresh” differs from how the word is **commonly used**.

(A) **CORRECT.** The advocate would agree that “Common understanding is the arbiter – the judge – of whether a labeling practice **is deceptive**.” The manufacturer would disagree: “No, using words differently than they are commonly used **is not deceptive**.”

(B) They would probably both agree with this answer choice. The weakness of “**can**” makes this choice easily supported, and therefore unlikely to be rejected by one of the speakers.

(C) This is a direct quote of the advocate, but the manufacturer does not reject the claim that “fresh” is **commonly understood** to mean “pure and unprocessed.” The manufacturer points out that **can** fresh **can** have additional meanings.

(D) They would probably both agree with this answer choice, but neither specifically addressed a distinction between “*natural*” and “*packaged*” foods.

(E) Neither speaker is committed to this statement. It is *possible, but not necessarily true*, that both speakers, even the manufacturer, believe that government **should** set standards for truthful labeling practices. But even if the government did so, it would

be another claim to state that such standards would **ensure** truthful labeling practices.

Inferences Part II – Questions

The Green Blues

Preptest 7

Section 1: 3, 19

Section 4: 12, 19

Preptest 9

Section 2: 16, 17

Preptest 10

Section 4: 7

Preptest 11

Section 2: 12

Section 4: 2

Preptest 12

Section 1: 25 (Quantity Statements)

Preptest 13

Section 2: 11, 25 (Conditional Reasoning)

Section 4: 7, 21

Preptest 14

Section 2: 23

Section 4: 12

Preptest 16

Section 2: 13

Section 3: 4

Preptest 18:

Section 2: 2 (a rare ***Strengthening Question*** that includes Quantity statements), 14, 23

The Ancient Ones

Preptest 1

Section 3: 3, 25

Section 4: 9 (Quantity Statements), 16

Preptest 2

Section 2: 2, 11

Section 4: 13

Preptest 3

Section 2: 7 (Quantity Statements)

Section 4: 14

Preptest 4

Section 1: 17

Section 4: 5 (Quantity Statements), 9 (Conditional Reasoning), 24

Preptest 5

Section 1: 7, 15

Section 3: 1, 18

Preptest 6

Section 3: 19

Preptest 8

Section 1: 8, 17

Section 4: 6, 15, 23

Preptest 17

Section 3: 5

Chapter Five

Argument Analysis II: Assumptions

In the last section of Chapter Three, an assumption was defined as a **logical leap** in argument. A more rigorous definition follows:

An **assumption** is an **implicit** component of an argument. Implicit means *silent* or *unstated*, so **assumptions** are distinct from **explicit**, or *stated*, components of an argument: the **premises** (evidence), **conclusion** (main point), and **contextual information** (such as *counterclaims* and *rhetorical statements*).

There are two kinds of **Assumption Questions** on the LSAT: **Sufficient Assumption Questions** and **Necessary Assumption Questions**.

First, let's consider the following argument:

*The Nothing But Bacon Diet is a low-carbohydrate, high-protein, high-fat diet.
Therefore, the Nothing But Bacon Diet is a good diet for those seeking to lose weight.*

Your analysis begins with identifying the premises and the conclusion:

Premise:

The Nothing But Bacon Diet is a low-carbohydrate, high-protein, high-fat diet.

Conclusion:

The Nothing But Bacon Diet is a good diet for those seeking to lose weight.

Both the evidence and conclusion contain a **Repeated Element**, the “Nothing But Bacon Diet” The conclusion contains the **Unsupported Element** “a good diet for those seeking to lose weight”. The evidence that is not a repeated element we call **Unconnected Evidence**: “a low-carbohydrate, high-protein, and high-fat diet.” The correct answer will usually connect the **Unconnected Evidence** to the conclusion's **Unsupported Element**. A good prediction would be

A low-carbohydrate, high-protein, high-fat diet is a good diet for those seeking to lose weight.

This would probably be the correct answer, regardless of the type of **Assumption Question**. But if the question were a **Sufficient Assumption Question**, the following could be correct:

*Any low-carbohydrate diet is a **good diet** for those seeking to lose weight.*

This statement does not seem to relate to the specific argument above: it focuses only on one attribute of the *Nothing But Bacon Diet* and ignores the others. Also, the “**any**” makes this assumption much more broad than seems reasonable. This **assumption**, however, *makes the argument valid* – a perfect argument where the premises fully support the conclusion. There can be no doubt that the conclusion is true if this statement is assumed and the premises are true. Because this assumption is **enough** to make the argument valid, it is a **Sufficient Assumption**.

This statement would, however, be an incorrect answer choice to a **Necessary Assumption Question**. For the argument to be valid, it is **not necessary** that this assumption be true. It is *not necessary* that “**any low-carbohydrate diet**” be a “*good diet for those seeking to lose weight.*” The “*high-protein*” and “*high-fat*” components of the *Nothing But Bacon Diet* might be crucial factors in the diet’s success.

The following statement would not be a correct answer to a **Sufficient Assumption Question**, but would be a correct answer to a **Necessary Assumption Question**:

*Some diets that are high-fat **can** be good diets for those seeking to lose weight.*

Clearly this statement is not strong enough to **guarantee** that the conclusion is true. It therefore cannot be a **Sufficient Assumption** for this argument. But it is a **Necessary Assumption** of this argument. The best way to test whether or not a statement is a **Necessary Assumption** is to take its **logical opposite**. If the **logical opposite** of that statement makes the argument a poor one, that statement is a **Necessary Assumption** of the argument. This is because a **Necessary Assumption** is a **necessary condition** of the argument being a good one:

Good Argument → Assumption

According to the contrapositive, the **logical opposite (negation)** of the assumption establishes that the conclusion is invalid.

Assumption → Good Argument

So, we can prove that the statement above is a **Necessary Assumption** because its **logical opposite** makes the argument a poor one:

No diet that is high-fat can be a good diet for those seeking to lose weight.

(Some is the logical opposite of No/None)

If this statement is true, then the conclusion that the *Nothing But Bacon Diet* can be good for those looking to lose weight **must be false**. If the **logical opposite** of a

statement establishes that argument is a poor one, that statement is a **Necessary Assumption** of that argument; if a **logical opposite** proves that an argument's conclusion **must be false**, you have even stronger confirmation that the statement is a **Necessary Assumption** of that argument.

There are fewer **Sufficient Assumption Questions** than there are **Necessary Assumption Questions** on the LSAT. Most **Sufficient Assumption Questions**, however, contain arguments that can be **diagrammed**; for this reason, most **Sufficient Assumption Questions** contain answers that can usually be **predicted**.

The following are examples of **Sufficient Assumption Questions**:

Which of the following enables the conclusion of the argument to be properly drawn?

Which of the following is an assumption that makes the argument a valid one?

Which of the following requires that conclusion drawn is a valid one?

Which of the following, if true, ensures that the conclusion drawn above must be true?

The conclusion drawn above is valid if which of the following is true?

Enables, enough, makes valid, if (as opposed to "only if"), requires (as opposed to "requirement"): these are the words that indicate **sufficiency**.

Question: June 2007, Section 3, Question 5

The first step is to identify the components of the argument.

Counterevidence

An early entomologist observed ants carrying particles to neighboring colonies.

Counterclaim

The entomologist concluded that the ants were bringing food to a neighboring colony.

Evidence, introduced by the **Transition Word** “however”:

The ants were emptying their colony's dumping site.

Conclusion

The entomologist was wrong (the ants were not bringing food to a neighboring colony).

There is one, and only one, formula for the correct answer to a Sufficient Assumption Question.

Evidence → Conclusion

Identifying the components of the argument is a necessary step to properly predict the correct answer. When there is only one evidence statement, we can easily predict that the correct answer will be

Evidence (Emptying Colony's Dumping Site) → ***Conclusion*** (Not Bringing Food)

(C) is CORRECT. It is the only answer choice that contains the conclusion's ***Unsupported Element*** “not bringing food.”

(A), (B), (D), and (E) can be quickly eliminated because they do not match the prediction above. Analyzing the argument properly takes time, but the time it takes is worth it: proper analysis allows you to find the correct answer very quickly.

Question: Preptest 35 (October 2001), Section 1, Question 22
(page 226 of *The Next Ten Actual, Official LSAT Pretests*)

The first step is to identify the evidence and the conclusion.

Evidence

No chordates are tracheophytes
All members of Pteropsida are tracheophytes

Conclusion

No members of Pteropsida belong to the family Hominidae.

The next step is to diagram the statements that can be diagrammed. Each statement contains an **all** or a **no**, so all three statements can be diagrammed:

Evidence

Chordates → Tracheophytes
Pteropsida → Tracheophytes

Conclusion

Pteropsida → Hominidae

You must now combine the statements in the evidence that can be combined. Because *Pteropsida* is the **sufficient condition** in an *evidence statement* **and** in the *conclusion*, do not alter that *evidence statement*. Instead, take the contrapositive of the first *evidence statement* to get

Tracheophytes → Chordates

The evidence statements can be combined:

Pteropsida → Tracheophytes → Chordates

Your diagram should look like this:

Pteropsida → *Tracheophytes* → ~~*Chordates*~~

∴ *Pteropsida* → ~~*Hominidae*~~

The **sufficient condition** of the *combined evidence* and the **sufficient condition** of the *conclusion* are the same:


Pteropsida → *Tracheophytes* → ~~*Chordates*~~

∴ *Pteropsida* → ~~*Hominidae*~~

When this is the case, the correct answer will be the last **necessary condition** in the combined evidence **implying** the **necessary condition** of the conclusion.

Pteropsida → *Tracheophytes* → ~~*Chordates*~~

∴ *Pteropsida* → ~~*Hominidae*~~



The correct answer will be

~~*Chordates*~~ → *Hominidae*

or its **contrapositive**

Hominidae → ~~*Chordates*~~

(B) is CORRECT.

The conclusion contains the **Unsupported Element** "*Hominidae*," so the correct answer must contain that **Unsupported Element**. (C) and (E) can be eliminated quickly. Since "*tracheophytes*" is a **Repeated Element** of the evidence, it probably will not be in the correct answer: (A) can be eliminated. Unless, however, you can diagram and predict with precision, you will probably have to guess between (B) and (D). The **awesomeness of diagramming** is that it allows you to confidently choose the correct answer and saves you from wasting time debating answer choices. Diagramming also works regardless of whether or not you know the meanings of *Pteropsida* (a type of fern), *tracheophytes* (ferns), *Hominida* (people), and *chordates* (vertebrates).

Question: Preptest 24 (December 1997), Section 3, Question 10.

This question is unique in that it combines the evidence for you by stating an ***intermediate conclusion***.

Evidence

Material Bodies → Divisible
Divisible → Imperfect

Intermediate Conclusion

Material Bodies → Imperfect

Conclusion

Spirit → ~~Material Body~~

The diagram should look like this:

Material Body → Imperfect

∴

Spirit → ~~Material Body~~

If you take the contrapositive of the intermediate conclusion, you get the following diagram:

Perfect → ~~Material Body~~

∴

Spirit → ~~Material Body~~

“Perfect” is the ***logical opposite*** of “imperfect.”

The correct answer must contain the ***Unsupported Element*** “spirit.” The correct answer can be predicted; the ***necessary conditions*** of the combined evidence and conclusion are the same:

Perfect → *Material Body*

∴

Spirit → *Material Body*

When this is the case, the correct answer will be different than when the sufficient conditions are identical. The correct answer will be

Perfect → *Material Body*

∴

Spirit → *Material Body*

Why is this the case? It seems counterintuitive that an element from the conclusion would be the **sufficient condition** of the predicted answer. The evidence, of course, is supposed to lead to the conclusion; in a valid argument, the evidence is sufficient to prove the conclusion. If we reverse the direct of the arrow, however, we do not have a valid conclusion.

Perfect → *Material Body*

∴

Spirit → *Material Body*

This would not result in a valid argument:

Perfect → *Material Body*
Perfect → *Spirit*

∴ *Spirit* → *Material Body*

When two conditional statements have the **same sufficient condition**, the strongest conclusion that can be drawn is a **some** statement, or a **could be true/could be false** statement.

Perfect → *Material Body*
Perfect → *Spirit*

∴ *There are entities that are spirits
and not material bodies*

This conclusion can be thought of as a **some** statement: *some Spirits are not Material Bodies*. Or as a **could be false** statement: *A spirit might not be a material body*. These are not strong enough to prove a **conditional statement** like that in the original argument.

When the **necessary conditions** of the combined evidence and conclusion are the same, the predicted answer is a conditional statement: the **sufficient condition** of the correct answer is the **sufficient condition** of the conclusion, the **necessary condition** of the correct answer is the **sufficient condition** of the combined evidence.

Perfect → *Material Body*

∴ *Spirit* → *Material Body*

(D) is CORRECT.

(A) does not contain the **Unsupported Element** "spirit."
 (B) does not contain the **Unsupported Element** "spirit."

- (C) The correct answer will usually not contain a ***Repeated Element*** like “*divisible.*”
- (E) Because the conclusion establishes what ***must be true*** about the “*spirit*” the correct answer will probably not establish ***either/or*** possibilities for the “*spirit.*”

Question: Preptest 24 (December 1997), Section 2, Question 21

The first sentence is **Contextual Information**: it states that law enforcement experts and most citizens have “*come to recognize*” something about gambling laws. The real evidence is about those gambling laws, and it starts after the colon:

No matter how diligent the effort, gambling laws are impossible to enforce.

Because of the word **impossible**, this statement can be diagrammed:

Gambling Laws → Cannot be Enforced

Or

Gambling Laws → ~~Enforceable~~

The first part of the sentence establishes that the level of “effort” is irrelevant; if a factor is irrelevant, then it should not be in a diagram.

The second sentence can also be diagrammed, because of the **sufficient condition** word **when**:

~~Effective~~ → Should Not Be Laws

The conclusion is more difficult to diagram. The **best way to diagram** it will **repeat terms from the evidence**: in this way we will be able to make a precise prediction. The following diagram repeats terms from the evidence:

Gambling Laws → Should Not be Laws

The diagram should look like this:

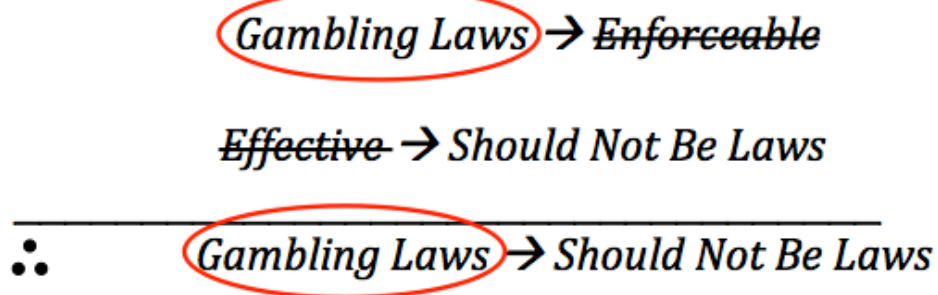
Gambling Laws → ~~Enforceable~~

~~Effective~~ → Should Not Be Laws

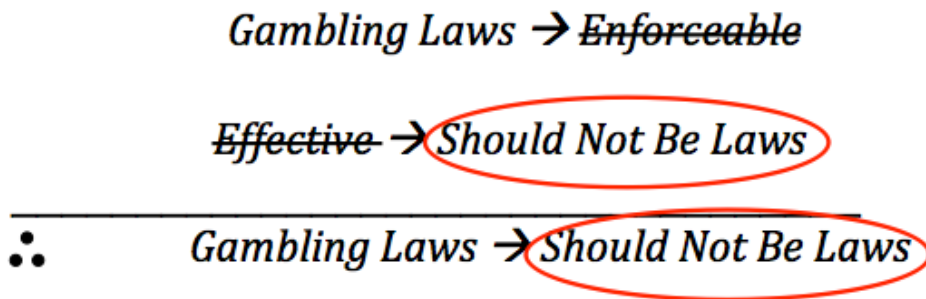
∴

Gambling Laws → Should Not Be Laws

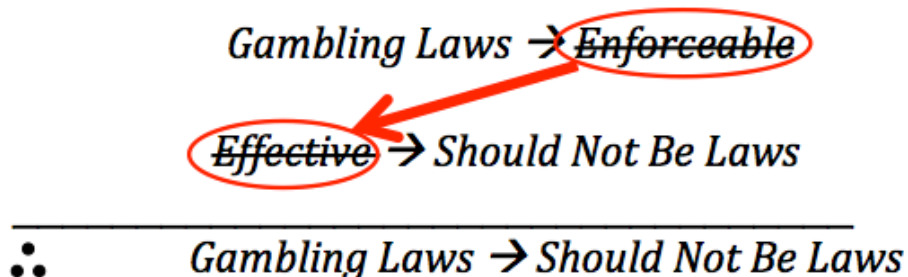
There is no **Unsupported Element** in the conclusion: “*gambling laws*” is the *sufficient condition* in the conclusion and in the first evidence statement.



There is no **Unsupported Judgment** in the conclusion: “*should not be laws*” is the *necessary condition* in the conclusion and the *necessary condition* of the second evidence statement.



When an argument has this structure, the correct answer will connect the **Unconnected Evidence**:



When the statement above is plugged into the argument, the claims are connected and the conclusion drawn is valid:

Gambling Laws \rightarrow Enforceable \rightarrow Effective \rightarrow Should Not Be Laws

The correct answer will be

Enforceable \rightarrow Effective

or its contrapositive

Effective \rightarrow Enforceable

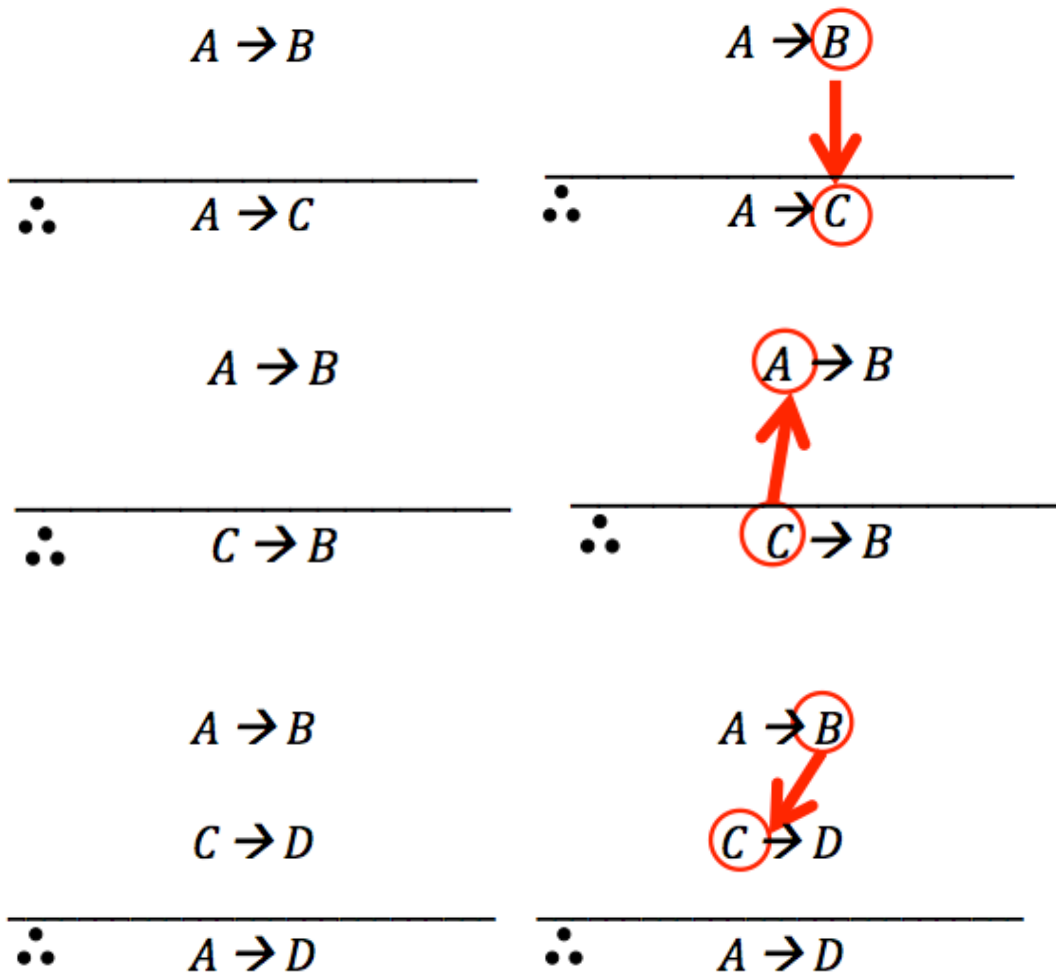
(A) **CORRECT.** This statement might not seem to be identical to the predicted answer. Remember, however, that “No Ps are Qs” is equal to “ $P \rightarrow Q$.” So “No effective law is unenforceable” is equal to “Effective \rightarrow ~~Unenforceable~~”, which is equal to “Effective \rightarrow Enforceable.”

(B) This is the **converse** of the statement in answer choice (A). This answer choice shows that even if you know the conditions the need to be connected, a proper diagram is necessary to precisely predict the correct answer. Even if you had trouble determining the precise meaning of answer choice (A), you could eliminate answer choice (B) simply because it is the **converse** of the proper prediction. ***Converses of predictions are never correct!***

(C) **Repeats Evidence.** This kind of answer choice is incorrect in a **Strengthening Question**, and is incorrect in a **Sufficient Assumption Question**. After all, a **Sufficient Assumption Question** is really a **Strengthening Question** on steroids: not only must the correct answer make the argument better, it must make the argument perfect.

(D) and (E) Whether or not citizens agree with the author is unimportant to this argument: the *popularity* of beliefs is usually irrelevant to the *truth* of those beliefs. So, unless the argument is about popular opinion, democratic politics, or consumer behavior, the popularity of beliefs is usually irrelevant to the argument’s validity.

The Three Most Common Formulas That Predict the Correct Answer to a Sufficient Assumption Question



When formulas fail!

The following questions are examples of Sufficient Assumption Questions that follow argument that do not conform to the formulas above.

Question: June 2007: Section 2, Question 23.

Evidence

The first statement contains the *sufficient keyword* **if**:

Increase Aggregate Well-Being → Morally Right

The second statement contains the *sufficient and necessary keywords* **if and only if**:

Morally Wrong ↔ Reduce Aggregate Well-Being

Conclusion

Leave Unchanged Aggregate Well-Being → Morally Right

You might note that the necessary conditions in the conclusion and the first evidence statement are the same. Following the second formula above, you might have predicted the following

Leave Unchanged Aggregate Well-Being → Increase Aggregate Well-Being

This prediction, however, is self-contradictory: there is no way this premise can contribute to a valid argument! More importantly, this prediction would have bypassed the **if and only if** statement, a bi-conditional, in the argument: no matter what the question type, a bi-conditional is **crucial** to the correct answer.

When the conclusion is a conditional statement and the formulas fail, ask yourself the following question:

Can the sufficient condition in the conclusion connect to the evidence in some way?

In this case, yes! Because “*Leave Unchanged Aggregate Well-Being*” is definitely a contradiction of “*Reduce Aggregate Well-Being*,” the following chain can be created:

Leave Unchanged Aggregate → Reduce Aggregate → ~~Morally Wrong~~

From this point, it is just a matter of connecting the end of the chain to the conclusion’s necessary condition:

~~Morally Wrong~~ → Morally Right

(C) is **CORRECT**.

Question: Preptest 15 (June 1995), Section 3, Question 18

Evidence

In an experiment, certain bacteria were given nutrients and genetic mutation occurred at random.

Conclusion

All genetic mutation is random.
Genetic Mutation → Random

Once again, prediction fails us. The conclusion is so much stronger and broader than the evidence: none of our usual formulas work. The conclusion is very strong: it is an **all** statement. Yet the evidence is so weak: in **one** experiment, **certain** bacteria experience random genetic mutation. The evidence merely proves that *some genetic mutation is random*, yet the argument concludes that *all genetic mutation is random*! We have never seen an argument that draws a conditional conclusion based on such limited evidence. When an argument draws such an unpredictable conclusion, do not try to predict precisely an answer. But you know that the correct answer must contain the **Unsupported Element** "*all genetic mutation is random*."

(A) **CORRECT.** Many quickly eliminate this answer choice: the "*or none are random*" part of the answer choice seems to weaken the argument. But we must consider this answer choice's **impact** when combined with the evidence. The evidence established that **some genetic mutation in certain bacteria is random**. So it is true that **some genetic mutation is random**. So it is **false** that **no genetic mutation is random**. So this "*all or none*" answer choice, when combined with the evidence proving that "**none**" is false, is enables one to conclude that *all genetic mutation is random*!

(B), (D) and (E) These answer choices do not contain the **Unsupported Element**. They all slightly strengthen the argument, but they are not strong enough – they are **Insufficiently Strong**. They are close to what we would want from a **necessary assumption**. To reach such a general conclusion based on one experiment, it must be true that the bacteria, the nutrients, and the environment were not unique to the experiment but **representative** of what occurs elsewhere in the natural world. But none of these answer choices are independently strong enough to make the argument valid.

(C) This answer choice contains the **Unsupported Element** "*all genetic mutation is random*," but it **Fails to Connect to the Evidence**: the evidence did not establish that *all genetic mutation in bacteria are random*, it merely establishes that **some genetic mutations in bacteria are random**.

Sufficient Assumptions and *Quantity – Some or Most - Statements*

Question: Preptest 24 (December 1997), Section 3, Question 19

First, identify the evidence and the conclusion:

Evidence:

Every student who walks to school goes home for lunch.

Conclusion

Some students who have part-time jobs do not walk to school.

The statement can be diagrammed, and the diagram should look like this:

Walk to School → Home for Lunch

∴

Part-Time Jobs SOME ~~Walk to School~~

“Walk to school” is positive in the evidence, but negative in the conclusion. You must take the **contrapositive** of evidence, for you cannot change in any way a **some** statement: there are *no contrapositives of some statements*, and you cannot switch the positives to negatives, or *vice versa*, in a **some** statement.

~~*Home for Lunch → Walk to School*~~

∴

Part-Time Jobs SOME ~~Walk to School~~

You must connect "~~Home for Lunch~~" to "Part-Time Jobs". The connection can be a **some** statement, or any stronger statement, such as a **most** or an **all**. All of the following would be correct.

***Some** students who do not go home for lunch have part-time jobs*

***Most** students who do not go home for lunch have part-time jobs.*

***All** students who do not go home for lunch have part-time jobs.*

***No** students that have part-time jobs go home for lunch.*

In practice, however, the weakest statement that completes the argument is usually the correct answer. The stronger statements, however, could be correct for a **Sufficient Assumption Question**, but would be incorrect for a **Necessary Assumption Question**: **Unnecessarily Strong Language** is not a problem on **Sufficient Assumption Questions**, but it is a fatal problem on **Necessary Assumption Questions**!

(A) This answer choice seems correct, but it changes which part of the predicted **some** statement is negated. This is not allowed! You can reverse the order of a **some** statement: "*some students who have part-time jobs do not do home for lunch*" would be correct. But you cannot add, remove, or change a negation in a **some** statement.

(B) Had this answer choice been "*every student who does **not** go home for lunch **has** a part-time job,*" it would be correct.

(C) This answer choice adds a negation to the predicted some statement.

(D) **CORRECT.**

(E) This choice does not contain the **Unsupported Element** "*part-time jobs.*"

Sufficient Assumption Questions and Causal Arguments

Question: Prep Test 11 (June 1994), Section 2, Question 22

This Sufficient Assumption Question does not have multiple statements that can be diagrammed. The conclusion, because of the keyword **no**, can be diagrammed:

Your Concern → ~~Environmental~~

Such a diagram does little for you, however; when there is only one statement that can be diagrammed, diagramming does nothing to help you predict an answer.

As always, however, we must identify the conclusion and the evidence:

Evidence

The oil company has admitted that concern for the company's image motivated them to clean the otters affected by the recent oil spill.

Conclusion

The oil company has no concern for the environment.

Ultimately, this argument is a **casual** one: the debate is what *caused* the oil company to clean the affected otters. When we speak of **causes** of human behavior, we are speaking of **motivations**.

A reasonable objection to this argument would be that **motivations** are extraordinarily difficult to prove. One who wants to go law school may be **motivated** by the financial rewards a career as a lawyer can provide, but this does not necessarily prove that there are no other **motivations**, such as intellectual curiosity or a desire to help others.

The point here is that it is very difficult to prove that a **motivation** did or not play a role in bringing about a certain result. This is also true of any **causal argument**: **causal explanations** are easily strengthened or weakened, but difficult – some philosophers would say impossible – to prove or reject.

In order to prove or disprove a causal explanation, one needs a statement that contains causal language. One cannot predict with precision what the answer choice will be. The following claim would be correct:

Concern with public image is incompatible with concern for the environment.

There are many more potential correct answers. What is important is that you find an answer that provides a strong claim about ***motivations***.

(A) **CORRECT**. This answer choice was unpredictable, but it has the strong claim about ***motives*** that the correct answer needs. The answer choice establishes that the oil company cannot have more than one motive for cleaning the otters. So the environmentalist's evidence, that the oil company was motivated by concern for its public image, in conjunction with this choice, is ***sufficient*** to show there was no concern for the environment.

(B) This choice is about results of the oil company's efforts, not its motivations.

(C) This choice is ***Insufficiently Strong***. Unless we are told so, as we were in (A), a concern for profits is not necessarily incompatible with a concern for the environment.

(D) This choice is about other means to clean the otters, not the oil company's motivations.

(E) This choice is about the results of the oil company's efforts, not its motivations.

Sufficient Assumptions and Math Problems

Some **Sufficient Assumption Questions**, as well as some **Inference Questions** (usually **Must Be True**), are best described as **math** problems: there are not many of these questions: most LSATs do not contain any. But they are worth covering, because they can seem intimidatingly complex but are really quite simple.

Question: June 2007, Section 2, Question 13

Evidence

Standard aluminum soft-drink cans do not vary in the amount of aluminum they contain.

50 percent of the aluminum in group M was recycled from aluminum in group L.

All cans in L recycled into M.

Other material in cans is negligible.

Conclusion

Group M contains twice as many cans as group L.

The first and fourth evidence statements establish that aluminum is a **constant** in cans and that there is *no other significant component* of a can. Together they basically mean a can is equal to its aluminum: *Can = Aluminum*. The remaining, important evidence statements can be expressed as an algebraic sentence:

Evidence

Can = Aluminum

0.5 x (Aluminum in M) = Aluminum in L

All Cans in L recycled into Cans in M.

Conclusion

Cans in M = 2 x (Cans in L)

The first evidence statement can be algebraically manipulated so it looks more like the conclusion.

Aluminum in M = 2 x (Aluminum in L)

The evidence and conclusion can also be algebraically manipulated, because we know that *"all cans in L were recycled into M"*. So wherever there is an *"L"*, we can replace it with a *"recycled into M."*

The evidence becomes

$$\text{Aluminum in } M = 2 \times (\text{Aluminum recycled into } M)$$

The conclusion becomes

$$\text{Cans in } M = 2 \times (\text{Cans Recycled into } M)$$

We also know from the first and fourth statements that $\text{Cans} = \text{Aluminum}$. So the evidence becomes

$$\text{Cans in } M = 2 \times (\text{Aluminum recycled into } M).$$

Both the evidence and conclusion now contain $\text{Cans in } M$, so these can be subtracted from both the evidence and conclusion. We can only divide the evidence and conclusion by 2. We are left with the following argument:

Evidence

$$\text{Aluminum Recycled into } M$$

Conclusion

$$\text{Cans Recycled into } M.$$

The correct answer will state that Aluminum Recycled is equal to Cans Recycled .

(C) is closest to this. (C) is **CORRECT**.

- (A) The argument is not about recycling the cans a second time.
- (B) The argument is not about the "quality" of the cans.
- (D) The argument is not about the origins of the aluminum in L.
- (E) The argument is about soft-drink cans only.

If you did not analyze the question algebraically, on this question you lucked out: only one answer choice contained **strong, relevant, numerical** data. (C) was an easy guess here. But if you are shooting for a 170+, the ability to alter statements algebraically can be very helpful. Such skills will also improve your ability to do Logic Games!

Necessary Assumptions

The following are examples of Necessary Assumption Questions:

Which of the following is an assumption on which the argument relies?

Which of the following is an assumption on which the argument depends?

Which of the following is an assumption made by the argument?

The conclusion drawn by the author is valid only if which of the following is true?

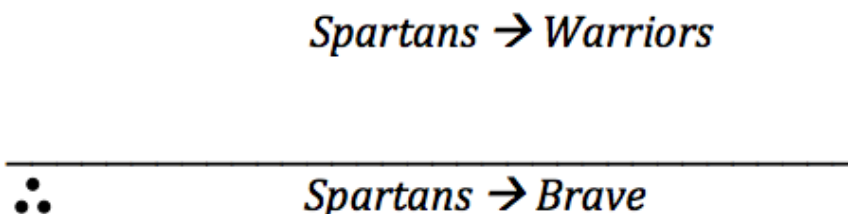
The argument assumes which of the following?

Note how language in the above questions differs from the language in **Sufficient Assumption Questions**. Some contain words or phrases that introduce **necessary conditions**, such as *depends*, *relies on*, and *only if* (as opposed to *if*). Others emphasize what the argument did, as opposed to what would improve the argument: an assumption **made** by the argument is a **Necessary Assumption**, whereas an assumption that **makes** the argument valid is a **Sufficient Assumption**. Note the passive voice (*made by*) in the **Necessary Assumption Question** as opposed to the active voice (*makes*) in **Sufficient Assumption Question**.

Consider the following argument:

All Spartans are warriors. Therefore, all Spartans are brave.

The argument can be diagrammed:



As we know from our study of **Sufficient Assumption Questions**, the statement “*All Warriors are Brave*” would complete this argument. That statement would be a correct answer to a Sufficient Assumption Question because it makes the argument valid. It would also be a correct answer to a **Necessary Assumption Question**, because if the statement is untrue, the argument is a poor one. If the statement “*All Warriors are Brave*” is untrue, then its logical opposite, “*Some Warriors are not*

Brave” is true. If that **logical opposite** is true, the conclusion is highly unlikely to be true.

So the statement “*All Warriors are Brave*” is **both** a **sufficient** and a **necessary assumption** of the argument. But other statements may be correct for only one of the two types of assumption question.

The statement “*All Warriors are Brave and Handsome*” is a **sufficient**, but **not necessary, assumption** of the argument. It is a **sufficient assumption** because it makes the conclusion that “*All Spartans are Brave*” true. A **sufficient assumption** can contain *language that is unnecessarily strong* and contain *irrelevant elements*, such as “*handsome*” : so long as it does the job, so long as it completes the argument, it is a **sufficient assumption**. A **necessary assumption CANNOT** contain *language that is unnecessarily strong* or *irrelevant elements*. The **logical opposite** of that statement, “*Some Warriors are not Brave or not Handsome*” does not establish that the argument is a poor one, because all those Spartans might very well be brave and ugly.

In **Necessary Assumption Questions**, these *Elimination Justifications* will be called **Language of Unnecessary Strength** and **Unnecessary Element**.

The statement “*Some Warriors are Brave*” is a **necessary**, but **not sufficient, assumption** of the argument’s conclusion. It is **not sufficient** because its language is **Insufficiently Strong** for the conclusion: the conclusion is an **all** statement, and a **some** statement cannot be used to prove that an **all** statement is true. It is a **necessary assumption** because its logical opposite is “*No Warriors are Brave*.” If this logical opposite of the statement is true, the conclusion “*All Spartans are Brave*” **must be false**. This proves that the statement is a **necessary assumption** of the argument.

The statements “*All Warriors are Brave*” and “*Some Warriors are Brave*” are **necessary assumptions** that **Connect the Evidence to the Conclusion**. Such statements connect the **Unconnected Evidence** to the **Unsupported Elements** in the conclusion. These statements are very much like the correct answers to *Sufficient Assumption Questions*, but, as stated above, they can be weaker than can the correct answers to *Sufficient Assumption Questions*. There is another kind of **necessary assumption**, however: consider the following statement:

The Spartans are not always trained so severely that they become warriors capable only of obedience and incapable of virtues such as empathy or bravery.

This statement might seem irrelevant to the argument; it contains elements such as the Spartans’ “training,” “virtues,” and “empathy,” which are not in the argument. When we take the **logical opposite** of the statement, however, we can see that it is a **necessary assumption**. To take the **logical opposite**, change **not always** to **always**.

*The Spartans are **always** trained so severely that they become warriors capable only of obedience and **incapable** of virtues such as empathy or bravery.*

This statement, by establishing that Spartan training makes the Spartans incapable of “bravery,” shows that the conclusion, *All Spartans are Brave*, **must be false**. A statement that shows a conclusion **must be false** is the **logical opposite** of a **necessary assumption** of that conclusion’s argument. So the original statement is a **necessary assumption**, yet it does not cleanly connect evidence to the conclusion. This is a **necessary assumption** that **Blocks an Objection**: it states that a situation that would make the conclusion false, or unlikely to be true, is not the case. Sometimes these objections will be highly improbable; what is important is that statement establishes that this objection is **not** the case.

Question: June 2007, Section 3, Question 11

Evidence

Feathers from preserved seabirds from the 1880s contain half as much mercury than do feathers from living seabirds.
Mercury in feathers derives from mercury in fish eaten by the seabirds.

Conclusion

Mercury levels in fish are higher than they were 100 years ago.

This is a reasonable argument. There is no obvious **Unsupported Element** in the conclusion. It is not a completely convincing argument, however. It reaches its conclusion by comparing “*preserved seabirds*” to “*living seabirds*”. A completely convincing argument will compare **like to like**: it will compare completely similar groups or entities. Of course, it is impossible to find *living seabirds* from 100 years ago; a perfect comparison in this case impossible. The **necessary assumption** will probably **block an objection** to this comparison.

(A) This answer choice challenges the comparison between preserved and living seabirds, so it actually weakens the argument. You can see this when you take the statement’s **logical opposite**: you can do this quickly by removing the word **not** from the statement. The **logical opposite** establishes the 1880s seabirds’ and the contemporary seabirds’ diets contain the same proportion of fish; the **logical opposite** establishes that the two groups being compared are in some relevant sense similar. This **logical opposite**, therefore, strengthens the argument; the **logical opposite** of the correct answer must weaken the argument. The **logical opposite** has an **Opposite Impact**.

(B) The relationship between mercury and the “*amount of pollution*” is **Irrelevant to the Argument**. You also should be suspicious of the word **depends**, which is **Language of Unnecessary Strength**.

(C) The relationship between mercury and the “*normal growth*” is ***Irrelevant to the Argument***. You also should be suspicious of the word ***essential***, which is ***Language of Unnecessary Strength***.

(D) The ***logical opposite*** of this answer choice establishes that the preserved seabirds “***were fully grown***.” Since we do not know whether the contemporary birds were fully grown, the *logical opposite* has an ***Unknown Impact***.

(E) **CORRECT**. The logical opposite of this answer choice establishes that the preserving process “***did substantially decrease the amount of mercury in the birds’ feathers***.” The ***logical opposite*** severely weakens the argument by establishing the mercury levels in the two groups of birds cannot be directly compared: the preserving process artificially lowered the mercury in the birds from the 1880s. This answer choice ***Blocks an Objection***.

Question: June 2007, Section 3, Question 9

Counterevidence

There are alleged sightings of the Tasmanian tiger.

Evidence

The Tasmanian tiger’s habitat has been taken over by sheep farmers and the tiger has disappeared from the area.

There is no hard evidence of the tiger’s survival.

Conclusion

The Tasmanian Tiger is extinct.

Once again, the argument seems reasonable, but not completely convincing. There is no hard evidence of the tiger’s survival; ***it is flawed, however, to conclude what is, or is not true, from the absence of evidence***. Perhaps some of the tigers have migrated and a small number of the species survives.

(A) This answer choice arguably strengthens the evidence by more fully explaining how the sheep farmers eliminated the tigers. The evidence in question, however, does not need strengthening: the evidence is clear that the tiger has been “eliminated” from the area.

(B) The ***logical opposite*** of this choice is “***No scavengers in Tasmania are capable of destroying tiger carcasses without a trace***.” This ***logical opposite*** strengthens the argument by disallowing an alternative explanation for the disappearance of evidence of the tiger. This answer choice has, therefore, an ***Opposite Impact***.

(C) This answer choice strengthens the argument, but it contains language, such as “**every**”, that is **Language of Unnecessary Strength**. The **logical opposite** of this answer choice is that “**Some** naturalists have **not** looked systematically for evidence of the tiger’s survival.” Even if there is one or more lazy naturalist not doing his or her job, the argument could still be a good one.

(D) **CORRECT**. The **logical opposite** of this answer choice is “*The Tasmanian tiger **did** move and adapt to a different region in response to the loss of its habitat.*” This **logical opposite** establishes that the conclusion **must be false**; the answer choice is therefore a **necessary assumption**.

(E) Like answer choice (C), this answer choice strengthens the argument but contains language that is **Language of Unnecessary Strength**. “*Those*”, in this case, is equal to “**all**”, so the logical opposite of this choice is “**Some** who have reported sightings of the Tasmanian tiger **are** experienced naturalists.” Even if there are some experienced naturalists that claim to have seen the tiger, the argument could still be convincing: expertise is not a guarantee of correctness!

**Question: Preptest 27 (December 1998), Section 1, Question 21
(page 294 of the Yellow Blues)**

This the seventeenth of the hardest Logical Reasoning Questions ever!

Background Information

Some legislators in R want to ban exports to S to encourage S to be less repressive.

Evidence

It is impossible for a country to remain repressive when telecommunications equipment is widely available.

Conclusion

Telecommunications equipment should be exempted from the ban.

The evidence can be diagrammed.

Telecom Equipment Widely Available → ~~Country Repressive~~

A diagram, however, is not particularly helpful here. The diagrammed evidence does not connect to any other statement. The diagram, however, does help point out that the manufacturers' argument assumes that, if telecommunications equipment is exempted from the ban, then such equipment will be "widely available" to the oppressed citizens of Country S.

(A) The willingness of Country S to allow the importation of telecommunications equipment is relevant to the argument, but the it does not have to be true that the amount of equipment has "recently increased": "recently increased" is an **Unnecessary Element** of this answer choice.

(B) **CORRECT.** The logical opposite of this answer choice is "*The telecommunications equipment that would be imported to Country S if the exemption were to be granted would be available solely to top government officials in S.*" The **logical opposite** establishes that the equipment would **not be widely available**, and so would likely be increase, rather than decrease, government repression. Because the **logical opposite** of the answer choice severely weakens the argument, this answer choice is a **necessary assumption**: it **Blocks an Objection**.

(C) The **logical opposite** of this answer choice is that "*A majority of the members of R's legislature favor exempting telecommunications equipment from the ban on exports to Country S.*" The **logical opposite** strengthens the argument, but not by much: the popularity of a proposal has no necessary connection to the whether the

proposal **should** be adopted. In any case, because the **logical opposite** even slightly strengthens the argument, the answer choice has an **Opposite Impact**.

(D) The answer choice strengthens the argument much more than does (B), but the words “most effective” are **Language of Unnecessary Strength**: a proposal can be “**not the most effective**” to and still be effective and worth enacting.

(E) This answer choice also strengthens the argument. Its logical opposite is “Without pressure from Country R, the government of Country S **would not be able** to continue repressing its citizens indefinitely.” The **logical opposite** establishes that pressure from Country R is **not necessary** to eventually curb Country S’s repressive policies. Pressure from Country R, however, *could still help* the repressed citizens of Country S, and so it could still be the case that Country R **should** allow the exportation of telecommunications equipment. The logical opposite fails to substantially weaken the argument; also, the word “indefinitely” is **Language of Unnecessary Strength**.

**Question: Preptest 9 (October 1993), Section 2, Question 25
(page 65)**

Background Information

*Medical research is usually not made public until it is published in a medical journal
after it has been peer reviewed.*

This practice delays public access to information that could save lives.

Evidence (the shift from what is unimportant to what is important is signaled by the
Transition Word “yet.”)

*Peer review is **the only way** to prevent potentially harmful information from reaching
the public*

Prevent Public Harm → Peer Review

Conclusion

*Waiting for publication in a medial journal **must be done** to protect the public from
harmful information.*

Prevent Public Harm → Medical Journal

When the conclusion contains an entirely **Unsupported Element** and there is
Unconnected Evidence, the correct answer can usually be predicted, much as it can
in a **Sufficient Assumption Question**.

Prevent Public Harm → Peer Review

∴ Prevent Public Harm → Medical Journal

(A) CORRECT. The answer choice, which can be diagrammed as *Peer Review → Peer Review in a Medical Journal*, **Connects the Evidence to the Conclusion**. A statement that does this is both a *sufficient and a necessary assumption* of the argument. Taking the logical opposite of such answer choices is often less helpful than taking the logical opposite of answer choices that **Block an Objection**, but the logical opposite is “Peer review can occur without peer review in a medical journal.”

(B) “Anyone” is **Language of Unnecessary Strength**. Even if the logical opposite is true, even if “**some** who do not serve on a medical review panel **do** have the necessary

*knowledge and expertise to evaluate medical research,” it might still be the case that a medical journal is **necessary** for peer review.*

(C) The logical opposite is “the general public **does** have access to the medical journals in which research findings are published”; the logical opposite slightly strengthens the argument by establishing that the public is exposed to the information in medical journals: this answer choice has an **Opposite Impact**.

(D) The answer choice can be diagrammed “*Medical Research* → *Subject to Peer Review*” is **Close to the Converse** of the predicted answer.

(E) The logical opposite of this choice is “*peer review panels are **never** subject to political and professional pressures.*” This **logical opposite** strengthens the argument by strengthening the integrity of peer review: this answer choice has an **Opposite Impact**.

Prep Test 30 (December 1999), Section 2, Question 22

This is the eighteenth of the hardest Logical Reasoning Questions ever! By most accounts, it is in the top ten most difficult of all time. Good luck!

Background Information

The “folktale” that one can tell a rattlesnake’s age by counting the sections on its rattle.

Evidence

*A rattlesnake’s rattle breaks off because it is so brittle
One new section of the rattle forms each time the rattlesnake molts.*

Conclusion

If the rattle were not so brittle, one could determine the rattlesnake’s age by counting the number of sections in its rattle.

Most test takers recognize that the argument does not establish **how often** a rattlesnake molts. When most test takers see that (A) establishes how often a rattlesnake molts, they think that (A) is correct .

(A) This choice completes the argument by establishing that the molting occurs predictably, “*exactly once a year*.” Were this question a **Sufficient Assumption Question**, (A) would be correct. But this choice fails the crucial test for a **Necessary Assumption Question**: does the **logical opposite** severely weaken the argument? Even if the rattle does not molt exactly once a year, it could still molt regularly and predictably: four times a year, once a month, or once every other year, for example. “**Exactly once a year**” is language that is **Language of Unnecessary Strength**.

(B) Whether the rattles are “*identical*” or not is **Irrelevant to the Argument**.

(C) This actually weakens the argument by establishing that the rate of molting accelerates as the rattlesnake ages. This answer choice has an **Opposite Impact**.

(D) This is second most popular wrong answer! Many students, myself included, thought that we were home free after we successfully avoided the **Sufficient Assumption** in (A). However, the actual brittleness of the rattle is unimportant. The argument concludes that one could determine the age by counting the sections “*if (the rattles) were not so brittle*.” When the conclusion is a **conditional statement**, it is never your concern whether or not the **sufficient condition** is true, or even likely. What is at issue is the **relationship** between the sufficient and necessary condition.

(E) **CORRECT**. Many test takers are puzzled by this answer choice. They do not see how a rattlesnake's food supply would be relevant to this argument. This choice, however, **Blocks an Objection**. Usually, such answer choices are phrased in the negative and so are easy to state the **logical opposite**; it is then easy to see how the unblocked objection severely weakens the argument. Answer choice (E) is not phrased in the negative, and its negation is awkward: "*Rattlesnakes' frequency of molting varies depending on whether food is scarce or plentiful.*" The negated answer choice establishes that the molting does not occur predictably but instead is dependent on a factor, such as food supply, that can change unpredictably. This answer choice would have been correct if it established that rattlesnakes molting does not vary depending on water supply, or weather, or the presence of predators, or reproductive success, or any number of factors that can affect an organism's development. Even though "*food supply*" is not mentioned in the argument, it is relevant to the argument, as "*food supply*" is relevant to the life of any organism.

Assumption Questions

The Green Blues

Sufficient Assumption Questions:

Preptest 7

Section 4: 23

Preptest 9

Section 2: 23

Section 4: 12

Preptest 10: none

Preptest 11

Section 2: 22

Preptest 12

Section 1: 22

Section 4: 20

Preptest 13: none

Preptest 14:

Section 2: 13

Section 4: 7, 23

Preptest 15

Section 3: 18

Preptest 18

Section 4: 12

Necessary Assumption Questions:

Preptest 7

Section 1: 2, 14, 24
Section 4: 6, 13, 24

Preptest 9

Section 2: 19, 21, 25
Section 4: 6, 10, 19, 25

Preptest 10

Section 1: 1, 3, 7, 15
Section 4: 4, 8, 18

Preptest 11

Section 2: 5, 13, 18, 24
Section 4: 7, 13, 15

Preptest 12

Section 1: 2, 10, 13
Section 4: 2, 6, 8

Preptest 13

Section 2: 12, 14
Section 4: 4, 8, 11

Preptest 14

Section 2: 17, 18, 20
Section 4: 19

Preptest 15

Section 2: 6, 16, 23
Section 3: 3, 24

Preptest 16

Section 2: 6, 14
Section 3: 3, 12, 14

Preptest 18

Section 2: 9, 15
Section 4: 8, 18, 22

The Ancient Ones

Sufficient Assumption Questions

Preptest 1: none

Preptest 2

Section 4: 17

Preptest 3

Section 2: 12
Section 4: 17

Preptest 4

Section 1: 2

Preptest 5

Section 1: 12, 16

Preptest 6: none

Preptest 8

Section 1: 5
Section 4: 9

Preptest 17

Section 3: 14

Necessary Assumption Questions

Preptest 1

Section 3: 17, 19, 21
Section 4: 3, 7, 13, 22

Preptest 2

Section 2: 3, 19, 23
Section 4: 9, 15

Preptest 3

Section 2: 3, 15, 21
Section 4: 12, 19

Preptest 4

Section 1: 5, 10
Section 4: 3, 10, 23

Preptest 5

Section 1: 3
Section 3: 5, 7, 10, 14, 17

Preptest 6

Section 2: 2, 9, 15
Section 3: 3, 7, 9, 15

Preptest 8

Section 1: 2, 6, 12
Section 4: 10, 13, 18, 21

Preptest 17

Section 2: 10, 12, 21, 23
Section 3: 3, 21, 25

Question Type: Flaw Questions

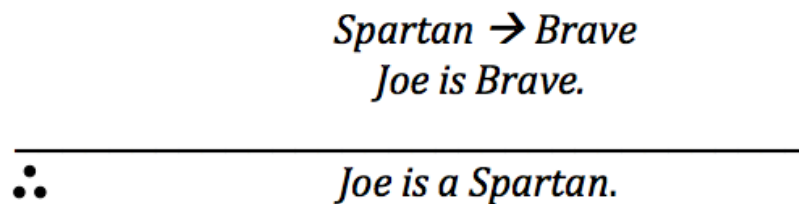
Flaw Questions are like **Method of Reasoning Questions**: both types ask “*what did this argument do?*” Flaw Questions, of course, are different in that they ask “*what did the argument do improperly?*” **Flaw Questions** are much more common than **Method of Reasoning Questions**, and there are two general ways a flaw can be described:

Flawed (Necessary) Assumptions versus Abstract Flaws

Consider the following argument:

All Spartans are brave. Joe is brave. Therefore, Joe is a Spartan.

The argument can be diagrammed:



The argument is flawed. The evidence establishes that “*Brave*” is a **necessary condition** of “*Spartan*”, but the argument **assumes** that Joe being “*Brave*” is **sufficient** to conclude the Joe is a “*Spartan*.”

There are three general ways the LSAT will describe the flaw in this argument.

The first two relate to an argument’s **necessary assumptions**.

One way to describe an argument’s flaw is simply to state its **necessary assumption**. The following are all synonymous examples of this kind of flaw description:

*The argument **presumes** that all who are brave are Spartan.*
*The argument **presupposes** that all who are brave are Spartan.*
*The argument **assumes** that all who are brave are Spartan.*
*The argument **takes for granted** that all who are brave are Spartan.*

The second way to describe an argument’s flaw criticizes a **necessary assumption** of the argument by stating the argument **overlooked** or **ignored** the **logical**

opposite of that **necessary assumption**. The following are all synonymous examples:

*The argument **overlooks the possibility** that some who are brave are not Spartan.*

*The argument **overlooks the possibility** that one could be brave without being a Spartan.*

*The argument **ignores the possibility** that some who are brave are not Spartan.*

*The argument **ignores the possibility** that one could be brave without being a Spartan.*

So, these first two ways of describing an argument's flaw are simply descriptions of an argument's **necessary assumption** or of the **logical opposites** of that assumption. In this sense, many **Flaw Questions** are really differently worded **Necessary Assumption Questions**.

There is a third type of answer choice, however, that is unique to **Flaw Questions**: a description of an argument's **Abstract Flaw**.

The "Spartan Joe" argument could be described with the following abstract expressions, all of which are synonymous:

The argument confuses a necessary condition with a sufficient condition.

The argument assumes that a required condition of a certain quality is a sufficient condition for that quality.

The argument assumes that an essential characteristic of a certain group is unique to that group.

The argument overlooks the possibility that a required condition is not a sufficient condition

You must be able to comprehend these difficult statements and understand that they all refer to the same flaw: **confusing a necessary with a sufficient condition**. Because you have never encountered answer choices that describe **Abstract Flaws**, the vast majority of this chapter is devoted to these **Abstract Flaws**: you must learn them not only to answer certain questions correctly, but to gain a deeper understanding of what the LSAT considers to be legitimate and illegitimate forms of reasoning. On the contemporary LSAT, however, most correct answers to **Flaw Questions** describe **necessary assumptions** or **logical opposites** of necessary assumptions.

Question: June 2007, Section 2, Question 21

We have already covered the stimulus of this question in the discussion **Cause and Effect** in Chapter Three. Let's look at the answer choices:

Both (A) and (D) refer to very common flaws.

(A) *"infers a cause from a mere correlation"*. This was the correct answer because the argument established as evidence a **correlation between** a preference for minivans over sports cars **and** lower accident rates and concluded that a minivan would cause the driver to drive more safely. **Cause and Effect Flaws** are often correct answers to **Flawed Reasoning Questions**, but they are much more often incorrect answers. You must avoid answer choices that describe the flaw as **Causal** if there is no **Cause and Effect Language** in the conclusion.

(D) *"mistakes a condition sufficient for bringing about a certain result for a condition necessary for doing so."* This would be a correct description of the following argument:

For owners of sports cars, automobile insurance always costs at least \$500 a month. Therefore, if I buy a car other than a sports car, my insurance will cost less than \$500 a month.

Sufficient and Necessary Flaws are often correct answers to **Flawed Reasoning Questions**, but they are much more often incorrect answers. You must avoid answer choices that describe the flaw as a **Sufficient and Necessary Flaw** if there is no **Sufficient and Necessary Language** in the evidence and conclusion.

(B), (C), (E) are not common flaws.

(B) *"relies on a sample that is too narrow"* and (E) *"relies on a source that is probably not well-informed"*

Both (B) and (E) accuse the argument of *relying on* **Illegitimate Sources of Evidence**. Arguments that do this are uncommon. Of course, it could be true that the driver has consulted too few or unreliable sources. But we have no evidence that these criticisms are accurate. The correct answer to a **flaw question** must describe what actually occurred in the argument. If you cannot find direct support for the language in the answer choice, that choice must be incorrect.

Arguments that contain **Illegitimate Sources of Evidence** will be discussed at the end of the chapter.

(C) *"misinterprets evidence that a result is likely as evidence that a result is certain."* This flaw seems like one that would be common. We often in our own lives

encounter exaggerated claims like this: "*The stock market is a profitable investment for most people. Therefore I am certain to make money in the stock market!*" On LSAT, however, this flaw is very rare. In the case of this question, this answer choice is incorrect because the evidence **does not establish** that "*driving a minivan will lead to fewer accidents*" is **likely**.

Question: June 2007, Section 3, Question 25

Counterclaim, attributed to “Some anthropologists”:

The human species could not have survived prehistoric times if it had not evolved the ability to cope with diverse natural environments.

~~Cope with Diverse Environments~~ → Survive
Survive → Cope With Diverse Environments

Evidence, introduced by the **Transition Word** “however”

Australopithecus Afarensis, a species related to early humans, could cope with diverse environments but did not survive prehistoric times.

*Australopithecus Afarensis: Cope with Diverse Environments **and** Survive*

Conclusion, introduced by the **Conclusion Word** “hence”

*The anthropologists are wrong (coping with diverse environments was **not necessary** for human survival)*

It is necessary to identify the counterclaim to identify the argument’s **Implied Conclusion** that coping with diverse environments was **not necessary** for human survival. At this point, we must determine the relationship between the **Evidence** and the **Implied Conclusion**. The **evidence** is that *Australopithecus Afarensis*, a species closely related to early humans, could “cope with diverse environments” but “did not survive.” For *Australopithecus Afarensis*, the ability to cope with diverse environments **did not guarantee** their survival. In other words, the ability to cope with diverse environments was **not sufficient** for their survival.

We can now think of the argument in the following manner:

Evidence

*For a species related to early humans, the ability to cope with diverse environments was **not sufficient** for survival.*

Conclusion

*For early humans, the ability to cope with diverse environments was **not necessary** for survival.*

This argument, therefore, commits a very common LSAT flaw: it **confuses a sufficient with a necessary condition**.

(A) CORRECT. Even if the language of this choice is confusing, the words **required** and **sufficient** indicate that this answer choice describes the flaw of **Confusing a Sufficient with a Necessary Condition**.

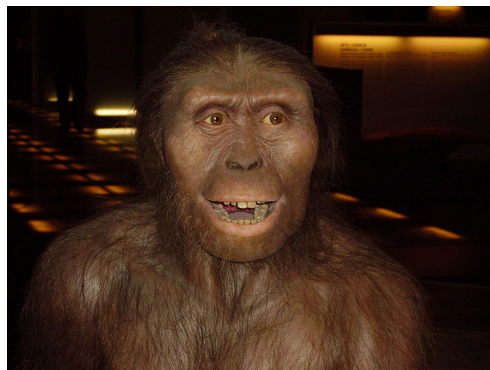
(B) This answer choice describes an assumption of the argument: **takes for granted** is equivalent to **assumes**. When an answer choice, or any sentence, that describes an argument begins with the phrase “*takes for granted that if...*”, what immediately follows the **if** must describe the argument’s evidence, and a description of the argument’s conclusion should follow. Yet the argument’s evidence does not establish a species’ “*characteristic that happened to enable it to survive.*” The only species mentioned in the evidence is *Australopithecus Afarensis*, and that species, sadly, did not survive. When an answer choice distorts the argument’s evidence in this way, you need not complete reading it: it must be incorrect.

(C) When an answer choice, or any sentence, describes an argument, the preposition **from** precedes a description of the evidence, and what follows that is a description of the conclusion. There is no species that “*survived certain conditions*” in the evidence, and the conclusion is not about “*all related species.*”

(D) This answer choice describes a possibility the argument ignored, a possibility that, if true, should severely weaken one of the argument’s assumptions. It is almost certainly true that *Australopithecus Afarensis* had “*one or more characteristics*” that lessened its chances for survival, but that possibility does challenge the argument.

(E) When an answer choice begins with the phrase “*fails to consider the possibility that even if...*” what immediately follows the **even if** must describe a part the argument’s evidence and what follows is the **logical opposite** of the **conclusion** of the argument. Yet the evidence never established a condition that “**caused a result**”: it never explained why *Australopithecus Afarensis* did not survive.

That was a tough one! As a reward, look at this reconstruction of what *Australopithecus Afarensis* might have looked like!



After we mourn *Australopithecus Afarensis*, the doomed aunts and uncles of our species, and recover from that question, it is important to note that we have covered the two of the most common flaw types on the LSAT:

Confusing Sufficient and Necessary Conditions
Confusing Correlation, or Coincidence, with Causation

There is another flaw that belongs on the in the “Top 3” list of LSAT flaws.

Preptest 16 (September 1995), Section 3, Question 2

Evidence

*No one has exchanged messages with intelligent extraterrestrial life.
No one has proved that any extraterrestrial life exists.*

Conclusion

There is intelligent life only on Earth.

The evidence establishes **what is not known**. Such evidence is insufficient to establish **what does not exist**. It would be legitimate to conclude that **we do not know** whether intelligent life exists elsewhere in the universe, but it unreasonable to infer from our own ignorance what must, or cannot, be true.

(B) is CORRECT. There is an **absence of evidence** for the **hypothesis** that extraterrestrial intelligent life exists. The argument confuses this **absence of evidence for the hypothesis with evidence against the hypothesis**.

(A) This consideration has no impact on the argument's conclusion, which is about "intelligent life." Other kinds of extraterrestrial intelligence are **Irrelevant to the Argument**.

(C) There is no "disagreement over a scientific theory" in the argument. This description of the argument, therefore, has an **Unsupported Element**.

(D) and (E) actually distort other LSAT flaws.

(D) is actually a distortion of an LSAT flaw known as **Ambiguous Word Usage/Equivocal Language**. I call it a "distortion" because *relying on the "vagueness" of a term*, though it sounds like a flaw, has never been the correct description of a flaw on the LSAT. Even vague terms, as long as they are consistently defined, can play a role in a good argument. The actual LSAT flaw will be described in greater depth later in the chapter.

(E) is a distortion of an LSAT flaw known as **Improper Analogy**. I call it a "distortion" because *relying on an analogy rather than evidence*, though it sounds like a flaw, has never been the correct description of a flaw on the LSAT. In some cases, direct evidence is unavailable and relying on an analogy is what an argument must do. This flaw will be described in greater depth later in the chapter.

Another way to understand the argument above is to realize that the lack of evidence **weakens** an argument for the hypothesis that extraterrestrial life exists.

Yet the argument infers that the lack of evidence **disproves** the hypothesis. So we have two ways to describe the argument above:

*Confuses an absence of evidence for a claim with evidence against the claim.
Confuses that which weakens an argument with that weakens or disproves a conclusion.*

This should remind you of **Weakening Questions**, correct answer to which must weaken an argument (the relationship between the evidence and the conclusion) but need not challenge the truth of conclusion itself. There can be bad arguments in support of a truthful conclusion.

So we have the three most common kinds of flawed reasoning on the LSAT, and all three relate to question types you have already done:

***Confusing a Sufficient and a Necessary Condition
Confusing a Correlation, or a Coincidence, with Causation
Confusing what Weakens an Argument with what Challenges a Conclusion***

The rest of the chapter is devoted to flawed arguments that are less commonly correct but are necessary to know. The more important of these argument types, like the third above, **Misinterpret Evidence**. The remaining argument types **Rely on Illegitimate Evidence**.

Flaws that Misinterpret Evidence

The first five examples are ***five of the hardest Logical Reasoning questions*** ever, so do not be discouraged if they are extremely difficult!

Prep Test 20 (October 1996), Section 1, Question 22

Evidence

*Criminal actions, like all actions, are ultimately products of the environment.
The law-abiding majority does the most to construct the environment.*

Conclusion

The law-abiding majority, and not criminals, are responsible for crime.

The conclusion might seem crazy, but if the first evidence statement is true, the argument at first appears to be a strong one. After all, if criminal actions are ultimately products of the environment, then it is the environment, not the criminal, that is responsible for those actions. And if law-abiding people do the most to construct the environment, then they are ultimately responsible for those criminal actions. The simplistic premises do seem to support the conclusion. In cases where an argument seems strong, you might suspect that evidence itself is flawed in some way: later in the chapter, we shall discuss certain kinds of ***illegitimate sources of evidence***. However, when the argument does not establish the sources of evidence, it is futile to speculate as to whether the sources of evidence are illegitimate. Like most ***Flawed Reasoning Questions***, the question asks us for the flaw in the “reasoning”; there must be a flaw there somewhere.

*There was one Flaw question, October 1997, Section 3, Question 22) that asked you to criticize an argument’s “justification” for its conclusion: the correct answer criticized the argument’s evidence, not reasoning. This is very rare!

The conclusion is about responsibility for criminal actions, so we need to look for the premises that mention responsibility for such actions. The first sentence establishes that “criminal actions, ***like all actions***, are ultimately products of the environment.” When I first read this argument, I missed the “***like all actions***”; it seemed like a rhetorical statement that was not crucial to the argument. **Never ignore strong language!**

If *all actions* are products of the environment, then **no one, not the criminals, and not the law-abiding majority, should be responsible for any action**. Yet the argument ignores the “*all actions*” part of its first premise. Because the argument ignores crucial evidence that would disprove its own conclusion, we can describe this argument as one that ***Ignores Counterevidence***.

(E) is **CORRECT**. The “*implicit principle*” part of this answer choice is somewhat confusing. The word “*implicit*,” which means “*unspoken*” or “*assumed*”, is used because the argument never *explicitly* states that one is not responsible for an action if that action is the product of the environment. The argument clearly **assumes** that this principle is true; otherwise, it would make no sense to say that criminals are not responsible for their actions. The argument errs when it shifts the blame to the law-abiding majority. Because the argument established that “*all actions*” are the product of their environment, it should conclude that **no one** should be held to be responsible for **any action**. The argument ignored evidence that weakened its own conclusion: therefore the argument **Ignored Counterevidence**.

(A) and (D) describe LSAT flaws you must learn.

(A) This answer choice describes the **Ambiguous Word Usage/Equivocal Language Flaw**. This flaw exists only where a key term or concept is used twice and in two distinct manners. Each usage must be independently legitimate; the flaw occurs when the argument exploits **two different, legitimate meanings** of a word. What follows is an example of an argument that exploits the ambiguity of the word “environment.”

The mayor of Jutland claims that the town’s deteriorating cultural institutions, such as its underfunded schools and sparsely-attended museums, are making the town a less attractive environment in which to raise a family. I disagree! Due to declining industrial activity, the Jutland River is cleaner than it has been in 100 years. It seems like the environment is getting better!

There are two definitions of “*environment*” appealed to in the above argument. The first is the broader, cultural definition, as in the phrases “*a good environment in which to raise children*” or a “*poor environment in which to study*.” The second use is the definition that solely relates to the natural world, as in “*Environmental Protection Agency*” or “*I support Greenpeace because I care about the environment*.” Each definition is independently legitimate; it would be flawed for an argument to confuse both definitions.

Whenever the word “**equivocal**” or “**equivocates**” is used in an answer choice, that choice is describing this flaw. The Latin scholars among you should recognize the roots for the word “*equal (equus)*” and “*to call (vocare)*” in this word: the word **equivocate** means “*to call equal what is actually unequal*.”

(D) This answer choice describes the argument as an improper generalization from “*statistical evidence drawn from only a small minority of the population*.” This answer choice describes an argument that **Generalizes from Too Few Cases**. This answer choice fails because there is no “*statistical evidence*” whatsoever in this argument: no data about crimes or criminals, for example. Each sentence of the argument contains general statements, and when there are only general statements, there can

be no **generalization**: a generalization is an inference drawn from specific cases. When there are no such specific cases, there can be no **generalization**.

The remaining answer choices do not describe common LSAT flaws. They drawn on content from the argument, but they either focus on what is unimportant or distort the argument in some way.

(B) This answer choice is a true statement about the argument, but it is unimportant. An argument about responsibility for *criminal actions* need not distinguish between “*socially acceptable*” and “*socially unacceptable*” actions.

This answer choice is **Technically True But Uninteresting**. The truth of an answer choice is necessary, but not sufficient, for correctness.

(C) The argument never “*distinguishes criminals from crimes.*” The argument does not deny the certain people who commit crimes are criminals. At issue is the responsibility for their behavior.

This choice is tempting for two reasons: because it draws on themes and language from the argument and because it is difficult to comprehend. Many test takers choose it for this very reason. “*I do not understand the argument,*” they reason, “*so the fact that I do not understand the answer choice is a good sign!*”

Not understanding an answer choice is usually a very bad sign! I like to call such answer choices **Babelchoices**: they say a great deal and are confusing precisely because they are stating gibberish.

Never choose an answer choice because you do not understand it. Writing confusing, and in some cases incomprehensible, answer choices is one way the test writers make tempting wrong answers. That is their job. Your job is not to fall for this trick. Unless you are certain that the remaining answer choices are wrong, a difficult to understand answer choice is almost certainly a wrong one.

There are three new flaws to remember.

Ignores Counterevidence
Ambiguous Word Usage/Equivocal Language
Generalizes from Too Few Cases

See **Preptest 10 (February 1994), Section 1, Question 10** and **Preptest 19 (June 1996), Section 2, Question 1** for an example of ***Ambiguous Word Usage/Equivocal Language***.

See **Preptest 22 (June 1997), Section 4, Question** for an example of a ***Generalization from Too Few Cases***.

Question: Prep Test 12, Sec 1, #24.

Evidence

Titanium has been discovered in the ink used in the famous Gutenberg Bible as well as that in the Bible B-36, but not in the ink of any other book.

Conclusion

*The evidence suggests that the Bible B-36 was printed by Gutenberg in the fifteenth century **and** the Vinland Map, which contains titanium, is not a forgery and was made in the fifteenth century.*

The first claim of the conclusion derives its support primarily from the fact that ink was only found in B-36 and Gutenberg's Bible. This claim rests on the **assumption** that titanium, at least in the books published in the fifteenth century, is a kind of 'fingerprint' of Gutenberg: its presence tells us that Gutenberg created it.

It must be said that the **assumption** described above is actually quite reasonable, for titanium had not been discovered in any of 'numerous' other books from the fifteenth century. The argument errs severely when its conclusion shifts its discussion to the Vinland Map.

The second claim in the conclusion is that the presence of titanium should no longer count as evidence that the Vinland Map was not from the fifteenth century. So here the argument **assumes** that the presence of titanium is not a 'Gutenberg fingerprint'. Here, the argument assumes that the discovery of titanium in the Gutenberg Bible and B-36 proves that titanium ink was generally in use in the fifteenth century.

This argument **Assumes Contradictions**: it **assumes** that titanium is, and is not, a 'Gutenberg fingerprint.' Or, titanium use in ink '*was, and was not, extremely restricted.*'

(A) CORRECT.

(B) This answer choice accurately describes the argument's evidence: the technology to detect titanium in ink "*only recently became available.*" But the argument makes no conclusion about whether fifteenth century printers or artists would '*know*' if their ink contained titanium. The answer choice does describe a kind of flawed reasoning: to draw a conclusion about what people **know** based on what is **true**. It is, of course, also flawed to draw a conclusion about what is true based on what people **know**. Both flaws are examples of **confusing truth with knowledge**.

(C) The argument does not date the Vinland Map or locate the publication of B-36 '**solely** on the presence or absence' of titanium. The argument established that B-36 was from the fifteenth century and the Gutenberg Bible is obviously from the fifteenth century. '**Solely**' is an example of **Extreme Language**.

(D) This choice is probably true, but also **Irrelevant to the Argument**. The argument is not about ‘*appreciating*’ B-36 or the Vinland Map.

(E) This choice criticizes the argument by claiming that discovery of the titanium in the Vinland Map **must** have occurred before the discovery of the titanium in the Gutenberg Bible and B-36. “**Must**” is an example of Extreme Language: we have no evidence that this must have occurred. Also, even if it had, that would be **Irrelevant to the Argument**.

An important takeaway from this older question is that you begin to see how different arguments interpret evidence differently: this argument **assumed** that that *titanium* was both restricted to Gutenberg and generally available in the fifteenth century. The argument assumed that titanium was, and was not, a ‘*Gutenberg fingerprint*.’

Let’s look at another argument assumes its evidence is a kind of ‘*fingerprint*.’

Question: Prep Test 35 (October 2001), Section 1, Question 17

When this question first appeared on the LSAT in October 2001, it was the second of two questions. The first question was a Main Point question. Hopefully you easily identified the Main Point and recognized the argument structure:

Counterclaim

Antarctica has been generally thought to have been covered by ice for 14 million years.

First Premise, introduced by the **Transition Word** “*however*”

Recently, however, three-million year old fossils...

Second Premise, introduced by the **Evidence Word** “*after all*”

Climatic warming or volcanic activity could have melted the ice sheet, thus raising sea levels and submerging the continent.

(Here “*thus*” does not function as a **Conclusion Word**: it means “*in this way or manner*.”)

Conclusion

About three million years ago, therefore, the Antarctic ice sheet must temporarily have melted.

Usually, a **Transition Word** such as “*however*” or “*but*” follows a **counterclaim** and introduces the **conclusion**. Here, the **Transition Word** introduces the more important of the two **premises**. There is a major difference between the first premise and the premise that follows the “*After all*.” The first premise contains the

startling evidence found below the ice, the “*three-million-year old fossils of a kind previously found only in ocean floor sediments.*” It is this evidence that the author thinks demonstrates that the ice sheet must have melted. The second premise is actually less important: it proposes different means by which the ice sheet could have melted. Although **causal factors** are mentioned in the second premise, this is not a **causal argument**, because there is no **causal language** in the conclusion. The main point is that the ice sheet **must have** melted. The causal factors are less important: note the shift in language between the strength of the conclusion (“*must have melted*”) and the strength of the second premise (“*could have melted*”).

The “*fossils*” in this argument are a lot like the “*titanium*” in the previous argument. Just as the previous argument concluded that titanium was a “Gutenberg fingerprint”, this argument concludes that the fossils are a “*fingerprint*” that proves there was once the presence of water from the ocean floor. However, just as the titanium might have been more broadly used in the fifteenth century (which would have supported the claim about the Vinland Map), the fossils might have lived in places beyond the ocean floor 3 million years ago. They might have existed on land. We know that they have only been **discovered** in ocean-floor sediments, but that does not rule out the possibility that they **existed** elsewhere.

At issue here in both of these ‘*fingerprint*’ problems is what one infers from an interesting discovery. The ‘*Gutenberg*’ question tried to have it both ways: it assumed that titanium was unique to Gutenberg, a “*Guttenberg fingerprint*,” and not unique to Gutenberg. The flaw, therefore, was one of **Assuming Contradictions**. This argument assumes that the fossils are evidence that the ocean has once risen above the ice: the fossils are an “*ocean floor fingerprint*.” This assumption **Ignores a Relevant Possibility**: the recent discovery could be evidence that the fossils could have existed elsewhere and are not an “*ocean floor fingerprint*.”

There is another way to conceive of this argument’s flaw. The argument assumes that the fact that the fossils had been **found only** in ocean-floor sediments is proof that they **exist only** in ocean-floor sediments. The argument assumes that what scientists **know** about the fossils is **all there is to know** about the fossils. The argument assumes that **current knowledge is complete knowledge**, or, more generally, **Confuses Knowledge with Fact**.

Either flaw description, **Ignores a Relevant Possibility** or **Confuses Knowledge With Fact** would be an acceptable answer choice.

- (A) This choice describes the flaw of **Appealing to Popular Opinion**, but this choice incorrectly describes the argument. The argument rejected what was said to be “*widely believed*.”
- (B) This is a **Babelchoice**: this choice incorrectly describes the argument, which claimed that climatic warming or volcanic activity **could** have melted the ice sheet. The argument never claimed that both causes could not have “*operated in conjunction*.” Also, it is important to note that, though there is

causal language in the evidence, the conclusion contains no **causal language**. So do not choose an answer choice that describes the flaw as a **Causal Flaw**.

- (C) This is a **Babelchoice**. The “*certain event*” that occurred is arguably the ice sheet melting. There is no “*confusing*” that event with the “*cause*” of that event. Once again, for this argument, do not choose an answer choice that describes the flaw as a **Causal Flaw**.
- (D) This is a **Babelchoice**. The argument does base its conclusion on a “*narrowly restricted range of cases*”: in fact, the argument bases its conclusion on only one “*case*,” the evidence of the fossils. The argument’s conclusion does not, however, have a “*very general application*”: the conclusion is about the Antarctic ice sheet, not ice sheets in general.
- (E) CORRECT. The presence of the fossils under the ice sheet is the “*inconsistency*.” The argument ignores other “*possible resolutions*”, such as the fossils existing in places besides the ocean floor, and concludes that “*only one resolution is possible*”: that ice sheet must have melted.

There are three new flaws:

Appealing to Popular Opinion
Ignoring a Relevant Possibility
Confusing Knowledge with Fact

An ***Appeal to Popular Opinion*** will be discussed later in the chapter.

Prep Test 16 (September 1995), Section 2, Question 24

It is easy to get lost in this argument about the Uplandian Supreme Court. There are two ***intermediate conclusions*** that are said to be ***inconsistent***, followed by a main point that rejects the first ***premise*** of the argument. When confronted by a long, hard-to-follow argument that asks you to find the flaw, focus on the ***conclusion*** and the ***final premise***. While sometimes the flaw involves an illicit connection between two pieces of evidence, the vast majority of flawed arguments contain a reasoning error between the last piece of evidence and the argument’s conclusion.

The final sentence contains both the last piece of evidence and the conclusion.

Evidence:

These conclusions are inconsistent.

Conclusion:

It cannot be true that the role of the Uplandian supreme court is to protect all human rights against abuses of government power.

This last sentence actually gives you all the information you need to answer the question. At issue here is the term “**inconsistent**”.

Statements are **inconsistent** if they cannot both be true. One statement **contradicts** the other. But knowing that two statements are **inconsistent** does not imply which statement is false: knowing that two statements are inconsistent implies that at least one, and maybe both, of the statements is false.

*A and B are **inconsistent** implies that A or B or both is false.*

By now you have surely seen this played out in many logic games.

If harriers are in the forest, grosbeaks are not.

$$\begin{aligned} H &\rightarrow \sim G \\ G &\rightarrow \sim H. \end{aligned}$$

This rule establishes that H and G are inconsistent, that they cannot both be “*in the forest.*” But this rule does not establish which bird, if any, is in the forest. If “*H and G are inconsistent,*” there are 3 possibilities.

$$\begin{aligned} &H \text{ and } \sim G \\ &G \text{ and } \sim H \\ &\sim G \text{ and } \sim H \end{aligned}$$

One of the great joys of turning to more advanced study of the LSAT is that you can see how the concepts you learn in Logic Games can help you with Logical Reasoning, and *vice versa*.

Now that we have fully grasped the concept of **inconsistent**, we are in a better position to precisely determine the flaw.

The argument established that two conclusions were **inconsistent**, and inferred from this inconsistency that the first sentence, the one about the role of Uplandian Supreme Court cannot be true. As inconsistency, however, merely implies that *something* is untrue. The argument erred in concluding that the first sentence, the first premise, is untrue while **Ignoring the Relevant Possibility** that other claims in the argument might be untrue.

Since there is a flaw committed between the last piece of evidence, the **intermediate conclusion**, and the **main conclusion**, we need not look any further in the argument. We need not wonder whether the two intermediate conclusions drawn are actually “**inconsistent**” or analyze the earlier part of the argument any further.

Even if the flaw is not entirely clear to you when you attempt a **Flawed Reasoning Question**, some, if not all, of the incorrect answer choices will refer to flaws not in

the argument. If you are familiar with the most common flaws, you will be able to quickly eliminate incorrect answers.

(A) This answer choice describes the flaw of ***Ignoring that an Argument is Consistent with Counterexamples***. This occurs when an argument seeks to undermine a reasonable generalization by citing counterexamples, but that generalization is compatible with counterexamples:

The claim that smoking is unhealthy is false. My great-grandfather smoked three packs of Lucky Strikes a day and lived to be 95!

One easy way to eliminate (A) is to note that there are no “examples” in this argument: no specific cases, no individuals who have had their rights violated, no specific rights mentioned. \

(B) This answer choice describes the flaw of ***Appeal to Popular Opinion***. This flaw will be discussed later in the chapter.

(C) This answer choice describes the flaw of ***Appealing to Motive***. There is no mention of how others could “profit” if an opposing claim were true. This flaw will be discussed later in the chapter. See Prep Test 19, Section 2, #14 for an example of this flaw.

(D) This answer choice describes a ***Flaw of Composition***. This flaw will be discussed later in the chapter.

(E) CORRECT. This answer choice correctly points out that the argument, on the basis of an established ***inconsistency***, concluded that one premise was false when it was possible for that premise to be true and another premise false. Specifically, the premise that begins “Since the constitution is not explicit about all human rights” or the premise that begins “human rights will be subject to the whim”, or both, could be false.

At this point you may have one or two objections to this correct answer choice:

*Objection: An inconsistency allows for the possibility that **none** of the inconsistent statements is true.*

True, but this possibility does not challenge the answer choice. . After all, if none of the premises are true, the answer choice is still accurate.

Objection: The answer choice focuses on the premises, but the final evidence in the argument was that “these conclusions are inconsistent.” Is it not possible that all the premises are true and that the reasoning has led to one, or even two, erroneous conclusions?

It is possible, but in this case each ***intermediate conclusion*** is reasonable if each premise is true. And this issue does not really undermine the accuracy of (E). At most this issue shows the incompleteness of (E). An answer choice need not be

complete to be true. As each other answer choice has been shown to be false, (E) is correct.

There are 3 new flaws:

Ignoring that an Argument is Consistent with Counterexamples
Appeal to Motive
Flaw of Composition

See **Preptest 18 (December 1992), Section 4, Question 25** for an example of an ***Ignoring that an Argument is Consistent with Counterexamples***.

A ***Flaw of Composition*** and an ***Appeal to Motive*** will be discussed later in the chapter.

Question: Preptest 15 (June 1995), Section 2, Question 20

Counterclaim, attributed to “a few critics”, about “S. R. Evans”:

I am not a true poet.

Evidence, introduced by the ***Transition Word*** “but”

Only true poets can criticize poetry.
Criticize Poetry → True Poet

The only true poets are those whose work conveys genuine poetic creativity.
(Remember, “***the only***” precedes a ***sufficient condition!***)

True Poet → Work Conveys Creativity

The conditional statements can be combined:

Criticize Poetry → True Poet → Work Conveys Creativity

The fact presented next invokes the contrapositive of that chain

The work of the critics does not demonstrate poetic creativity: ~(Work Conveys Creativity)

Intermediate Conclusion, introduced by the ***Evidence Word*** “since”:

The critics are not true poets.

Conclusion

The critics' judgment should be rejected (I am a true poet).

The argument seems valid. In fact the argument fulfills the definition of validity: *if the evidence is true, the conclusion must be true*. Yet it is flawed. **When, and only when, an argument seems, or is, valid should you consider the sources of the argument's evidence.** In this case, therefore, we must consider the argument's sources.

In the case, the source of the evidence is the poet "Evans", and the conclusion is about "Evans." Evans rejects the critics' judgment that "*Evans is not a true poet*" by claiming that they cannot judge him, for they are not "*true poets*" and, according to the conditional logic, "*Only true poets can judge poetry.*" Yet, by judging the poets, Evans reveals that he **assumes that he himself is a true poet** and therefore able to judge. We have clear evidence that Evans **assumes** that he is a **true poet** in support of the **conclusion** that he is a **true poet**.

(A) CORRECT. This answer choice states that the author **presupposes**, or **assumes**, what he seeks to conclude. The "**principle**" refers to the "*principle of criticism*" diagrammed above.

(B) The author never stated that **everyone** (*a strong word!*) is either a poet or a critic.

(C) The author never endorses the **implicit claim**, or **assumption**, that critics should be judged *independently of their poetry*. The author makes the claim that critics should be judged *by their poetry*.

(D) This answer choice implies that the author denies that "*some critics can be poets*", when in fact the author believes that *good critics must be true poets*.

(E) The argument does not **inevitably** (*a strong word!*), lead to a conclusion about whether or not poets can learn to improve their poetry. This can be a tempting choice, however, because the argument does not establish objective criteria for "*true poetry*." It is not clear how one can become a *true poet* if one needs to be a *true poet* to judge whether one is a *true poet*.

If that last sentence seems to be going in circles, that is because the argument above is an example of **circular reasoning**. Consider the diagram of the argument:

Critics: Evans is not a true poet
Evans: Criticize Poetry → True Poet → Work Conveys Creativity
Evans: The critics are not true poets



The critics are wrong (Evans is a true poet)

The act of criticizing other poets indicates that Evans assumes that he is a *true poet*.

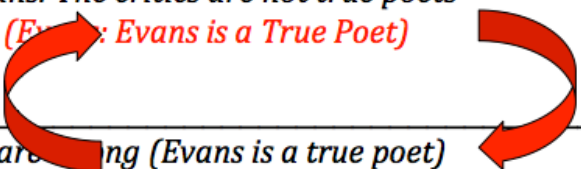
Critics: Evans is not a true poet
Evans: Criticize Poetry → True Poet → Work Conveys Creativity
Evans: The critics are not true poets
(Evans: Evans is a True Poet)

∴ The critics are wrong (Evans is a true poet)

The **assumption** is stated as the **conclusion**, and the **conclusion** is **assumed**.

Critics: Evans is not a true poet
Evans: Criticize Poetry → True Poet → Work Conveys Creativity
Evans: The critics are not true poets
(Evans: Evans is a True Poet)

∴ The critics are wrong (Evans is a true poet)



An argument like this one is said to be **circular** because it begins where it ends: one of its **assumptions** (where an argument logically “begins”) is its **conclusion** (where an argument logically “ends”). An argument like this is flawed not because we can determine that the conclusion is false: if the assumption is true, then the conclusion must be true. An argument like is flawed because it is an **unreasonable argument**. It is **unreasonable** because it cannot be challenged, debated, or **falsified** by additional evidence. It is **unreasonable** because it cannot be reasoned with.

It is usually easier than it was in the previous question to find evidence that an argument is **circular**.

Question: Pretest 17 (December 1995), Section 2, Question 2

Evidence:

Without self-understanding it is impossible to understand others.

Conclusion:

Anyone who lacks self-understanding will be incapable of understanding others.

A claim in the evidence and the conclusion are logically identical. Both can be diagrammed

$$\begin{aligned}\sim(\text{Self-Understanding}) &\rightarrow \sim(\text{Understand Others}) \\ \text{Understand Others} &\rightarrow \text{Self-Understanding}\end{aligned}$$

In the case of this argument, the argument's **conclusion** is a restatement of one of its **premises**. This kind of **circular reasoning** is easier to spot than that in argument, like the previous one, that **assumes its conclusion**.

(E) is CORRECT.

(A) Describes the flaw of **Confusing a Necessary with a Sufficient Condition**.

(D) Describes the flaw of **Ambiguous Word Usage/Equivocal Language**.

(B) and (C) describes **Babelchoices**.

A third kind of **circular reasoning** is one in which the **conclusion** is the **contrapositive** of a **premise** of the argument.

My students are extremely well prepared for the LSAT. Those so-called "students" who did not do well were not true students: they did not do all the homework or they did not put forth the necessary effort. Therefore, we can conclude that all of my students do well on the LSAT.

Evidence

Those who did not do well on the LSAT were not legitimate students
 $\sim(\text{Do Well}) \rightarrow \sim(\text{Students})$

Conclusion

All of my students do well on the LSAT.
 $\text{Students} \rightarrow \text{Do Well}$

There is no way to challenge this argument. Any potential **counterexamples**, *students that did not do well*, are automatically declared irrelevant. The LSAT would use the following language to describe this kind of reasoning:

The argument precludes the possibility of disconfirming evidence.

The argument perfunctorily dismisses the relevance of any counterexamples.

Question: Preptest 6, October 1991, Section 2, Question 14

Counterclaim, attributed to *The Daily Standard*

Smith's book is implausible.

Evidence

*The Daily Standard has made unwarranted criticisms in the past
Each incident described in Smith's book is plausible.*

Conclusion

Smith's book is plausible

The argument commits a **Flaw of Composition**: it draws a conclusion about the **whole** book based on what is true about **each part** of the book. In the case of some objective qualities, it is legitimate to draw a conclusion about the **whole** based on what is true about **each part**: if **each sentence** of a book is in French, then the **whole book** is in French. Subjective evaluations, however, do not transfer from the part to the whole: each incident in the book might “*well have happened to someone or other*”, but it might be implausible for all those incidents to happen to one person.

(D) is CORRECT.

Arguments can also draw a conclusion about **each part** based on what is true of the **whole**. The following argument does this legitimately:

The sculpture is made entirely of gold. So each atom in the sculpture is a gold atom.

The following argument commits a **Flaw of Division**:

The students at this school come from diverse ethnic backgrounds. Therefore Seamus O'Reilly McMurphy, a student at this school, must have a diverse ethnic background.

This older argument about *The Daily Standard's* “implausible” attacks also contains a **False Flaw**: there is a statement that suggests the argument is basing its conclusion on *The Daily Standard's past unwarranted criticisms*. It is in general flawed to cite an opponent's *previous errors* as evidence to resolve a present issue; it is analogous to citing prior convictions in a criminal trial! This kind of flaw is called a **Source Attack**: these cite an opponent's *bad character, biases, previous bad judgment, or bad motivations, or ignorance* to **weaken** an argument. It is similarly flawed to commit a **Source Appeal**: to cite a proponent's *good character, even-handedness, previous good judgment, or expertise* to **strengthen** an argument.

It is incorrect, however, to accuse the preceding argument of committing a **Source Attack**, because the argument did present some more legitimate evidence to make its case: the evidence about the plausibility of the individual incidents in the book is far more relevant to the argument than is *The Daily Standard's* past criticisms.

Always looks to where the argument is strongest, to its most legitimate evidence, to determine its flaw.

Both **Source Appeals** and **Source Attacks** are a kind of **Illegitimate Evidence**. Flawed arguments based on **Illegitimate Evidence** are less common than those based **Legitimate**, but **Misused Evidence**. All the flaws discussed previously were those that **Misused Evidence**: that evidence can be called **Legitimate** because there was no reason to think that the evidence was not so.

Question: June 2007, Section 2, Question 17

Evidence

Computer experts maintain that the most serious threat facing large institutions such as hospitals is unauthorized access to confidential data.

Conclusion

Our hospital should make protection of our client's confidentiality our highest priority.

The conclusion is a **judgment**, but it is a judgment that makes sense if the computer experts are correct. **When, and only when, the evidence strongly supports the conclusion and there is reason to think the evidence is illegitimate**, the correct answer may **criticize the argument for certain kinds of illegitimate evidence**.

(B) is CORRECT. While client confidentiality is important, a hospital's highest priority should probably involve providing adequate medical care. When I go to a hospital, my first concern is not dying; when, and only when, I survive I might worry about whether my private information could be made public. While it is legitimate for the hospital executive to consult the opinions of computer experts, it is illegitimate for the hospital executive to rely **only** on the opinions of computer experts.

This answer choice describes a new flaw, a **Source Appeal to Illegitimate Expertise**.

(A) Describes a **Causal Flaw**, but there is no **Causal Language** in the argument.
(C) Describes a **Causal Flaw**, but there is no **Causal Language** in the argument.
(D) Is a different kind of **Illegitimate Evidence: Unrepresentative Evidence**. There is no conclusion about a "group" in this argument, only a conclusion about the executive's hospital. There is also no "data" in the argument. The following are examples of arguments that appeal to **Unrepresentative Evidence**:

Based on my survey of my friends in the Bacon Lovers Cooperative, I can conclude that efforts to induce Americans to eat less animal fat have failed.

Based on the writings of politically influential Renaissance cardinals, such as Cardinal Richelieu and Cardinal Woolsey, I can conclude that most Renaissance clergymen were cynical about religion and perhaps atheistic.

(E) The argument never addresses what is true of “***all institutions***.” Just as it is for ***Argument Analysis, Inference, and Necessary Assumption Questions, Extreme Language*** is fatal for answer choices in ***Flawed Reasoning Questions***.

So we have two new flaws to remember.

***Illegitimate Appeal to Authority or Expertise
Appeal to Unrepresentative Evidence***

It is not always incorrect to appeal to expertise: it is legitimate to consult a physicist about gravity or an economist about supply and demand. It would have been correct to consult the “*computer experts*” in the question about the any computer-related issues currently facing hospitals; the argument erred in drawing a conclusion far broader than what was warranted.

See **Preptest 26, Section 3, Question 16** for an example of a *Source Appeal to a Legitimate Authority*.

See **Preptest 12, Section 1, Question 20** for another example of a ***Source Appeal to an Illegitimate Authority***: in this matter the appeal is illegitimate because the matter under discussion is largely subjective and not therefore a matter that should be decided by experts.

See **Preptest 4, Section 4, Question 12** for an example of an ***Appeal to Unrepresentative Evidence***.

See **June 2007, Section 2, Question 4** for an example of a ***Source Attack on an Opponent's Biases***.

Question: Preptest 15, Section 2, Question 17

The argument might seem like an ***Illegitimate Appeal to Authority***, leading many to choose (B). But it is ***legitimate*** to appeal to “*historians of popular culture*” to determine *what was popularly believed in the past*. It would be ***illegitimate*** to appeal to historians of popular culture to settle a question of biological cause and effect (what “*most powerfully*” triggers yawning). But the argument did not do that. The argument committed another ***Appeal to Illegitimate Evidence: Appeal to Popular Opinion***.

(D) is CORRECT.

(A) Describes ***Circular Reasoning***.

(C) Describes a ***Generalization from Too Few Cases***.

(E) Describes a rare kind of ***Cause and Effect Assumption: Assuming One Cause is the Only Cause***.

Other examples of ***Appeals to Illegitimate Evidence***:

Source Attack on an Opponent's Motives:

See Preptest 19 (June 1996), Section 2, Question 14

Distorting an Opponent's Argument:

See Preptest 7 (February 1993), Section 4, Question 9

An argument that distorts an opponent's argument to make it easier to undermine is also known as a ***Straw Man*** argument, though you need not know this term for the LSAT.

All The Flaws

The Big 3

Confusing Sufficient and Necessary Conditions
Confusing Correlation, or Coincidence, with Causation
Confusing Weakening an Argument with Weakening a Conclusion

The last of these “Big 3” is one of many flaws that *Misinterpret Legitimate Evidence*

Misinterpretations of Legitimate Evidence

Ignores Counterevidence

Ambiguous Word Usage/Equivocal Language

Assumes Contradictions

Ignores a Relevant Possibility

Confuses Knowledge with Fact

Generalizes from Two Few Cases

Circular Reasoning

Flaw of Composition/Division

Appeals to Illegitimate Evidence

Appeal to Unrepresentative Evidence

Source Attack: an attack on opponent's bad character, bad motives, biases, past errors, ignorance, or lack of authority

Source Appeal: an appeal to a proponent's good character, good motives, even-handedness, expertise, or authority

Distorting an Opponent's Argument

Flawed Reasoning Questions

The Green Blues

Preptest 7

Section 1: 10, 17

Section 4: 3, 9, 11, 22

Preptest 9

Section 2: 2, 5, 14, 22

Section 4: 1, 5, 14

Preptest 10

Section 1: 5, 8, 10, 13, 21

Section 4: 14, 19, 21

Preptest 11

Section 2: 9, 15, 26

Section 4: 3, 9, 17, 19, 23

Preptest 12

Section 1: 14, 18, 20, 24

Section 4: 5, 7, 15

Preptest 13

Section 2: 7, 20, 24, 26

Section 4: 9, 16, 20

Preptest 14

Section 2: 4, 10, 22

Section 4: 10, 15, 18, 20

Preptest 15

Section 2: 17, 19, 20

Section 3: 2, 9, 19

Preptest 16

Section 2: 10, 22, 24
Section 3: 2, 9, 11, 24, 26

Preptest 18

Section 2: 4, 8
Section 4: 9, 11, 25

The Ancient Ones

Preptest 1

Section 3: 8, 12, 22
Section 4: 1, 5, 8

Preptest 2

Section 2: 5
Section 4: 6, 11

Preptest 3

Section 2: 5, 25
Section 4: 7, 15, 18

Preptest 4

Section 1: 8 (this could be classified as a Necessary Assumption Question), 16, 23
Section 4: 4, 12, 19

Preptest 5

Section 1: 2, 11, 13
Section 3: 11, 16

Preptest 6

Section 2: 4, 14, 17 (this could be classified as a Method of Reasoning Question), 22
Section 3: 4, 8, 16, 18, 20, 22, 24

Preptest 8

Section 1: 3, 23
Section 4: 1, 3, 8 (this could be classified as a Necessary Assumption Question)

Preptest 17

Section 2: 2, 5, 11, 17

Section 3: 7, 9, 16, 20, 22

Additional Information Questions – Part II

Strengthen and Weakening – Part II

This chapter assumes that you have done at least Pretests 24, 29, 30, and 33.

Some Statements as Weakeners and Strengtheners

Some ***Strengthening and Weakening Questions*** you have seen have contained answer choices that are ***Some*** statements. These are usually incorrect.

Question: Pretest 30 (December 1999), Section 4, Question 20

Evidence

The social impact of the new antihistamine is poorly understood.

Conclusion

*There should be a **general** reduction in the pace of bringing to the marketplace new drugs that are now being tested.*

This argument ***Generalizes from Too Few Cases***. In fact, the evidence only establishes one case of a ‘*poorly understood*’ drug, the new antihistamine, yet proposes a ‘*general reduction*.’ A good ***strengthen***er here must compensate for the argument’s flaw.

(B) is a commonly chosen answer to this question, and it is incorrect. It is a ***Some*** statement: “*The social impact of **some** of the new drugs being tested is poorly understood.*” This answer choice is far too weak to help the argument reach such a broad conclusion. In fact, a ***Some*** statement has never been a correct answer to a ***Strengthening Question***.

(A) is CORRECT. This answer choice is a far more effective strengthener than is (B). This answer choice establishes that the social impact of the antihistamine is ‘*better understood than that of **most** new drugs being tested.*’ This ***Most*** statement is far stronger than the ***Some*** statement in (B), and is therefore a much better ***strengthen***er.

A majority of the time, a ***Some*** statement is also an ***ineffective weakener***. This is because many arguments that the LSAT asks you to weaken are cause and effect arguments.

Claim:

Smoking cigarettes is unhealthy.

A **Some** statement, such as ‘*Some smokers live long, healthy lives*’, does little to weaken that claim. **Some** means ‘*at least one*’, so this statement establishes that at least one smoker lives a long, healthy life. General **causal** claims like that above are usually compatible with such **counterexamples**. One of the LSAT flaws discussed in the chapter on flawed reasoning was **Ignoring that an Argument is Incompatible With Counterexamples**.

Certain claims, however, are **incompatible with counterexamples**.

Cigar smoking is always healthier than cigarette smoking.

While it is generally true that cigar smoking is healthier than cigarette smoking, the claim above, because of the word ‘**always**’ is far stronger than a simple generalization. It is therefore far **easier to weaken**: one counterexample, one cigar smoker who gets an early case of mouth cancer, for example, would disprove that claim.

Arguments that make, or assume, **absolute claims** – claims that contain words like **all, none, always, or never**, words that introduce **sufficient and necessary conditions** – may be effectively weakened by one counterexample. They, therefore, can be weakened by a **Some** statement.

Question: Preptest 29 (October 1999), Section 1, Question 16

Evidence

Proto-Indo-European lacks a word for “sea” but contains words for “winter,” “snow” and “wolf.”

Conclusion

Those who spoke Proto-Indo-European lived in a cold climate isolated from the sea.

This argument makes a strong, crucial assumption that can be expressed as a conditional statement: *if a language lacks a word, the people that speak that language do not encounter what that word represents.*

(B), a **Some** statement, is correct because it disproves that crucial assumption.

(A) This choice is deliberately tempting: many students forget that, even on the LSAT, **the real world exists**: ‘fish’ can live in rivers and lakes, not just the ‘sea’! Very often, the test writers will make (A) a tempting choice, knowing that many students

might see it and conclude immediately that it is correct. That such tempting choices are often in (A) does not mean that (A) is seldom correct. **(A), like all choices, is correct close to 20 percent of the time.** Do not fall victim to anti-(A) prejudice.

A “**Some**” statement has never been a good strengthener.

A “**Some**” statement has never been a good weakener when the argument is **compatible with counterexamples** (most **causal arguments** are like this).

A “**Some**” statement is a good weakener when the argument makes very strong assumptions that are **incompatible with counterexamples**.

Strengthen and Weaken (EXCEPT) Questions

Some of the most difficult Strengthening and Weakening Questions contain the capitalized word “**EXCEPT**” in their question stem. One example:

Each of the following strengthens the conclusion drawn above EXCEPT

The correct answer will **not strengthen**. It might **weaken**, but more often it will have **no impact** on the argument. The incorrect answers may strengthen in varying degrees and in ways that are uncommon on normal **Strengthening Questions**: the incorrect answers may **confirm evidence** or provide some small amount of data that supports the conclusion. If an answer choice strengthens in any way, it must be incorrect.

Another example:

Each of the following weakens the argument EXCEPT

The correct answer will **not weaken**. It might **strengthen**, but more often it will have **no impact** on the argument. The incorrect answers may weaken in varying degrees and in ways that are uncommon on normal **Weakening Questions**: the incorrect answers may **disconfirm evidence** or provide some small amount of data that casts doubt on the conclusion. If an answer choice weakens in any way, it must be incorrect.

Question: June 2007, Section 2, Question 19

Evidence/Effect

*The Land Party achieved its only national victory in Banestria in 1935
It received most of its support from rural and semirural areas, and most of the
population lived in these areas.*

The economic woes of those years hit these groups the hardest.

Conclusion/Cause

The Land Party success is due to the party's focus on the concerns of these groups and the depths of the economic issues facing them.

(A) is CORRECT because it has **no impact** on the argument. If the choice had stated that “*in preceding elections (when the party was not successful) the Land Party made no attempt to address the economic concerns of distressed rural groups*”, then this choice would have been an example of a **No Cause, No Effect Strengtheners**.

(B) **strengthens** because it **strengthens the connection** between voting and parties that focus on problems facing voters.

(C) **strengthens** because it states that whenever there was distress in the agricultural sector the Land Party had ‘*most of its successes.*’ **Cause, therefore Most of the Effect Strengtheners**.

(D) **strengthens** because it states that parties that did not address these issues did not have electoral success in 1935. The **No Cause, No Effect Strengtheners**.

(E) **strengthens** because it **strengthens the connection** between economic distress and voting.

Question: Preptest 24 (December 1997), Section 2, Question 4

Evidence/Effect

Quitting smoking is stressful and leads to weight gain.

In a study, half of those attempting to quit were assigned to a smoking cessation program alone, and the other were assigned to the same program plus fifteen weeks of aerobic exercise. After one month, none in the first group had quit, but 40 percent of the second group had quit.

Conclusion/Cause

Replacing smoking with a healthy activity can help people quit smoking.

(A) **Strengthens** by establishing that exercise helps mitigate one of the negative effects of quitting smoking, weight gain.

(B) **Strengthens** by **improving the quality of the study** by **establishing similarities between the two study groups**.

(C) is **CORRECT**. The answer choice is about nonsmokers who exercise. It has **No Impact** on this argument about quitting smoking.

(D) **Strengthens** by establishing that exercise helps mitigate another of the negative effects of quitting smoking, stress.

(E) **Strengthens** by **improving the quality of the study** by **providing further findings of the study**.

Question: Preptest 24 (December 1997), Section 2, Question 19

Evidence/Effect

In Australia, the population that is of driving age has increased but the number of fatalities has declined.

Conclusion/Cause/Explanation

Drivers in Australia have become more skillful

(A) This answer choice **weakens** by establishing an **Alternative Explanation** for the declining fatalities: a mandatory seat-belt law.

(B) This answer choice **weakens** by establishing an **Alternative Explanation** for the declining fatalities: better roads.

(C) This answer choice **weakens** by establishing an **Alternative Explanation** for the declining fatalities: less driving.

(D) This answer choice **weakens** by establishing an **Alternative Explanation** for the declining fatalities: better emergency hospital facilities.

(E) **CORRECT.** This answer choice strengthens the argument by providing an explanation for the explanation proposed by the argument: the mandatory driver education would explain why Australia now has more skillful drivers.

Question: Preptest 24 (December 1997), Section 2, Question 20

Evidence

Distinct cultures differ in their moral codes

Conclusion

As long as there are distinct cultures, there are no shared values across cultures.

The conclusion can be expressed as a **conditional statement**: “as long as” introduces a **sufficient condition**.

Distinct Cultures → ~~Shared Values~~

To **weaken** a **conditional statement**, one must provide evidence that **logical opposite** of the **conditional statement** is true. The **logical opposite** of that **conditional statement** is

Distinct Cultures and Shared Values can coexist

Or

Distinct Cultures + Shared Values

An answer choice that describes a world in which there are **no distinct cultures** will have **no impact** on the argument. For this reason, (B) is **CORRECT**.

If this discussion of **logical opposites** is at all confusing, you must review the discussion of **logical opposites** in the **Inferences II** chapter.

(A) and (D) challenge the **evidence**, the ‘*anthropological studies*.’ We would not expect a correct answer to a **Weakening Question** to so explicitly challenge the evidence, but that is common for the incorrect answer to a **Weaken (EXCEPT) Question** to do so.

(C) and (E) challenge the relationship between the evidence about ‘*moral codes*’ and the conclusion about ‘*shared values*.’

Question: Preptest 24 (December 1997), Section 2, Question 7

(A) is CORRECT because it **strengthens** the argument.

Question: Preptest 24 (December 1997), Section 3, Question 22

Evidence

The number of claims for job-related injuries rose after the factory closed.

Conclusion

Those who filed the claims did not deserve the benefits.

The incorrect answers **weaken** by providing a reason why the claims rose after the factory closing (**explaining the evidence**) even if those filed them deserved the benefits (**undermining the conclusion**).

(C) is CORRECT because it **strengthens** the argument.

Question: Preptest 29 (October 1999), Section 1, Question 3

(C) is CORRECT because it very slightly **weakens** the argument.

(A), (B), and (D) establish three ways in which gasohol is better than gasoline.

(E) might not seem to have much impact, but when viewed in conjunction with the final sentence of the argument, it too establishes a way in which gasohol is better than gasoline.

Question: Preptest 29 (October 1999), Section 4, Question 20

Evidence/Effect

Amphibian populations are decreasing worldwide.

The ozone layer has been continuously depleted for the last 50 years.

Amphibian populations and their eggs are vulnerable to UV-B radiation, which is blocked by atmospheric ozone.

Conclusion/Cause

The depletion of the ozone layer is the primary cause of the decline of amphibian populations.

(A) is **CORRECT** because it has **No Impact**.

(B) **strengthens** because it establishes that organisms **less** vulnerable to the **cause** experience **less** of the **effect**: A **Less Cause, Less Effect Strengthener**.

(C) **strengthens** because it establishes that **wherever the effect exists** ('all of the areas in which the amphibian population is declining'), the **cause exists**. An **Effect, therefore Cause, Strengthener**

(D) **strengthens** because it **Removes a Competing Explanation** for the decline in amphibian populations: a loss of natural habitat.

(E) strengthens because it establishes that **whenever the cause exists** (the 'last 50 years'), the **effect exists**. A **Cause, therefore Effect Strengtheners**.

Question: Pretest 33 (December 2000), Section 1, Question 20

Evidence

On the islands off the coast of Norway there were no cave paintings of sea animals, and the painters would have needed to eat such animals to make the journey to the islands.

Conclusion

The theory that the cave painters painted their current diets is incorrect.

The question asks for an answer that does **not weaken** the argument **against the theory**. So four answer choices will **weaken the argument against the theory**.

(A) **weakens the argument against the theory** by establishing that while living on the islands, the cave painters' "current diet" consisted of land animals.

(B) **weakens the argument against the theory** by establishing the **evidence** that would support the theory **might not have survived**. This is always a relevant factor in arguments that cite prehistoric evidence.

(C) **CORRECT**. This answer choice has **no impact**. You might be tempted to see (C) as one that strengthens the theory so long as answer choice (A) is true. You must evaluate the answer choices independently. On its own (C) does nothing because it does not address the argument's crucial evidence: the paintings' absence of sea creatures.

(D) **weakens the argument against the theory** by establishing a means by which the cave painters would not have "needed to the sea animals." Once again, weakeners that explicitly **challenge the evidence** are common on **Weaken (EXCEPT)**

Questions.

(E) **weakens the argument against the theory** by establishing that the cave painters did not even "make the long journey to and from the islands."

Paradox Questions

The final major question type in the **Additional Information** category are **Paradox Questions**. The stimulus contains a **paradox**, which is an **apparent contradiction**. The correct answer will **resolve the paradox**: it will establish a claim that makes the information in the stimulus seem more reasonable.

Such questions are in the Additional Information category. They are similar to **Strengthening and Weakening Questions** in 5 major ways:

- (1) The correct must provide **new information**. Any answer choice that merely repeats what was already stated in the stimulus will be incorrect.
- (2) At issue is not whether the answer choice is, or is likely, to be true. Most questions use the phrase “**if true**” when referring to the answer choices. This means that at issue is **not** the answer choice’s **truth**, but the choice’s **impact**. So, like answers to **Strengthening and Weakening Questions**, **strong language is never a problem and is usually an asset**.
- (3) Such questions usually involve **cause and effect** relationships. Correct answers very often establish another **factor**, unaddressed by the stimulus, that **explains** the puzzling phenomenon.
- (4) Because the correct answer is supposed to **make more reasonable** what is in the stimulus, the **Paradox Questions** are actually very similar to **Strengthening Questions**, the correct answer to which **makes the argument more reasonable**. Most Paradox Questions follow a fact set, not an argument. Some, however, do follow an argument. These **Paradox Questions** are often indistinguishable from **Strengthening Questions**. This inability to distinguish the two types is not a problem, however, because the criteria for the correct answers to the two types is so similar.
- (5) To answer a **Paradox Question**, one must understand in simple terms the paradox to be resolved. However, predicting the content of the correct answer will prove very difficult. This is another similarity: one must understand the **conclusion drawn**, the **evidence that supports the conclusion**, and perhaps **the assumptions made in the argument** to answer a **Strengthening or Weakening Question**, but one should never spend much time predicting the content of the correct answer.

*You **must predict** what the correct answer **will do**, **not** what the correct answer **will be**.*

Question: June 2007, Section 2, Question 25

Evidence

The French Academy was a major financial sponsor of painting and sculpture in 19th century France. The Academy discouraged innovation; in the 19th century there was little innovation in sculpture, yet a remarkable degree of innovation in painting.
Paradox to be Explained

Why was there little innovation in sculpture but “remarkable” innovation in painting?

This question requires that one explain a difference between sculpture and painting. Any answer choice that fails to distinguish the two arts forms or suggests they are similar in some way will be incorrect.

(A) This answer choice establishes a difference between painting and sculpture, but the choice **makes the difference in the stimulus less reasonable**: why would greater support from the “*innovation-discouraging*” Academy lead to greater innovation in painting? This answer choice has an **Opposite Impact**.

(B) This answer choice starts out promisingly, but it eventually suffers from the same problem as (A): why would “*more support*” to painters lead to greater innovation?

(C) **CORRECT**. This answer choice **makes the difference in the stimulus more reasonable**, because it explains how painters could produce their work without the “*innovation-discouraging*” support of the French Academy.

(D) This answer choice has **no explanatory power**. It has **no impact** on the stimulus.

(E) This answer choice establishes a similarity between painters and sculptors. Because the correct answer must **explain a difference**, this answer choice has an **Opposite Impact**.

Question: June 2007, Section 3, Question 2

Many **Paradox Questions** are **EXCEPT Questions**. All the incorrect answer will help explain the paradox; the correct answer will have no explanatory power (**No Impact**) or will make the situation in the stimulus less reasonable (**Opposite Impact**.)

(A) is **CORRECT** because it has an **Opposite Impact**: if the new heater uses a smaller percentage of Jimmy’s household gas, why would his bills have increased?

(B) – (E) all provide a factor that helps explain the higher bills.

Question: Pretest 24 (December 1997), Section 2, Question 18

Evidence

The total funding for the wetlands, adjusted for inflation, is three times what it was 10 years ago.

The total area of wetlands needing funding has increased only twofold.

Conclusion

Government funding is inadequate and should be increased.

Why should funding be increased when it has risen at a faster rate than the lands needing protection?

This question could be classified as a **Strengthening Question**, but there is no evidence in the stimulus that supports the conclusion: all the evidence **undermines** the conclusion! The question asks you to “reconcile” the conclusion with evidence that undermines it, so it is a **Paradox Question**.

(A) Seems to provide an explanation for the inadequacy of government measures, but if “mismanagement” were the problem, why should the government funds be increased? That actually sounds like a terrible idea if the funds are so poorly used. This answer choice, tempting at first, actually has an **Opposite Impact**: it makes the conclusion **less reasonable**.

(B) This answer choice discusses a relevant factor to government funding: it actually has very little impact because it is **Boring**! Most employees in most jobs in the world expect their salaries to increase greater than the rate of inflation: I hope that would be the case for scientists working for the government. An answer choice that is so uninteresting by **real world standards** is bound to have a **Lesser Impact** than another answer choice. No matter what else you have heard, **real world standards** apply on the LSAT!

(C) This choice seems to have an **Opposite Impact**: if the research has been so successful, why would more money be needed?

(D) This answer choice has **No Impact**: it does not explicitly address “funding.”

(E) **CORRECT**. If funding was almost nothing ten years ago, then 3 times almost nothing is still a very small number!

Question: Preptest 24 (December 1997), Section 3, Question 14

(C) is **CORRECT**. It has **no explanatory power**, because what needed explaining was the “summer drop in sales”, not an increase in costs and a potential drop in profits.

Question: Preptest 29 (October 1999), Section 1, Question 10

Paradox

Why would those who received the vaccine show symptoms of hepatitis A when the vaccine is completely effective at preventing infection with hepatitis A?

(A) The “placebo” is not that important here: it is unsurprising that those who took the placebo might contract the virus.

(B) This comparison does not help explain why those vaccinated contracted the virus.

- (C) Once again, this comparison does not help explain why those vaccinated contracted the virus.
- (D) CORRECT. This answer choice explains that some of those who received the vaccine were infected before receiving the vaccine. Always remember on the LSAT, and in real life, that viruses can be dormant!
- (E) This is interesting, but it does not explain why needs explaining.

Question: Preptest 29 (October 1999), Section 1, Question 25

(B) is **CORRECT**. It has an **Opposite Impact**. The difference that needed explaining was that the Tasmanians did not have the technology, like the boomerang, that the Australians possessed. If the Tasmanians invented the boomerang, the situation in the stimulus becomes even more puzzling.

Question: Preptest 29 (October 1999), Section 4, Question 19

Another survey question: because there are so many potential problems with surveys, surveys are very common among the **EXCEPT** question types!

Paradox

*Even after a decade of mergers and downsizing, surveyed workers feel **no less secure** in their jobs in 1994 than they did in 1984.*

- (A) Establishes that the workers surveyed were **not representative** of workers who experienced the greatest insecurity.
- (B) is CORRECT. What employees think of others' security has **no explanatory power**.
- (C) When an event is "*widely anticipated*", it is less likely to make workers feel insecure.
- (D) If the downsizing was completed in 1985, then by 1994 most workers probably would have recovered their sense of security.
- (E) If there was greater optimism overall in the country in the mid-1990s, that would explain the greater sense of security.

Preptest 30 (December 1999), Section 2, Question 12

Paradox

Antilock breaks are designed to make driving safer, but people who drive cars with antilock breaks have more accidents than those who drive cars not equipped with such breaks.

(A), (B), and (D) are usually eliminated quickly. It is easy to see how "*careless driving*", "*malfunctioning breaks*", and "*improper usage*" would make drivers of cars with antilock breaks more likely to have an accident.

(C) establishes that antilock break maintenance is more expensive than is regular break maintenance. Many people might forgo this expensive maintenance.

(E) is **CORRECT**, but it is often not chosen because it points out a problem with antilock breaks. It is correct, however, because it **does not explain why** drivers of cars with antilock breaks have more accidents than other drivers. This choice would help explain why antilock breaks fail to prevent some of the most serious accidents. But it does not help show why antilock breaks might be worse than regular breaks.

Question: Pretest 33 (December 2000), Section 1, Question 8

(E) is **CORRECT**. This answer helps explain **how** the ant survives in the midday sun, but **not why** the ant chooses to scavenge at that time.

Question: Pretest 33 (December 2000), Section 1, Question 14

Why did the parliament condemn the prime minister for promising to commit military personnel when the parliament supported the intervention?

In other words, the correct answer must explain why the parliament is angry with the person (*the prime minister*) not the policy (*the military intervention*).

(B) is **CORRECT**. This answer choice establishes a reason why the parliament would condemn the prime minister even if the parliament supports the proposed military intervention.

(A) **No Impact** – The UN did not compel the nation to commit military forces.

(C) **No Impact** – Focuses on the policy, not the prime minister.

(D) and (E) address “*public opinion*.” It is not wrong, in fact it usually is correct, for a correct answer to introduce a new factor. But “*public opinion*”, as discussed here, would only be relevant if the parliament disagreed with the *policy* of military intervention. These answer choices also have **No Impact**.

Question: Pretest 33 (December 2000), Section 3, Question 1

Why do the cliff-exposed cedars, which receive fewer nutrients than the forest cedars, live so much longer than the forest cedars?

(B) is **CORRECT**. It **explains** why it’s hard out there for a forest cedar.

Question: Pretest 33 (December 2000), Section 3, Question 3

Why is the Stillwater Marsh so seldom seen, when it is larger and more common than other marsh birds?

(B) is CORRECT. It has an **Opposite Impact**: the “*harsh and repetitive*” calls would make the Stillwater Marsh easier to find.

Missing Information Questions

This rare question asks for an answer the choice that describes the most relevant information to the argument. The correct answer does not explicitly strengthen or weaken; rather, it describes information or poses a question. If we had that information or had the answer to that question, the argument would be substantially strengthened or weakened.

This question type is called a “*crux question*” by another test preparation program because the question asks for a **crucial** piece of missing information. These questions had all but disappeared, but there was at least one in 2013.

Question: Preptest 24 (December 1997), Section 2, Question 16

Evidence

The rate of extinction for North American fishes is increasing.

Conclusion

There is evidence that the rate of extinction of animal species is accelerating.

The conclusion is a **generalization** based on evidence that might, or might not, be **representative** of animals in general. Therefore (A) is correct.

(B) and (D) are **relevant** to the argument: the exact changes in the fish populations could be interesting. But they are **less relevant** than is (A), which addresses the argument’s **most prominent assumption**: the fishes are representative. If we knew the answers to the questions posed in (B) and (D), we might be able to more strongly claim that fish populations in the 20th century were, or were not, radically decreasing. At best these answer choices **address the evidence**. It is not always wrong to do so, and many of the incorrect answers on **Missing Information (EXCEPT) Questions** will address the evidence. However, if we assume the evidence is airtight and fish populations have significantly decreased in the 20th century, there is still a very large logical leap between *fish* and *animal species in general*. Your answer should address the evidence **only when** there are no large logical leaps, no strong assumptions, in the argument.

(C) and (E) are **irrelevant** to the argument.

Principle Questions

A **principle** is a general claim that can serve as the basis for an argument. **Principle Questions** test your ability to distinguish **sufficient and necessary conditions** and to distinguish **descriptive and prescriptive statements**. Much ink has been spilt about the distinction between **sufficient and necessary conditions**. If you need a refresher, review the lessons on **Must Be True Inference Questions** and **Assumption Questions**.

The distinction between **descriptive and evaluative statements** was briefly discussed in the lesson on **Inference Questions**, although those terms were not used.

A **descriptive statement** *describes* the world. It must be true *if and only if* there is objective evidence proving it true.

The chair is blue.

Smoking causes cancer.

John drove after drinking ten martinis and ran over and killed a pedestrian.

An **evaluative statement** *judges* the world. An **evaluative statement** must be true *if and only if* there is objective evidence **and an aesthetic, moral, or legal principle** proving it true.

The blue chair is beautiful.

One should not smoke.

John is guilty of unintentional murder.

In the lesson on **Inferences**, we discussed how an answer choice to a **Must Be True Question** that contains an **evaluation** – an aesthetic, moral, or legal judgment – without a corresponding principle should be considered an **Unsupported Judgment**.

Doing principle questions is about recognizing **Unsupported Judgments**.

Principle Questions can be divided into two categories.

A Principle is in The Stimulus.

The Answer Choices are All Principles

When the ***Principle is in the Stimulus***, there are three subtypes:

- 1) *The stimulus contains a principle only*: the correct answer is a fully supported judgment. This is a ***Principle Only Question***.
- 2) The stimulus contains an argument or situation relies on a principle, although the principle is not explicitly stated. The correct answer must contain a similar argument that illustrates – is an example of – that principle. This is a ***Principle – Illustrates Question***.
- 3) The stimulus contains a principle and an application based on that principle: the correct answer provides evidence that ensures the application is a ***properly supported conclusion***. This is a ***Principle – Application Question***.

The second of these subtypes was formerly rare but has become more common since June 2007. In either of these subtypes, diagramming the principle as a ***conditional statement*** is usually necessary.

When the ***Answer Choices are Principles***, the stimulus is an ***argument*** that has an ***Unsupported Judgment*** as a conclusion. The correct answer provides the moral, aesthetic, or legal justification for that conclusion. There are once again two subtypes:

- 1) The question asks for a principle that ***most justifies***, or ***most supports***, the argument's conclusion. These questions are very much like ***Sufficient Assumption Questions***: the correct is usually a ***conditional statement***, and the correct answer may support a conclusion much stronger than the one drawn in the stimulus. So long as it is *enough* to prove the conclusion true, it is the best answer. This is a ***Principle – Justify Question***.
- 2) The question asks for a principle to which the ***argument conforms*** or which ***underlies the argument***. These questions are very much like ***Necessary Assumption Questions***: the correct answer is a ***principle*** on which the argument ***relies***. The correct answer may be weaker than expected, but *it cannot be any stronger* than the argument allows. This is a ***Principle – Conforms Question***.

When ***Principle – Justify*** and ***Principle – Conforms*** Questions are analyzed, the ***evaluative*** part of their conclusions will be bolded.

This lesson assumes you have taken June 2007 and Pretests 24, 29, 30, and 33. It covers all the ***Principle Questions*** from those tests.

Question: June 2007, Section 2, Question 7

The principle is in the stimulus. There is no judgment in the stimulus, so the correct answer must be a judgment supported by the stimulus. This is a **Principle – Only Question**.

The ethicist makes the claim that “*advanced moral motivation*” is “*based solely on abstract principles*.” The ethicist contrasts this motivation with “*self-interest*” or “*a desire to conform*.”

Self-Interest OR Desire to Conform $\rightarrow \sim(\text{Advanced Moral Motivation})$
Advanced Moral Motivation $\rightarrow \sim(\text{Self-Interest}) + \sim(\text{Desire to Conform})$

The correct answer must describe an individual who is guided by this “*advanced moral motivation*,” so this individual must not be guided by “*self-interest*” or a “*desire to conform*.”

- (A) Bobby is motivated by a *desire to conform* to the society norm of not appearing stingy.
- (B) Wes is motivated by a *self-interested* desire to improve his employer’s opinion of him.
- (C) Donna’s inaction was motivated by a *self-interested* desire to avoid retaliation.
- (D) **CORRECT.** Jadine is motivated by the abstract principle that “*protecting the environment is always more important than profit*.” There is no mention of selfish motivations or a desire to conform.
- (E) Leigh is motivated by a desire to *conform to a social norm*, the pressure of her colleagues.

Question: June 2007, Section 3, Question 14

This is a **Principle – Conforms Question**.

The evidence fully supports the **Intermediate Conclusion**:

Open-Source software better matches the values of scholarship.

The final premise:

Scholarship is central to the mission of universities.

Conclusion / Unsupported Judgment

*Universities **should** use only open-source software.*

The correct answer must establish what *universities should do*.

(A) establishes what universities **should** do, but this choice **Fails to Connect to The Evidence**: the evidence never established that open-source software was the “most advanced.”

(B) establishes what universities **should** do, but this choice **Fails to Connect to The Evidence**: the evidence never established that open-source software is the “least expensive.”

(C) **CORRECT**.

(D) fails to establish what universities should do: it merely establishes that open-source software is the “most efficient.”

(E) This answer choice strengthens the argument, but at best it establishes that proprietary software **should not** be used. It does not establish which software a university **should** use.

Question: June 2007, Section 3, Question 24

The answer choices are principles. The question asks for a principle that “most helps to justify” the argument. This is a **Principle – Justify Question**.

This argument has a somewhat confusing structure.

Main Conclusion

Intermediate Conclusion, introduced by the **Evidence Word** “for”

Premise, introduced by the **Evidence Word** “after all”

Premise

Institutions are merely collections of people.

Intermediate Conclusion

Romantics misunderstand the causal relationship between people and institutions.

Main Conclusion / Unsupported Judgment

*Romantics are wrong – people are **born evil**, they are **not made evil by imperfect institutions**.*

The argument, rarely for an argument before a **Principle Question**, makes an **Unsupported Judgment** that is also a **causal conclusion**: that individuals, born evil, cause institutions to imperfect. The **Intermediate Conclusion** states that romantics *misunderstand the causal relationship* between people and institutions, yet it does not define that “causal relationship.” It states as its only premise that “*institutions are collections of people*”: the argument assumes that the “evil” or “imperfections” originate from the “people,” not the “institutions.”

- (A) This does not establish whether the “evil” originates with the “people” or the “institutions.”
- (B) This does not establish whether the “imperfections” originates with the “people” or the “institutions.”
- (C) This strengthens the argument very slightly, but is far from establishing that people are inherently evil.
- (D) This does not establish whether the “values” originate with the “people” or the “institutions.”
- (E) **CORRECT.** This answer is a generalization, far broader than we would expect a **Strengtheners** or a **Sufficient Assumption** to be. **Principles, however, are by definition general.** And this answer choice eliminates the competing **causal claim** that the “evil” or “imperfections” originate with the institutions.

Also, interestingly enough, the correct answer criticizes the competing causal claim as one that commits a **Flaw of Division**, which occurs when an argument concludes that the *whole does determine the properties of the component parts*.

Question: Preptest 24 (December 1997), Section 2, Question 9

This is a **Principle – Justify Question**.

Evidence

The regime of Q was made of ordinary people who executed many in pursuit of what is unrealizable.

Conclusion / Unsupported Judgment

*Some of the ordinary people of Q were **murderers**.*

To call an act a *murder* is to call an act a morally wrong killing. This argument needs a principle that defines what constitutes *murder*.

(C) is CORRECT.

All of the other answer choices fail to define what constitutes “murder,” so they fail to provide a principle that justifies the conclusion.

Also, (A) is an incoherent answer choice: there can be no such thing as a *justified murder*.

Question: Preptest 24 (December 1997), Section 2, Question 22

This is a **Principle – Conforms Question**.

Evidence

At the time Copernicus proposed his system, his and Ptolemy's systems were equally consistent with the available evidence, yet Copernicus' system was simpler.

Conclusion / Unsupported Judgment

*Copernicus' system was the **superior theory** at the time it was proposed.*

The correct answer must define what constitutes a "superior theory."

Only (A), (B), and (D) define a "superior theory."

(A) The argument appeals to the Copernican theory's "simplicity," but it never goes so far as to declare that simplicity should be the "**sole deciding factor**." **Extreme Language** is an **Elimination Justification** in a **Principle – Confirms Question**.
(B) This answer choice **Fails to Connect to the Evidence**: at the time the Copernican theory was proposed, both the Copernican and Ptolemaic theories accounted for the known evidence equally, so neither was more "likely to be true."
(D) **CORRECT**. This answer choice establishes a **precise connection** between the argument's evidence – both theories are equally justified by current observations ("Other things being equal") – yet one theory is simpler and therefore superior. (the "more complex" is "inferior.") The correct answer to a **Principle – Confirms Question** must establish no more, and will usually establish no less, than this **precise connection**. In this way these Confirms Questions are very similar to many **Necessary Assumption Questions**.

Question: Preptest 24 (December 1997), Section 2, Question 25

This is a **Principle – Justifies Question**.

Evidence

The publisher made a false claim, but it was a claim that "everyone knows" must be false.

Conclusion / Unsupported Judgment

*The publisher was **not unethical** in this case.*

Like **Sufficient Assumption Questions**, most **Principle – Justify Questions** have a very predictable formula:

$$\begin{array}{c} \text{Evidence} \rightarrow \text{Judgment in Conclusion} \\ \text{or} \\ \sim(\text{Judgment in Conclusion}) \rightarrow \sim(\text{Evidence}) \end{array}$$

So, the correct answer will be

Everyone Knows the Claim is False $\rightarrow \sim(\text{Unethical})$

or

Unethical $\rightarrow \sim(\text{Everyone Knows the Claim is False})$

Many of the incorrect answers provide sufficient or necessary conditions for what is unethical. Unless you formulate a precise prediction, you will spend way too much time distinguishing these answer choices.

(A) is **CORRECT**. It is closest to this prediction.

(B) This answer establishes a **sufficient condition** for what is “unethical.” The choice establishes a **sufficient condition** for the **negation** of the argument’s conclusion. It takes the form $X \rightarrow \sim(\text{Judgment in Conclusion})$. **Such an answer choice, in a Sufficient Assumption or Principle - Justifies Question, can NEVER be correct.**

Such an answer can **never** prove the conclusion true. If X is true, the conclusion is false. If X is false, the conclusion could be false. (It would be **Assuming the Converse** to assume $\sim X \rightarrow \text{Judgment in Conclusion}$). If X is unknown, the conclusion could of course be false. In this case, X is unknown: we do not know whether the publisher “derived a gain” in this instance. It is important, however, to recognize that this answer choice has the **Unacceptable Formula: $X \rightarrow \sim(\text{Judgment in Conclusion})$** .

(C) This answer choice can be diagrammed “*Unethical* \rightarrow *Those who Believe Suffer Hardship*.” This answer choice takes the formula $\sim(\text{Conclusion}) \rightarrow X$. This is a correct answer when we know that X is false. In this case, X is unknown: we do not know whether any suffered any hardship.

(D) This answer choice can be diagrammed “*Unethical* \rightarrow *Acting on Claim is Possible*.” Like (C), this answer choice takes the formula $\sim(\text{Judgment in Conclusion}) \rightarrow X$. This is a correct answer when we know that X is false. In this case, X is unknown: even if “everyone knows” a claim is false, it is still “possible” that some idiot will act on that claim.

(E) This answer choice has the **Unacceptable Formula: $X \rightarrow \sim(\text{Judgment in Conclusion})$** . The phrase “in at least those cases” indicates a sufficient condition in this sentence.

Always immediately eliminate answer choices with the **Unacceptable Formulas!**
There is one more **Unacceptable Formula**:

***Judgment in Conclusion* $\rightarrow X$**

No matter what condition X is, it can never make the conclusion valid. If X is true, the conclusion could be false. If X is unknown, the conclusion could be false. If X is false, the conclusion must be false.

Preptest 24 (December 1997), Section 3, Question 20

Evidence

*The Pinecrest Animal Shelter raised more funds than were needed for their repairs.
The Shelter plans to donate the funds to other animal shelters.*

Conclusion / Unsupported Judgment

*The Shelter **should** obtain permission from the donors.*

The question is somewhat confusing: the correct answer must “*help to justify the position advocated above*” (justify the **Unsupported Judgment**) and “*place the least restriction*” on the shelter (allow them to donate the funds to other shelters if the donors permit it).

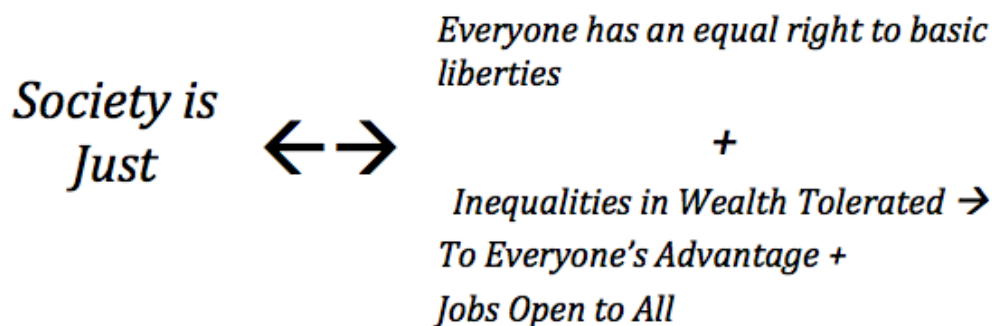
Because the conclusion contains an **Unsupported “Should,”** the correct answer must contain the word **should** or a synonym for it.

- (A) This answer choice does not allow the Pinecrest Animal Shelter to donate the funds to other shelters.
- (B) CORRECT –The word **should** makes this choice a strong contender. The first part of the answer choice seems to weaken the argument, but the second part is what is relevant: because it is impossible to spend the funds on the original purpose, the choice establishes that the Shelter **should** consult the donors.
- (C) This answer choice does not allow the Pinecrest Animal Shelter to donate the funds to other shelters.
- (D) This choice does not even allow the donors to give permission to the Shelter to donate the funds.
- (E) This answer choice contains the word **should**, but it contradicts the argument!

Pretest 24 (December 1997), Section 3, Question 24

This is a **Principle - Only Question**

The **when and only when** indicates that the principle must be diagrammed with a double-arrow.



If you have any uncertainties about this diagram, you must review the **Conditional Reasoning/Must Be True** sections of the Inferences Chapter.

You might notice that, in this question as in reality, societies are more likely to be **unjust than just**. If there is any inequality in basic liberties, any inequality in wealth that is not to everyone's advantage, or any inequality-producing jobs not open to all, it must be concluded that the society is not **just**.

(A) This seems like a great society: know that the good jobs are available to **most**, but we do not know that these jobs are available to **all**! So we cannot say the Society S is just.

(B) We know that there are inequalities in wealth in this society, but we do not know that they are **not** to everyone's advantage or that the good jobs are **not** open to everyone. So we do not have enough information to conclude that Society S is **not just**.

(C) We do not know whether this society offers equal rights to basic liberties.

(D) **CORRECT**. By creating inequalities to basic liberties, this society violates one of the necessary conditions of being **just**. This is enough to conclude that this **Society S is not just**.

(E) We do not know whether these inequalities are too everyone advantage.

Preptest 24 (December 1997), Section 3, Question 26

Evidence

An elected government rightfully supported the arts, but some artists have produced work that is offensive to taxpayers.

Conclusion

*No taxpayer has been treated **unjustly** by this funding, even if they find the art objectionable.*

(B) is CORRECT. Only (B) establishes the funding of the arts was justified (“**warranted**”).

(A) gives legitimate power to the taxpayers, whereas the argument gives legitimate power to the elected government.

(C) **Does Not Connect to the Evidence**: we do not know if a majority of constituents support the funding of the arts.

(D) The argument is not about how taxpayers **should** vote.

(E) The argument is not about denying taxpayers the right to complain.

Question: Preptest 29 (October 1999), Section 1, Question 19

A question that asks for a “*principle that underlies*” is a **Principle – Conforms Question**.

Evidence

*The manager was aware of the contractor’s typical delays.
The manager should have planned for this contingency*

Conclusion / Unsupported Judgment

The manager is to blame for the lost business

The conclusion assigns “*blame*” to the manager. The correct answer must address what a manager’s responsibilities are.

(A) **CORRECT**.

(B) This puts the blame entirely on the contractor.

(C) This assigns a duty to the manager that is not specifically required by the argument.

(D) This **Does Not Connect to the Evidence**: we have no evidence that the manager “*directly supervises*” the contractor.

(E) The “only a manager” part of this answer choice is **Unnecessarily Strong** – while this answer choice puts the blame entirely on the manager, the argument allowed for the contractor to be blameworthy as well. The choice is therefore too strong for the argument, which is an Elimination Justification for a **Principle – Conforms Question** (but not a **Principle – Justifies Question**).

Question: Preptest 29 (October 1999), Section 1, Question 22

This is a **Principle – Justifies Question**.

Evidence

The government claims that the nuclear power plants are safe, but by limiting the nuclear plants' liability the government is acting as if the plants are unsafe.

Conclusion / Unsupported Judgment

The public's fear that the plants are unsafe is well-founded.

The correct answer must establish that a nuclear accident is, if not likely, a serious possibility.

(A) **Does Not Connect to the Evidence:** the government never claimed the plants were “unsafe.”

(B) **Does Not Connect to the Evidence:** there is no evidence that the government or the nuclear industry would “stand to benefit financially” from “such an occurrence” (a nuclear accident).

(C) **Does Not Connect to the Evidence:** the argument never establishes, and in fact denies, that the nuclear plants are “safe.” Also, at issue is not what is in the “best interests of the public.”

(D) CORRECT. This answer choice can be diagrammed.

Government Acts to Prevent a Situation → A Real Danger the Situation Can Arise.

Because has “acted”, the conclusion that the plants are unsafe, that there is “a real danger,” is fully supported.

(E) This answer choice **Runs Counter to the Argument:** the argument is not attempting to justify the government’s actions; rather, the argument is claiming the government’s actions are disingenuous.

Question: Preptest 29 (October 1999), Section 4, Question 10

This is a **Principle – Illustrates Question**. For these questions you must identify the principle that the passage *illustrates*.

The principle is that knowledge gained from “direct experience” can be preferable to “expert” opinion, even if those experts have similar but different experiences (“are they themselves parents”).

(C) is CORRECT. Only this choice shows the preference for “direct experience” (“familiar with a mountain”) over experts with similar but different experiences (“experts unfamiliar with that mountain.”)

Question: Preptest 29 (October 1999), Section 4, Question 17

This is a **Principle – Conforms Question**.

Evidence

There is little correlation between accuracy and confidence in eyewitness identifications.

Certain factors can increase or undermine that confidence without affecting the accuracy of the identifications.

Conclusion / Unsupported Judgment

*Police officers **should** (are “well-advised” to) disallow lineups in which witnesses can hear one another identifying suspects.*

The **conclusion**, unlike most **Principle Question** conclusions, has a distinct **Unsupported Element**: witnesses “*hearing one another*.” The evidence establishes that “*certain factors*” can affect confidence; a good answer choice will establish that “*witnesses hearing one another*” is one of those factors. The **evaluative** aspect of the conclusion is actually less of an issue: it is *reasonable* to assume that police offices **should** disallow what could adversely affect a witness’ confidence.

(A) CORRECT. This answer choice establishes that *witnesses hearing one another* is one of those factors that could adversely affect confidence.

(B) **Does Not Connect to the Evidence**: the number of suspects is not addressed by the evidence.

(C) This answer choice is probably true, but it is **Irrelevant to the Argument**: the choice states nothing about how *witnesses hearing one another* can affect a witness’ confidence.

(D) This answer choice **Runs Counter to the Argument**: it establishes that police officers are more interested in confidence than in accuracy.

(E) This answer choice is probably true, but it is **Irrelevant to the Argument**: the choice states nothing about how *witnesses hearing one another* can affect a witness’ confidence.

Question: Pretest 30 (December 1999), Section 4, Question 23

This is a **Principle – Justify Question**.

Evidence

The journalists naively reported as fact what the director told them.

Conclusion / Unsupported Judgment

The journalists were as much to blame as the director for inflating the charity’s reputation.

(A) **Does not Connect to the Evidence:** the journalists do not work for a charitable organization.

(B) **Does not Connect to the Evidence:** we have no evidence the journalists “**knowingly** aid a liar by **trying** to conceal the truth.”

(C) **CORRECT.**

(D) **Does not Connect to the Evidence:** we have no evidence the journalists “*lied in order to advance their own career.*” Also, the answer choice **Runs Counter to the Argument:** the argument assigns **equal blame** to the journalists and the director, **not more blame** to the journalists.

(E) This answer choice **Runs Counter to the Argument:** the director “*accepted responsibility,*” but this choice wants to assign the director **less blame** than “*someone who tries to conceal his or her own wrongdoing.*” Also, it is not clear who this “*someone*” is.

Pretest 33 (December 2000), Section 1, Question 18

This is a **Principle – Conforms Question**.

Evidence

Space-based satellites can observe environmental problems and allow for intervention.

Conclusion / Unsupported Judgment

It is no wonder the environmentalists fail to consider the environmental damage wrought by the spacecraft.

The conclusion “*it is no wonder*” establishes that the argument *assumes* that it is normal for people to ignore negative consequences of acts that support their goals.

(A) is **CORRECT**.

(B) The argument is not about weighing the consequences of spaceflight.

(C) The argument is not about the “*usual*” consequences of “*technology.*”

(D) The argument never establishes that the spaceflight makes environmental problems “*worse.*”

(E) “*Often*” is **Unnecessarily Strong**.

Pretest 33 (December 2000), Section 1, Question 21

This is a **Principle – Justifies Question**

Evidence

Attacks on an opponent’s character do not confront the opponent’s argument but instead cast doubt on the opponent’s moral right to be in the debate.

Conclusion / Unsupported Judgment

*Attacks on an opponent's character **should** be avoided.*

Only (C) states clearly what “*should be avoided*”, so (C) must be **CORRECT**. The “do not confront *every* argument” is confusing, but if, as the evidence states, character attacks *do not confront the opponent's argument*, it is true that such attacks do not confront *every* argument.

(E) can be diagrammed

Character Questions Relevant → Questions of Character Should be Raised.

This is very close to the **Unacceptable Formula: $X \rightarrow \sim(\text{Judgment in Conclusion})$**

Preptest 33 (December 2000), Section 3, Question 6

This is a **Principle – Justify Question**.

Evidence

Art historians are now aware that the colors of the frescoes in the Sistine Chapel are not the original colors.

Conclusion / Unsupported Judgment

Art historians have concluded that the previous ***interpretation may no longer be appropriate***.

The correct answer must define what is an ***appropriate interpretation*** and connect it to ***colors***.

Only (C) does this. (C) is **CORRECT**.

Preptest 33 (December 2000), Section 3, Question 9

This is not, strictly speaking, a **Principle Question**. It is a **Strengthening Question** that follows an argument about a “*general principle of justice*.”

Evidence

Different communities that recognize the dignity and equality of all citizens will nevertheless settle on different provisions for the elderly.

Conclusion

General principles of justice are never sufficient to determine the details of social policy within a state.

To support the conclusion, one must provide evidence of two states with the **same** *general principles of justice* but **different** *social policies*.

Only (D) does this. (D) is **CORRECT**.

Proposition Questions.

The few questions that ask for a **proposition**, or **generalization**, supported by the claims in the stimulus are really just **Most Strongly Supported Inference Questions** where the correct answer is usually stated in general terms. As with all **Most Strongly Supported Questions**, the correct answer will be the one **most supported**, but it might be **not necessarily true**. As with all Inference Questions, remember your prominent **Elimination Justifications**:

Extreme Language
Runs Counter to Stimulus
Unsupported Causal Claim
Unsupported Comparison
Unsupported Element
Unsupported Judgment

Sorry if you were expecting an entirely new question type with lots of exciting examples. There is just not much new to say about **Proposition Questions**. To compensate for your disappointment, here is a picture of the late, great actor Robert Chew portraying Proposition Joe in the greatest television show that ever was.



Parallel Reasoning Questions

These questions are infamous. They can be so long that they fill a whole half of a page and consistently take more precious time than any other question type. Some students will skip them entirely, and that is not a bad tactic for those that have difficulty finishing the section.

These questions, however, should be studied by all! They teach us what the LSAT authors think is good, bad, and parallel reasoning.

Parallel Reasoning Questions always indicate whether the correct answer is to **parallel the argument** or **parallel the flawed reasoning**. When asked to **parallel the argument**, the argument in the stimulus is a reasonable one and you must find an answer choice that contains an argument that matches its **structure** as closely as possible: a **logical diagram** will be very useful and in some cases necessary to find the correct answer. When asked to **parallel the flawed reasoning**, you must find an answer choice that matches the **flaw**. In some cases, the **structure** of the argument in the correct answer will be different from that in the stimulus. But only one answer choice will have the same flaw.

When paralleling arguments that are **not** said to be flawed, **match the structure**.

When paralleling arguments that are said to be flawed, **match the flaw**.

Question: June 2007, Section 2, Question 2

The question asks you to parallel the “*flawed reasoning*,” to **match the flaw**.

The argument’s flaw is that it *assumes* a “*cross*” of extremes, dogs that “*bark a great deal*” and dogs that “*infrequently bark*,” will produce a balance, a “*moderate barker*.” Genetics do not work like that!

The correct answer must contain an argument that *assumes* a *combination of extremes* produces a *moderate* result.

(B) is CORRECT.

(A) This argument is flawed, but there is no *combination of extremes* in this argument.

(C) This is a good argument.

(D) This is a good argument.

(E) This argument is flawed, but there is no *combination of extremes* in this argument.

Question: June 2007, Section 2, Question 12

The question asks you to find an argument “*similar in reasoning*,” to find an argument that matches the **structure**.

When matching the **structure**, first focus on the conclusion in the argument in the stimulus. The conclusion drawn in the correct answer must match the conclusion drawn in the stimulus in three ways.

1) *Strength of language*

Some matches to **Some**, or what is equivalent, like **There are**

Most matches to **Most**, or what is equivalent, like **Majority**

All matches to **All**, or what is equivalent, like **Every**, **Each**, or **Any**

Not all matches to **Not All**, or what is equivalent, like **Some...not**

Can matches to **Can**, or what is equivalent, like **Could** or **May**

Probably matches to **Probably**, or what is equivalent, like **Likely**

Must matches to **Must**, or what is equivalent, like **Necessarily**

Cannot matches to **Cannot**, or what is equivalent, like **Impossible**

And so on....

2) *Conditionality*

If the conclusion drawn in the stimulus is a **conditional statement** (an **if...then**), the conclusion drawn in the correct answer must be a **conditional statement**.

If the conclusion drawn in the stimulus is an **unconditional statement**, the conclusion drawn in the correct answer must be an **unconditional statement**

3) *Descriptive* versus *Evaluative*

If the conclusion drawn in the stimulus is an **evaluative statement** (an aesthetic, moral, or legal judgment), the conclusion drawn in the correct answer must be an **evaluative statement**

If the conclusion drawn in the stimulus is **not an evaluative statement**, and is instead a statement that **describes** some objective features of reality), the conclusion drawn in the correct answer must be a **descriptive** statement.

When *paralleling the structure*, **do not focus on the order of the statements**. A **valid** conclusion can come at the beginning, middle, or end of an argument its position in no way affects the argument's **logical structure**.

Now let's look at the argument in the stimulus of this question

Evidence

A hypothetical situation is proposed of a promise to keep a confidence and a question that requires breaking that confidence.

Conclusion

*One **cannot be obliged to both** to answer all questions truthfully and keep all promises.*

The **valid** conclusion is based on a hypothetical situation and contains the strong words **cannot be both** and contains an evaluative claim about one's **obligations**.

(A) The conclusion in this answer contains the words **cannot be both** and an evaluative claim about one's **rights**. When the conclusion matches, read the entire argument. It contains similar evidence: two claims that proposes conflicting **rights**.

When taking timed LSATs and if an answer choice matches this closely, choose it and move on! When studying, it is important to read all the answer choices and understand why they are incorrect.

(B) The conclusion is "*Some politicians must deceive.*" It contains neither words equivalent to **cannot be both** nor an **evaluative claim**.

(C) The conclusion is "*We risk her criticism.*" It contains neither words equivalent to **cannot be both** nor an **evaluative claim**.

(D) The conclusion is "*Either the creditors did not have legitimate claims or the business did not have sufficient resources.*" This conclusion actually does contain a statement equivalent to **cannot be both**:

Either A is false or B is false = A and B cannot both be true

The conclusion is not a perfect match, but too close to eliminate the answer choice immediately. The evidence contains two **conditional claims** that can be connected and an unconditional fact. It is a good argument, like the stimulus, but not one about conflicting **rights** or **obligations**.

(E) The conclusion is "*We will have to keep our business hours as they stand.*" It contains neither words equivalent to **cannot be both** nor an **evaluative claim**.

Question: June 2007, Section 3, Question 20

This is a **Parallel – Flaw Question**.

Evidence

The local historical society, which opposes the demolition of the train station, is dominated by people who have no commitment to long-term economic well-being. Old buildings are an impediment to economic well-being.

Conclusion

We should accept the proposal to demolish the train station.

The argument **Appeals to the Bad Character/Motives of its Opponents**.

- (A) There are no “opponents” in this argument.
- (B) There are no “opponents” in this argument.
- (C) **CORRECT**. This argument **appeals to the bad motives of its opponents**, the evil beauticians!
- (D) Those who are said to be “opposed” to a proposal are actually in support of the conclusion!
- (E) There are no “opponents” in this argument.

Question: Preptest 24 (December 1997), Section 2, Question 5

This is a **Parallel – Flaw Question**.

Evidence

Ms. Tarnowski’s class collected the most cans of all the classes.

Conclusion

The student who collected the most cans was in Ms. Tarnowski’s class.

This argument commits a **Flaw of Division** – assuming that the **best class** must contain the **best individual**.

- (A) A reasonable argument.
- (B) A bad argument, but a different flaw: the conclusion should be “Some students at Milton Elementary School plays in both the band and the sings in the choir.”
- (C) A bad argument, but a different flaw: the argument **assumes** that a candy bar costs at most as much as a raffle ticket.
- (D) **CORRECT**.
- (E) A reasonable argument.

Question: Preptest 24 (December 1997), Section 2, Question 13

This is a **Parallel – Structure Question**.

Evidence

Carl's Coffee Emporium stocks only two decaffeinated coffees: French Roast and Mocha Java.

Yusef serves only decaffeinated coffee and the coffee he served last night was not French Roast.

Conclusion

If Carl still gets all his coffee from Carl's, he must have served Mocha Java.

The **valid** conclusion is **conditional**, based on evidence that eliminates a competing possibility.

(A) The conclusion is **conditional**, but the argument is **invalid**: it does not establish that the sedan **cannot** seat four people.

(B) The conclusion is **unconditional**.

(C) The conclusion is **conditional**, but the argument is **invalid**: it does not establish that Rosie *planned to take the October vacation*.

(D) **CORRECT**. The conclusion is **conditional** and the argument is **valid**, providing enough evidence to eliminate the possibility of *taking a job in sales*.

(E) The conclusion is **conditional** and the argument is **valid**, but the argument does not eliminate a competing possibility.

Question: Preptest 24 (December 1997), Section 3, Question 16

This is a **Parallel – Flaw Question**.

The argument, on the basis that no evidence has been found against K (the relevant evidence has disappeared), concludes that K is innocent of any wrongdoing. The argument *confuses an absence of evidence for a conclusion with evidence against a conclusion*. This flaw is subtype of the flaw of **Confusing What Weakens an Argument with What Weakens a Conclusion**, one of the **3 Most Common Flaws**.

(A) **CORRECT**.

(B) The conclusion "*The accusation should be discussed*" is a reasonable one.

(C) Another reasonable conclusion: *plagiarism* is a ridiculous charge if N's work was written before the other scholars.

(D) The conclusion "*The accusation seems justified*" *seems* reasonable: it is certainly more reasonable that the conclusion drawn in the argument.

(E) This argument does provide evidence that **weakens** an argument (there is *disagreement* about what constitutes the public interest) but then concludes that a conclusion is **false**. But this argument does not argue from an *absence of evidence*

and does not state that the *most relevant evidence was destroyed*, as does the argument in the stimulus and answer choice (A).

Question: Preptest 24 (December 1997), Section 3, Question 21

This is a ***Parallel – Structure Question***.

Evidence

*Electricity consumed in Millville is directly proportional to peak humidity on that day.
Average humidity this August was three points higher than it was last August*

Conclusion

More energy was consumed in Millville this August than last August.

This is a reasonable argument: the conclusion is ***valid***, an ***unconditional, legitimate comparison*** based on a ***direct proportion***.

(A) **CORRECT**. The argument states that art supplies are directly proportional to the number of students, and that the number of students rose 20 percent this year over the last year. Therefore, the ***comparison*** in the conclusion that *more art supplies were used last year than the previous year* is ***legitimate***.

(B) The conclusion is a ***comparison***. The argument, however, introduces sculpture classes in the second premise, but the number of sculpture classes is not part of the ***direct proportion***. The conclusion is therefore ***invalid***.

(C) The conclusion is ***conditional***.

(D) The conclusion is ***invalid*** because the argument does not establish this *greater number of students* is enrolling in a *greater number of classes*.

(E) The conclusion is a ***proportion***, not a ***comparison***.

Question: Preptest 29 (October 1999), Section 1, Question 13

This is a rare example of a ***Parallel – Structure (EXCEPT) Question***

Evidence

If few students come to school, no other factor in a school do any good.

Conclusion

The top priority of a school administration should be school attendance.

(E) is **CORRECT**. The evidence in this, and only this, choice does ***not*** establish, as do the arguments in the stimulus and in answer choices (A) – (D), that other factors are *no good* if the *top priority* in the conclusion is not satisfied.

Question: Preptest 29 (October 1999), Section 1, Question 23

This is a **Parallel – Flaw Question**.

As the argument contains **Quantity** statements such as **No**, **Most**, and **Some**, a diagram is required.

*Linda, a scientist: Scientist $\rightarrow \sim(\text{Appreciate Poetry})$
Most Scientists are Logical*

∴ Some who Appreciate Poetry are not Logical

A legitimate conclusion would be that “**Some** who do **not** Appreciate Poetry **are** Logical.” A **Some...not** statement, unlike a **Some** statement, is not reversible! The correct answer will commit a similar flaw.

(A) Draws a conclusion similar to that drawn in the stimulus, but it is a **valid** argument.

(B) CORRECT: this argument has the same structure as that in the stimulus.

*Franz, a father: Father $\rightarrow \sim(\text{Want Children to Eat Candy at Bed})$
Most Fathers are Adults*

*∴ Some Adults **do** Want Children to Eat Candy at Bed*

(C) Draws a conclusion dissimilar to that drawn in the stimulus. It is also flawed differently, in that its conclusion should have stated that “*Most California is inferior to French wine aged in oak.*”

(D) Draws a conclusion similar to that drawn in the stimulus, but it is a **valid** argument.

(E) This argument seems very similar to that in this stimulus.

*Betty, an Executive: Executive $\rightarrow \sim(\text{Likes to Pay Taxes})$
Most Executives are Honest*



*Some who Like to Pay Taxes **are** Honest*

For this argument to be parallel to the flawed argument in the stimulus, it should have concluded “Some who like to pay taxes are **not** honest.” For this argument to be a **valid** argument, it should have concluded “Some who do **not** like to pay taxes are honest.”

Remember that no element of a Some statement can legitimately be altered

Question: Preptest 29 (October 1999), Section 4, Question 21

This is a **Parallel – Flaw Question**.

Once again, the argument contains **Quantity** statements: a diagram is necessary. Remember, **Few** is equal to **Most...not**.

*Many Weaklings are Cowards
Most Cowards are Fools*



Some Weaklings are Fools

The two **Quantity** statements in the evidence cannot be combined, yet the argument does so: it commits an **Illegitimate Combination**.

(A), (C), and (E) all have **Some** statements in their conclusions, so potentially commit an Illegitimate Combination

(B) does **not** combine quantities in its conclusion.

(D) has a **conditional** conclusion.

(A) contains a **valid** conclusion. It could have made an even stronger conclusion, that **all weasels are nonherbivores**.

(C) contains an **Illegitimate Combination**, but its structure so different from that of the argument in the stimulus that it does seem like a correct answer.

(E) contains a **valid** conclusion.

So, even though argument in (C) seems different from that in the stimulus, it is the only answer choice that contains a similar flaw. So (C) is **CORRECT**. This question demonstrates that two arguments that have a **similar flaw** can have a **dissimilar structure**. The correct answer to a **Parallel – Structure Question** has never on any disclosed LSAT deviated so significantly from the structure of the argument in the stimulus.

Question: Preptest 30 (December 1999), Section 2, Question 6

This is a **Parallel – Flaw Question**.

The flaw is a **Flaw of Division** – the argument assumes that a quality of the *whole* (the “*students at the university take a wide variety of courses*”) is also true of a *part* of that whole: (“*Miriam takes a wide variety of courses*”).

- (A) A **valid** argument.
- (B) **CORRECT**.
- (C) A **valid** argument.
- (D) This argument **Confuses a Sufficient for a Necessary Condition**.
- (E) This argument commits a **Flaw of Composition**: it assumes what is true of the parts (*the individual cells are incapable of thinking*) is true of the whole (*the brain is incapable of thinking*).

It is almost always safe to assume that the correct answer will match the flaw not only in **type** but also in **degree**. The argument in the stimulus is flawed, but its conclusion **could be true**. The same is true of (B). But (E) is much worse argument: its conclusion **must be false**: that *the brain can think* is a safe assumption, even on the LSAT! Do not be afraid to rely on your own common sense: the correct answer must match the **flaw**, and it will probably match the **feel** of the argument: the **degree** to which the argument is **unreasonable**.

Question: Preptest 30 (December 1999), Section 2, Question 14

This is a **Parallel - Structure Question**.

Evidence

*A diet high in refined sugar can cause a person to be overweight
Being overweight can cause adult-onset diabetes.*

Conclusion

*A diet high in refined sugar can **cause** adult-onset diabetes.*

(B) and (E) do not have a Causal Claim in their conclusions: they can be eliminated immediately.

(C) The conclusion in this answer choice establishes a **primary cause**: the strength of **primary** is different from that in the argument in the stimulus.

Only (A) and (D) deserve a full read.

(A) is a bad argument. The conclusion should have established that “*warm, crowded places*”, not “*cold air*”, can cause colds.

(D) **CORRECT**.

Question: Preptest 30 (December 1999), Section 4, Question 9

This is a **Parallel – Structure Question**.

The word **except** suggests a diagram will be useful.

First-Time Author + Not a Celebrity
→ *Manuscripts Generally do not get Serious Attention*
I am a First-Time Author and Not A Celebrity

∴ *My Manuscript is Unlikely to get Serious Attention*

The strength of **unlikely** must be matched in the correct answer choice: this includes any statement about what is **probable**, stated in the positive or the negative: **generally, usually, unlikely, probably, improbably**, or something equivalent must be in the conclusion of the correct answer.

Only (B) and (D) pass this test, so only (B) and (D) are worth a serious read.

(B) is **CORRECT**. It matches the structure exactly. The **contains bananas** matches the **First-Time Author**, the **two or more exotic fruits** following **unless** matches the **Celebrity** following **except**, and the **ordinarily boring** matches the **Generally does not get Serious Attention**.

(D) is a **valid** argument, but does not contain an element that matches the “*except by Celebrities*” component of the argument in the stimulus.

Remember, **unless** is equivalent to **except**!

Question: Preptest 30 (December 1999), Section 4

This is a **Parallel – Flaw Question**

Evidence

*The judgment that an artist is great rests on assessments of previous work.
A series of great works is the only indicator of greatness.*

Conclusion

*“Greatness” only summarizes past great works and can provide **no basis** for predictions of the quality of the artist’s future works.*

The argument takes a classic LSAT flaw and flips it on its head. It is flawed to assume that the **Present Determines The Future**. It is reasonable to argue that current “greatness” is **no guarantee** of “future greatness.” But it is also unreasonable to argue that current greatness is **completely irrelevant** to predictions of “future greatness.” To argue that the *present determines the future* is flawed; to argue that the *present is irrelevant to the future* is also flawed!

- (A) CORRECT. In this argument, the **cold** matches the *greatness* in the original argument and likewise the **symptoms** match the *great works*. It is unreasonable to conclude that a current cold is **irrelevant** to predictions of future symptoms.
- (B) Does not contain a conclusion about the **future** or **predictions**, so it cannot match the flaw in the stimulus.
- (C) Draws a conclusion that is close to that drawn in the stimulus. If the flaw seems similar, *then and only then* look more closely at the structure. This argument contains 3 *distinct premises*, more than are in the argument in the stimulus. This argument also assumes that the **past is irrelevant to predictions about the future**. The difference between conclusions is subtle, however, and in this case you reliably eliminate this answer choice based on the number of premises.
- (D) Draws a conclusion that is about predictions, but its conclusion lacks a statement that matches “*current greatness only summarizes greatness of past works.*”
- (E) Does not contain a conclusion about the **future** or **predictions**, so it cannot match the flaw in the stimulus.

Question: Preptest 33 (December 2000), Section 1, Question 23

This is a **Principle – Structure Question**.

Evidence:

*A traveler in Beijing, to fly to Lhasa must fly through Chengdu
In Beijing: Lhasa → Chengdu
A traveler in Beijing, to must fly to Xian to fly to Chengdu.
In Beijing: Chengdu → Xian*

Conclusion

*To travel from Beijing to Lhasa, one **must** fly through Xian*
In Beijing: Lhasa → Xian

The argument is a **valid** one; the correct answer must contain a **valid argument** that draws a conclusion that establishes a **necessary condition**.

Only (B) and (C) pass this test.

(A) The conclusion drawn in this argument contains the adverb **likely**. It is a conclusion that differs in **strength** from that drawn in the stimulus.

(D) The conclusion drawn in this argument establishes that “*There are two major ways*” to achieve goal. It does **not** establish a **necessary way** to achieve a goal.

(E) The conclusion drawn in this argument contains the subject “**some dancers**.” It is a conclusion that differs in **strength** from that drawn in the stimulus.

(B) **CORRECT**. The answer choice contains a **valid** argument with the same structure as that in stimulus: “**Ice-sculpture artist**” matches to “*traveler in Beijing*,” “**yellow level**” matches to “*Lhasa*,” “*green level*” matches to “*Chengdu*,” and “**white level**” matches to “*Xian*.”

(E) This answer choice contains an invalid argument. A valid conclusion drawn from this evidence: “*A powerful microscope **can** be used by anyone wishing to identify mushrooms properly*.” The evidence establishes that a powerful microscope **can** identify spores, **not** that a powerful microscope is **necessary** to identify spores.

Question: Preptest 33 (December 2000), Section 3, Question 18

This is a **Parallel – Flaw Question**.

Evidence

Photosynthesis (which is good!) increases when CO₂ levels increase
The burning of fossil fuels and other industrial activities increases CO₂ levels.

Conclusion

*The burning of fossil fuels and other industrial activities is **purely beneficial** to agriculture.*

The argument assumes that the **beneficial effect** of a practice proves that the practice is **exclusively beneficial**. Do not be afraid to consult your own *reasonable reservations* about this conclusion. We all know that industrial activities have many negative effects besides increased CO₂ levels, and increased CO₂ levels also have many negative effects.

- (A) The argument is flawed, but it concludes that a certain practice is **more healthful** than another: its flaw, therefore, is different from that in the stimulus.
- (B) **CORRECT.** The argument assumes that the **beneficial effects** of exercise prove that exercise causes “no harm,” that exercise is **exclusively beneficial**.
- (C) The argument is flawed, but it concludes that one **ought** to engage in the **extreme** practice of “fasting” when less extreme practices might be healthier: its flaw, therefore, is different from that in the stimulus.
- (D) The argument is flawed, but it concludes that one **ought** to engage in the **extreme** practice of “completely abandoning” the consumption of canned vegetables, when less extreme practices might be more realistic: the argument’s flaw, therefore, is different from that in the stimulus.
- (E) The argument is flawed, but it concludes that the **best policy** is an **extreme solution**: to “completely abandon” the use of penicillin, when a less extreme practice, moderating penicillin use, is almost certain safer: the argument’s flaw, therefore, is different from that in the stimulus.

Question: Preptest 33 (December 2000), Section 3, Question 22

This is a **Parallel – Structure Question**.

This monstrously long question attempts to reconcile “*relativity theory*” and “*quantum mechanics*.” The last time I checked, no one, not Albert Einstein nor Werner Heisenberg nor Stephen Hawking nor Neil DeGrasse Tyson has ever proposed a theory that accomplishes this reconciliation. The point here is that you will never survive this question if you focus on its difficult content. Focus on its structure: determine its conclusion and see if you can make some easy eliminations based on that conclusion.

Conclusion

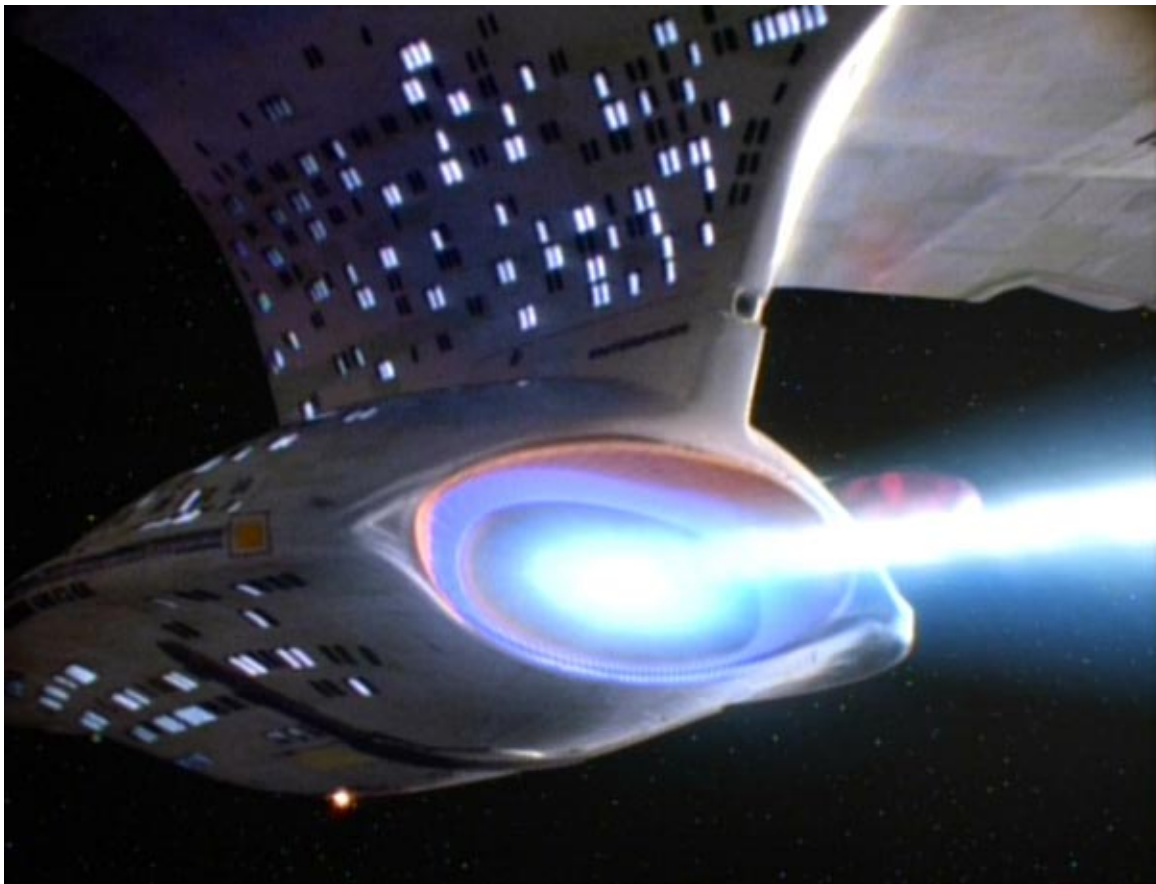
*If relativity theory is correct, **either** quantum mechanics’ prediction about tachyons is erroneous **or** tachyons travel back in time.*

Eliminate those answer choices that do not have **conditional** conclusions. Of those that remain, eliminate those that do not have an **either/or** statement.

- (A) The conclusion is that *English **more likely** descended from Finno-Ugric than from Indo-European*. Not only is the conclusion crazy, it is **unconditional**. Eliminate!
- (B) The conclusion is that the *defendant **is** guilty*. The conclusion is **unconditional**. Eliminate!
- (C) Has the **conditional** conclusion that contains an **either/or** statement. Keep it!
- (D) The conclusion is that *Alexander is **more likely** buried in Siwa than in Alexandria*. The conclusion is **unconditional**. Eliminate!
- (E) The conclusion is that *the universe **will** stop expanding*. The conclusion is **unconditional**. Eliminate!

Let this question be a lesson that applies to almost all ***Parallel Reasoning Questions***, and indeed to almost all ***Logical Reasoning Questions***: when the content in the stimulus is difficult, the logic that get you to the correct answer is easy. The ***inverse*** is also true, however: when the content in the stimulus is simple, the logic required to get to the correct answer is more difficult. In this previous question, the esoteric subject matter about *relativity*, *tachyons*, and *time travel* disguised a very easy question: matching the conclusion drawn in the stimulus to the conclusions drawn in the answer choices led quickly and efficiently to the correct answer.

For those of you who were disappointed by how easy it was to eliminate the answer choices and were expecting an in-depth discussion of quantum mechanics, here is a picture of the Federation Starship Enterprise-C shooting a tachyon pulse!



The rest of the best: Pretests 19 – 51.

Prep Test 22 (June 1997), Section 2, Question 23

The argument's structure:

Premise

75 percent of vegetarians reached age 50 without developing heart disease.

Intermediate Conclusion

Avoiding eating meat decreases one chances of heart disease

Conclusion

Those who want to reduce the risk of heat disease should avoid eating meat.

When a flawed argument contains an **intermediate conclusion**, the flaw is usually committed between a premise and the intermediate conclusion. (This is true on June 2007, Section 3, Question 18 and December 2004) So it goes in this argument: the **main conclusion** is reasonable if the **intermediate conclusion** is true.

It is the intermediate conclusion that is flawed here. The **intermediate conclusion** is a **causal conclusion**, and it supported by one premise. You may have thought the premise was a correlation, and that the flaw is **Correlation Implies Causation**, but this argument is actually much worse! The premise is not even a correlation.

75 percent of vegetarians reached age 50 without developing heart disease.

This might sound impressive, but what if 75 percent, or more, of **all** people reached age 50 without developing heart disease? A solitary *percentage* claim such as that in the evidence is a very weak correlation. A *good correlation* must include a comparative statistic. If we knew that 60 percent of meat-eaters reached age 50 without developing heart disease, then we would have a better correlation. At that point, we would then wonder whether it was truly the differences in diet that explained the differences in rates of heart disease. Perhaps vegetarians are more likely to exercise or less likely to smoke than are meat-eaters.

However, our goal is to match the original argument. So our answer must have the following:

- I. A premise containing a solitary *percentage* claim. The premise could mention a specific number, matching the 75 percent, or just simply use the word "**most**".
- II. An intermediate conclusion that is a causal conclusion.

III. A main conclusion that contains **should** and follows from the intermediate conclusion.

(E) **CORRECT**. The **premise** is a solitary **most** claim. The **intermediate conclusion** is a **causal conclusion**. The **main conclusion** is a **should** claim that follows from the intermediate conclusion.

(A) Does not contain an **intermediate conclusion**.

(B) The premise in this argument contains a *good correlation*. So it is a much better argument than that in the stimulus.

(C) This argument's **intermediate conclusion** infers correlation, not causation, as does the argument in the stimulus. Also, the main conclusion is an unsupported **should**: there is no evidence about what 'government' should do.

(D) The premise in the argument contains a correlation. Also, there is no intermediate conclusion.

(E) **CORRECT**. The premise is a solitary *most* claim. The intermediate conclusion is causal. The main conclusion is a should claim that follows from the intermediate conclusion.

Prep Test 32 (October 2000), Section 1, Question 19

Question Type: Flaw

Evidence

Everyone needs self-esteem, which requires one to believe that one is useful and needed.

Behavior that seems altruistic can be understood as motivated by the self-interested desire to feel useful and needed

Conclusion

There is no such thing as altruistic behavior

Altruism is the belief in or performance of acts that are beneficial to others and not selfish in origin. Altruism as a concept appears frequently on the LSAT because altruism is a fascinating and difficult to explain phenomenon. Why do people give to charity, help a stranger in trouble, or perform other acts that are, or at least seem, selfless? This argument concludes that people actually never act altruistically: behavior that seems altruistic is in fact motivated by selfish interests.

For those who possess a cynical outlook, this argument might have seemed reasonable. It is a **Flaw Question**, however, so even if one finds the argument convincing, there is a flaw somewhere within it.

As always, we start with the conclusion. Hopefully, you noticed that the conclusion was very strong: “*There is **no** genuinely altruistic behavior.*” Such a strong and sweeping conclusion needs equally strong evidence, but the evidence is lacking. We only learn seemingly altruistic acts **can** be understood as being motivated by a selfish desire to feel useful and needed.

At its core, this argument assumes that *one possible motivation is the only motivation*. This is a kind of **Causal Flaw**.

(E) CORRECT. This answer choice matches the strength of the evidence and conclusion: “**can** be interpreted as self-interested **is** in fact self-interested.”

(A) The argument does the opposite of this answer choice. The argument actually *presupposes* – assumes – that anyone acting out of self-interest is **not** being altruistic. This assumption is actually a reasonable one, because an altruistic act is, by definition, unselfish.

(B) Once again, the argument does the opposite of this answer choice. The argument inferred that behavior is not altruistic.

(C) The argument established that self-esteem depends on believing one to be useful and needed. Even if there were other necessary conditions for self-esteem, these existence of these conditions (such as “awareness of one’s own value”) is not a problem for this argument.

(D) The argument established that *sufficient self-esteem* required *believing one to be useful and needed*:

Sufficient Self Esteem → Believe Useful + Believe Needed

This answer choice accuses the argument of assuming something very close to the *inverse* of that premise, which is.

Sufficient Self Esteem → Useful + Needed.

The argument in the stimulus, however, by reaching a conclusion about motivation, commits a **Causal Flaw**, not a **Sufficient/Necessary Flaw**.

Interesting, this question is almost exactly the same as another **Flaw Question** about altruism from *Prep Test 29 (October 1999) Section 4, Question 18*. That argument commits a flaw almost identical to the flaw above. This surprising similarity was probably an oversight by the test writers, but it does show the importance of *altruism* as a philosophical concept on the LSAT. It is particularly fascinating as a concept in evolution: how can we explain, from an evolutionary perspective, that certain humans are capable of tremendous acts of self-sacrifice, even when their lives, and lives of their closest genetic relatives, are not at stake? This topic is discussed in the comparative passage of *Prep Test 64 (October 2011)*. To further explore this topic, check out *The Selfish Gene*, by Richard Dawkins.

December 2003 (Prep Test 42), Section 2, Question 23

As it is with all **Sufficient Assumption Questions**, your fundamental task is simple: find an answer choice that establishes that the evidence is sufficient for the conclusion.

Every correct answer to a sufficient assumption question has this formula:

Evidence → Conclusion.
or
Conclusion → Evidence

The argument has a relatively common structure:

Counterclaim

Some scientists claim that superheated plasma in which electrical resistance fails is a factor in causing ball lightning.

Evidence

*If the scientists were right, ball lightning would emit intense light and rise in the air. The ball lightning the professor has observed **did not emit intense light** (“low intensity”) and **did not rise** (“floated horizontally”).*

Conclusion

*Superheated plasma in which electrical resistance fails is **never** a factor in causing ball lightning.*

Hopefully you realized that the conclusion contains a very **strong causal claim** that is **not fully supported**. But equally important to realize is that the professor’s evidence is very weak: the evidence is based solely on the professor’s personal observations.

The two evidence statements, however, do connect. The first evidence statement is a conditional statement:

*Superheated
plasma in which
electrical resistance
fails is a factor in
causing ball
lightning* → *Intense Light
and Rise*

The ball lightning the professor witnessed:

~~Intense Light and Rise~~

By the contrapositive, we can conclude:

*Superheated plasma in which electrical resistance fails is **not a factor** in causing the
ball lightning the professor witnessed.*

To take what the professor observed and broaden that observation to **all cases of ball lightning** requires a very strong assumption. A good prediction would be

***Some cases of ball
lightning are not
caused by
superheated plasma
in which electrical
resistance fails*** → ***No cases of ball
lightning are
caused by
superheated plasma
in which electrical
resistance fails***

Even if you failed to make a precise prediction – very few do when faced with this difficult argument – if you looked for an answer choice that had **strong, causal language**, you probably answered this question correctly.

(E) **CORRECT.** This choice establishes that *every instance of ball lightning has the same cause*. So, if superheated plasma is **sometimes not the cause** of ball lightning, superheated plasma is **never the cause** of ball lightning. This most closely matches the prediction.

(A) The answer does not match the prediction, and involves the irrelevant “*other kinds of lightning*.”

(B) This answer does not match the prediction, and only weakly supports the evidence.

(C) The answer does not match the prediction. In fact this choice weakens the argument: by establishing that there are multiple causes of ball lightning, this choice allows for the possibility that instances of ball lightning that the professor has not observed *are caused by superheated plasma*.

(D) This answer does not match the prediction, and merely ***Repeats Evidence***.

Prep Test 45 (December 2004), Section 1, Question 12

Question Type: Weakening

Evidence

*Fish recover when the paper mill shuts down
Dioxin decomposes very slowly in the environment.*

Conclusion

Dioxin is unlikely to be the cause of the fish abnormalities.

This argument itself weakens a cause and effect argument through the **Cause Without Effect** weakener: the evidence suggests that, because of dioxin's slow rate of decomposition, the *supposed cause* exists even as the *effect*, the fish abnormalities, do not. When asked to weaken an argument that already weakened a causal claim, it is often best to aim to **strengthen** that *original causal claim*. So the best answer choice will strengthen the "*dioxin causes fish abnormalities*" claim.

(A) "*Some studies*" is very weak, and **attacks** on the **source** of the data are seldom a good way to weaken an argument. Also, at best this choice suggests that the studies are biased in favor of paper manufacturers. The argument, however, is not that the paper mill was not responsible for the fish abnormalities. The first premise, which establishes that the fish recover when the mill shuts down, suggests that the mill is responsible. The second premise, however, that suggests it is not dioxin, but some other product of the paper plant.

(B) The most commonly chosen incorrect answer, but it has an unknown impact. That the rate of decomposition "varies" does not make the dioxin any less or more potent. Even if the time of decomposition varies from 100 years to 1 million years, the dioxin is still present and the fish recovery suggests that some other explanation is needed for the fish abnormalities.

(C) **CORRECT.** This choice tells us that when the fish recover (*when the mill shuts down*) there is actually **no dioxin present** because it is *far downstream*. This choice transforms the argument's *Cause Without Effect Weakener*, into a **No Cause, No Effect Strengtheners**! This answer choice is a great weakener because it **explains the evidence** – the fish recovery – while **undermining the conclusion**.

(D) This fact is unfortunate for those poor fish, but this choice fails to explain how the fish can return to normal hormonal levels. Also, "some" is rarely a promising start an answer choice that is supposed to weaken a cause and effect argument. Such

arguments are usually compatible with a limited number of counterexamples, and this answer choice is not even, strictly speaking, a challenge to the argument that dioxin does not cause hormonal abnormalities.

(E) Always be extremely skeptical of answer choices that appeal to our lack of understanding – to what we do not know. What we “know” is not always directly relevant to the reality of an explanation. After all, we *homo sapiens* were well aware of the connection between sunlight and plant growth long before we understood the mechanics of photosynthesis.

Prep Test 45 (December 2004), Section 1, Question 21

As it is with all **Sufficient Assumption Questions**, your fundamental task is simple: find an answer choice that establishes that the evidence is sufficient for the conclusion.

Every correct answer to a sufficient assumption question has this formula:

Evidence → Conclusion.
or
Conclusion → Evidence

Hopefully, you recognized that the two pieces of evidence are classic *cause and effect weakeners*.

Evidence

*Extinctions, without meteors: **effect without cause.***
*Meteors, without extinctions: **cause without effect.***

Conclusion

*There is **no consistent causal link** between major meteor impacts and mass extinctions.*

As we know from our discussion of **Weakening Questions**, the evidence weakens, but does not conclusively disprove, a causal link between meteor impacts and mass extinctions.

“Extinctions without meteors” would disprove the claim that “only meteors cause extinctions,” just as “meteors without extinctions” would disprove the claim that “major meteors always cause extinctions.” The conclusion here, however, is that there is “no consistent causal link.” **To reach this conclusion, we need an assumption about what constitutes a “consistent causal link.”** There is no such language in the evidence, so there must be such language in the correct answer.

Because there is the **Unsupported Cause** – “no consistent causal link” – in the conclusion, we can predict that the correct sufficient assumption will take on of the following forms:

Evidence → Consistent Causal Link
or
Consistent Causal Link → Evidence

In each of these equations, the **evidence** could consist of either one of, or both of, the premises.

(A) **CORRECT.** This answer choice has the form **Consistent Causal Link → Evidence**. “If there were a consistent causal link between major meteor impacts and mass extinctions, all meteor impacts would be followed by mass extinctions.” The necessary condition of this *conditional statement* is proven false by the second premise, so the sufficient condition is false as well. Therefore, there is *no consistent causal link*.

(B) This choice closely resembles, but is not, the form **Evidence → Consistent Causal Link**. This choice has so much content drawn from the argument that it seems to justify the conclusion, but remember that *unless statements require diagramming* to see their impact.

Unless = “if not”

So this answer choice can be diagrammed

~~Many mass extinctions have followed major meteor impacts~~ → ~~Consistent Causal Link~~

If the evidence had established that the statement “*many mass extinctions have followed major meteor impacts*” is false, this answer choice would be correct! But the evidence does not establish this. The first premise established that many mass extinctions have occurred without major meteor impacts, but this claim does not invoke the sufficient condition of this answer choice. The negation of “*Many As are Bs*” is *not* “*Many As are not Bs*.”

Just as **Some As are Bs** is compatible with **Some As are not Bs**, so **Many As are Bs** is compatible with **Many As are not Bs**.

To properly invoke the sufficient condition in (B), we would need to know that “***fewer than many*** mass extinctions have followed major meteor impacts.” Because the argument does not contain such a premise, (B) has no impact on the argument.

(C) Does not contain the conclusion’s **Unsupported Cause**.

(D) This choice is close to the form ~~**Consistent Causal Link → Evidence**~~. If you realize this, you can stop reading immediately. Why? Because this answer choice is similar to the **Unacceptable Formula**, which was first discussed in the chapter on **Principle Questions**. No matter what (D) has in its *necessary condition*, it will never get us to the conclusion. At best, this choice is the **converse/inverse** of a **sufficient assumption**. As such, it should be eliminated immediately.

(E) An **even if** statement cannot be diagrammed as a **conditional statement**, so this choice cannot match the predicted assumption. This choice is far too weak. An **even**

if statement can be a **sufficient assumption** only when the conclusion is very weakly worded.

As this question was a Sufficient Assumption question, the correct answer needed to contain the **Unsupported Element** of the conclusion: in this case the **Unsupported Cause** "no consistent causal link." Anytime a **Sufficient Assumption Question** follows a conclusion that is a causal claim, and there is not sufficiently strong causal language in the evidence, the correct answer must contain such causal language.

It's a Flaw question, so you have to identify the conclusion: "controlled economies are not acting in a way most likely to bring about maximum total utility (MTU)." That's the easy part. You then need to identify not just the random facts that are the evidence; you need to find the sum of the evidence, and then note the gap between the evidence and the conclusion.

The first premise establishes that MTU is assured only in a free market. So a free market is the only type of economy that guarantees MTU. You could diagram the premise

Pure Free Market \Rightarrow MTU

But a diagram actually would not do much for you here, because the conclusion is not a conditional statement.

So if I decide to have a controlled economy, then I am clearly missing out on the only condition that is sufficient, that guarantees, MTU. But does that really mean am not pursuing the most likely way to MTU? Most people would actually say "Yes"! After all, if there is a sufficient condition for X, and we want X, why not choose X? But perhaps that sufficient condition, in this case a pure free market, is impossible for my country. Perhaps my people would never adopt such a system because they love communal property so much.

Regardless, you need not think of specific objections. You want the flaw, or the assumption, in the abstract. In this case, the argument assumes: The one sufficient condition for X must be the most likely way to achieve X.

It seems like a rather reasonable assumption. This is one reason this Flaw question is so difficult: the argument does not seem flawed! But it is still an assumption, subject to the objection I mentioned above and many more. Let's look at the answer choices:

(A) This does mention the "not the most likely way" part of the conclusion at all. The argument does establish that "Highly Controlled \Rightarrow ", but that is a reasonable claim. It never assumes " \Rightarrow Highly Controlled", as this choice claims it does. (B) The argument never compares the importance of distribution of utility versus total utility. (C) This is the most tempting incorrect answer. This would be correct if the

argument assumed that the "most likely way to achieve X is the only way to achieve X." (D) CORRECT. This answer choice accurately describes the assumption made in the argument. (E) The argument is not about other serious drawbacks. They might exist, but the focus is on maximum total utility.

If you can see that the evidence establishes a sufficient condition for X, and then claims that those who do not possess that condition are not pursuing the means "most likely" for X, you can answer this question rather easily. The hard part here is discern precisely what the evidence establishes, and then to see that the conclusion, though it seem reasonable, is actually flawed. I hope that helps.

Preptest 52 – September 2007

Section 1, Question 16: Parallel – Flaw Question

Evidence

Anyone who believes in extraterrestrials believes in UFOs
(Believe in ETs → Believe in UFOs)
The existence of UFOs has been conclusively refuted.
(UFOs)

Conclusion

A belief in extraterrestrials is false as well.
(ETs)

This argument might seem like a valid argument that applies the **contrapositive** to reach its conclusion. But this argument makes an unreasonable assumption: it bases a conclusion about the **existence** of extraterrestrials on the basis of a claim about the **belief** in extraterrestrials. This argument **Confuses Belief with Fact**.

Interestingly, on the unreasonable assumption that the **existences** of ETs and UFOs have the same relationship as **beliefs** in ETs and UFOs, this is a valid argument. The correct answer must be similar: an invalid argument, but valid if a similar **unreasonable assumption** were true.

(A) **CORRECT**. This argument makes the same unreasonable assumption, confusing belief with fact. If this assumption were true, however, this argument would be valid, just like the argument in the stimulus.

(B) This is a valid argument.

(C) This argument **Confuses a Sufficient with a Necessary Condition**.

(D) The **strength** of this argument's **unconditional evidence** and **conclusion** **differ** considerably from that in the stimulus. The evidence in the original argument was that UFOs had been *conclusively refuted*, or **UFOs**. Yet the evidence in this answer choice is merely that *"there is no good reason to believe in centaurs."* Similarly, the conclusion in the original argument was *a belief in extraterrestrials is false*, or **ETs**. Yet the conclusion is that *a belief in unicorns is unjustified*. As you should remember, there is a major difference between a claim that is **unjustified** – not fully supported – and a claim that is **false**. A claim that lacks sufficient evidence is **unjustified**; a claim that can be rejected on the basis of evidence is **false**. To confuse these two is

Confuse Lack of Evidence for a Claim with Evidence Against a Claim – one of the most common LSAT flaws!

(E) Similar to the argument in the stimulus, this argument assumes that the ***existences*** of unicorns and centaurs have the same relationship as ***beliefs*** in unicorns and centaurs. But this argument differs from that in the stimulus because, even if that unreasonable assumption is true, this argument is still not valid. It commits another flaw: ***Confusing a Sufficient with a Necessary Condition***.

Confusing Belief with Fact

has become much more common on recent LSATs, so be ready to recognize it!

Section 1, Question 21: Weakening Question

Counterclaim

The Iliad and the Odyssey are attributed to Homer

Evidence

The poems differ in tone, vocabulary, and in certain details of the world they depict.

Conclusion

The Iliad and The Odyssey are not the work of the same poet

(A) This answer choice has an **Unknown Impact**: it might slightly weaken the argument. Assume the hymns were also attributed to Homer, and they differ more from the Iliad in the respects mentioned than does the Odyssey; the fact that there is another body of work attributed to Homer that shares the differences mentioned suggests that the attribution might have been correct after all. Or, that same fact could suggest that false attributions to Homer are very common. Because both of these divergent possibilities are plausible, this answer choice has an **Unknown Impact**.

(B) This answer choice very slightly weakens the argument, but it is very seldom that the case that the correct answer will challenge the evidence. In addition, the “copying errors” are said to be “minor,” making this answer choice even more unlikely to be correct. It is a **Lesser Weakener**.

(C) **CORRECT**. This answer choice **attacks** the major **assumption** of the argument: differences in details of the poems prove the poems had different authors. This choice refers to a “modern writers”, which makes this choice less tempting than some others: had this choice referred to “ancient writers,” it would be even better! But you do not get to pick from the choices you want, you get to pick from the choices they give you. This is the best weakener of the five choices.

(D) This answer choice also has an **Unknown Impact**. The “internal inconsistencies” imply one of two possibilities: that Homer was capable of authoring the differences described in the argument, which would weaken the argument; or, that the different books of *The Iliad* and *The Odyssey* themselves were composed by different authors, which would strengthen the argument!

(E) This choice, by establishing that “many poets” were involved in the composition process, has a significant **Opposite Impact** on the argument.

An answer choice to a **Weakening or Strengthening Question** may not be perfect, but when the remaining answer choices all have an Unknown or Opposite Impact, it must be correct!

Section 1, Question 24

Most Strongly Supported

Evidence

*McElligot flash pasteurizes its apple juice
Intensive pasteurization destroys bacteria **more effectively than any other method**,
but it likely to destroy the original flavor
McElligot's citrus juices are unpasteurized*

The first two statements can be combined:

An intensively pasteurized apple juice will probably have less bacteria than McElligot's apple juice.

Because the combination yields a comparison, be especially wary of answer choices that are **Unsupported Comparisons**!

(A) No comparison of citrus juices is made – an **Unsupported Comparison**.

(B) No comparison between McElligot's citrus juices and apple juices is made. An **Unsupported Comparison** in which the LSAT demonstrates its sublime sense of humor – it compares apples to oranges!

(C) No comparison of citrus juices is made – an **Unsupported Comparison**.

(D) This seems supported, because we know that intensive pasteurization – the method **most likely** to destroy bacteria – is **likely** to destroy the original flavor. But we do not know that this method is the **most likely** to destroy flavor. As always, be skeptical of superlatives: they are likely to be **Language of Unsupported Strength**.

(E) CORRECT. This closely matches the prediction above.

*When, on a **Most Strongly Supported Question**, the evidence allows for a comparison to be made, the correct answer will most likely be that comparison. Watch out for **Unsupported Comparisons** in Inferences Questions in both Logical Reasoning **and** Reading Comprehension sections!*

The LSAT sometimes has a sense of humor. Enjoy it – it might not be great, but it beats the jokes in most, if not all, Adam Sandler movies!

Preptest 53 – December 2007

Section 1, Question 8: Weakening Question

Evidence

First study: a correlation is found in children between nearsightedness and sleeping with a night-light

Two later studies: no correlation is found

The children in the first study were younger than the children in the later studies.

Conclusion

If night-lights cause near-sightedness, the effect disappears with age

The flaw in this argument is **not correlation implies causation**. It cannot be, because the conclusion does not make a causal claim. The conclusion is a conditional statement: *at issue is **not the truth of the sufficient condition**, but the relationship between the two conditions*. A good weakener must show that if night-lights cause nearsightedness, the effect may not disappear with age. A good weakener, therefore, will **explain the evidence** – two later studies – that seems to support the conclusion.

It is important to remember that, while a *correlation **does not imply** causation*, a *correlation **does strengthen** causation*. Similarly, *no correlation **does not disprove** causation*, but *no correlation **does weaken** causation*. So the evidence that *no correlation was found* in the two later studies strongly supports the conclusion that the effect disappears with age. When a conclusion is strongly supported, a good weakener might undermine the evidence presented.

(A) This would *weaken* an argument that concluded that *night-lights cause nearsightedness*, but that is not the conclusion!

(B) This would *strengthen* an argument that concluded that *night-lights cause nearsightedness* by **eliminating an alternative explanation** for the correlation: the **Causal Reversal**.

(C) This answer choice has **No Impact** on the argument.

(D) **CORRECT**. This answer simply states the later two studies were poor studies. Rarely do weakeners so clearly attack the evidence; some test preparation programs claim that weakeners will *never attack the evidence*. This claim is false! *Good weakeners **rarely** attack the evidence, but they **can attack the evidence***.

(E) This is a **Lesser Weakener**. “Several” out of 100 children is far too small a number to prove or disprove that the *nearsightedness effect disappears*.

Section 1, Question 19: *Parallel Reasoning – Structure*

Evidence

***People who** habitually sleep less than six hours a night **typically** feel less anxious when they get eight or more hours of sleep (Wow, that’s surprising!)*

Conclusion

***Most** people who sleep less than six hours a night can **probably** reduce their anxiety levels by sleeping at least eight hours a night*

The conclusion in the correct answer must match the strength of the conclusion in the original argument: the correct answer will very likely have a conclusion that has the structure “**Most** Xs can **probably** be Ys.”

- (A) The conclusion has the same structure.
- (B) The conclusion has the same structure.
- (C) This conclusion is too strong: “**any** small company **will** improve.”
- (D) This conclusion does not contain **most** or an equivalent word.
- (E) This conclusion has the same structure.

Now examine the evidence of the choices that remain, (A), (B), and (E). The evidence of the correct answer must match the evidence in the original argument. It must state that **all** of members of a certain group, **when** they change their behavior, **typically** experience a different result. (**All** is equivalent to **people who**).

- (A) The evidence matches. This looks good!
- (B) This evidence is only about “*certain companies*,” not **all** companies.
- (E) The evidence is about a company’s *financial situation improving*, yet the conclusion is about a company becoming *financially strong*. The argument is not a good one, so this answer choice must be incorrect.

(A) is CORRECT.

*When doing a **Parallel – Structure Question**, you can make quick eliminations by matching the language in the conclusion to that in the stimulus. When that fails to eliminate all the incorrect answer choices, do the same with the evidence!*

Section 1, Question 22: Flaw Question

Evidence, introduced by the **transition word** “but”:

*People who slightly overweight are **healthier** than those who are underweight*

Conclusion

*To be healthy, it suffices to be slightly overweight
Slightly overweight → Healthy*

The evidence is **comparative**, but the conclusion much stronger than that: it states not that being slightly overweight is **healthier** than being underweight, but that that being slightly underweight **guarantees healthiness**!

We have not seen this flaw before: **Confusing a Comparative Statement with a Conditional Statement**.

(A) This answer choice is **Technically True But Uninteresting**: what argument can possibly address all opposing positions? This answer choice is accusing the argument of failing to appeal to relevant sources; as we should well know from *Chapter Six*, attacks on the argument’s sources, or lack of sources, are always wrong when the argument commits a flaw of reasoning.

(B) **Ambiguous Word Usage/Equivocal Language** is correct only when the argument clearly employs two different definitions of a key term. If you cannot articulate precisely what those definitions are, you cannot choose this answer choice!

(C) Like answer choice (A), this answer choice is **Technically True But Uninteresting**: ideal weight varies from person to person, but we have basic guidelines for what constitutes *overweight and underweight* for people of different heights and body types.

(D) This answer choice seems like a **Babelchoice**, but it accurately, while confusingly describes the flaw of Confusing a Sufficient for a Necessary Condition:

*a **property** that would **suffice** to make a person **unhealthy***

Property → Healthy

*if a person **lacks** (that) **property**....then the person **must be healthy**.*

Property → Healthy

This choice is tempting because of the word “suffices” in the argument’s conclusion, but it is the **Wrong Flaw!**

(E) **CORRECT.** “Relative” is equivalent to “comparative,” and, in this sense, “absolute” is equivalent to “sufficient.”

*Even if a flaw is unfamiliar, if know you know the common flaws well, and you know other Elimination Justifications such as **Technically True but Uninteresting** and **Babelchoice**, you will be able to find the correct answer!*

Runner up Question: Section 3, Question 13

(B) is CORRECT because it is a good argument, so it cannot have **flawed** reasoning similar to the argument. While (B) might seem like a Flaw of Composition, with certain physical qualities, such as “made of metal”, what is true of the part **is true** of the whole!

Section 3, Question 24: *Method of Reasoning Question*

Evidence

One who has a choice of 50 varieties of cola is less free than one who can choose from wine, coffee, apple juice, milk and water.

Conclusion

Meaningful freedom cannot be measured only by the number of alternatives, but by the extent of the differences available

The conclusion is a general claim supported by a specific example.

(A) **CORRECT.** It is appropriate to describe the conclusion as a **principle**: any general claim can be described as a principle. On the LSAT general claims that are **moral or evaluative**, such as this judgment about what constitutes “*meaningful freedom*”, are especially likely to be described as **principles**.

(B) This answer choice has the conclusion and the evidence reversed.

(C) This, the most commonly chosen incorrect answer, is wrong because the evidence is more appropriately described as an **example** than an **analogy**. An analogy is always a comparison of two similar entities: so, one would not call an argument that cites a specific instance in support of a more general claim an **argument from analogy**. Here is an argument from analogy:

A person who can choose from 50 varieties of cola has less freedom than one who can choose from wine, coffee, apple juice, milk, and water. Therefore, one who can choose one song by Bach, the Beatles, N.W.A., or Miley Cyrus has more meaningful freedom than one who must choose from among the 112 songs by Nickelback.

The claims in the evidence and conclusion are *similarly specific*, so this argument can appropriately be called an **argument from analogy**.

(D) This answer choice describes a **Flaw of Composition**: a **Method of Reasoning Question** is not asking you to criticize the argument, so it is not asking for a flaw!

(E) This answer choice incorrectly describes the argument’s **evidence**.

Section 3, Question 25: *Principle – Application Question*

This question type was mentioned in Chapter Eight, but not fully discussed, because there was hardly any **Principle – Application Questions** on older tests. They have appeared very frequently on Pretests 52 – 71, however!

These questions give a **principle**, and a *conclusion* – called an **Application** – based on that principle. Your job is to provide the evidence that makes the application a fully supported conclusion. Like **Principle – Justify Questions**, **Principle – Application Questions** are very much like Sufficient Assumption Questions: the correct answer makes the argument completely valid. In the case of Principle – Application questions, however, the answer choices provide the **evidence**, not the **principle**.

As these questions are very much like **Sufficient Assumption Questions**, you should try to predict as much as possible the correct answer!

Principles

*Meetings **should** be kept short*
*Issues addressed **should be only those issues** relevant to a majority of employees attending.*

Diagram: *Addressed at a meeting → Should be relevant to a majority of attendees*

*A person should not be required a meeting **if** none of the issues are relevant to an employee.*

Diagram: *No issues are relevant to Employee → Employee should not be required to attend*

Application

*Terry **should not be required to attend** the meeting at 2 o'clock.*

Clearly, the second principle is related to the **application**: if we knew that *no issues relevant to Tom* are addressed at the meeting, then we can conclude that *Terry should not be required to attend*. The first principle establishes that the issues addressed must be relevant to a majority of attendees. If we knew that the **issues relevant to Terry cannot be relevant to a majority of the attendees**, then we could conclude that that no issues relevant to Terry will be addressed at the meeting

(C) is **CORRECT**.

(A) This proves that Terry would not make a presentation at the meeting. It establishes nothing about whether Terry should be required to attend.

(B) This proves that Terry would not make a presentation at the meeting. It establishes nothing about whether Terry should be required to attend.

(D) Because this answer choice does not establish with certainty what issues will be addressed at the meeting, it ***fails to connect*** to the third principle and therefore cannot fully support the application.

(E) This also fails to fails to connect to the third principle, which established that when ***no issue*** is relevant to an employee, then that employee need not attend. If *even one issue* is relevant to Terry, he might be required to attend.

Preptest 54 – June 2008

Section 4, Question 15 – Role of Statement Question

Evidence

*If the city wanted to become a safer place for cyclists, it would not require helmets.
Instead, it would construct more bicycle lanes and educate drivers*

Conclusion

*The ordinance requiring helmets reveals that the city is more concerned with the
appearance of public safety than with actual public safety*

You are asked about “*the statement that mentions driver education.*” You are asked about one of the evidence statements, but *understanding that the relevant statement is evidence is rarely sufficient* to find the correct answer. As you can see, (A), (B), (C) **all** describe the **statement as evidence**. It is also acceptable to refer to the statement about driver education as an example or an illustration, so (D) and (E) are also potential answers!

(A) This answer choice *correctly describes the statement* as evidence but it **distorts the conclusion**: the conclusion is not that the city “misunderstands” bicycle safety, but that they are less concerned with bicycle safety than with bicycle safety. Ultimately, this is an argument about the city’s **motivations**. For such an argument to be reasonable, it **must be assumed** that the city, like the author, **believes** that bicycle lanes and driver education would better improve bicyclists’ safety. If the city did not share this belief, perhaps one could accuse the city of ignorance, but it would be completely unreasonable to argue that the city has **ulterior motivations** for the helmet ordinance.

(B) **CORRECT.**

(C) “*Total ineffectiveness*” is **Language of Unsupported Strength**. This answer choice correctly **Describes the Statement but Distorts the Conclusion**.

(D) It would be correct to describe this statement as **examples** of what the city **would do** if it actually cared about bicycle safety. The argument states that the city **will not** take these measures because it does not truly care about bicycle safety. So this answer choice completely **Runs Counter to the Argument**.

(E) It would be correct to describe this statement as **illustrations** of what the city **would do** if it actually cared about bicycle safety. The argument states that the city

will not take these measures because it does not truly care about bicycle safety. So this answer choice also ***Runs Counter to the Argument***.

Section 4, Question 16: *Flaw Question*

Evidence

Building colonies on the moon would be very costly, but humans possess the technology to do so.
As human populations grow, there will be a growing economic incentive to build such colonies.

Conclusion

Colonies will be built and human overcrowding relieved.

LSAT-takers often on the “*overcrowding relieved*” part of the conclusion because this seems to suggest that the overcrowding will be *solved* by the construction of moon colonies. This is not what “*relieved*” means. To *provide relief* to a problem or crisis is not necessarily to solve that problem but to make the problem less serious.

The flaw in the argument is the assumption that an ***incentive*** will lead to an ***action***. It is a particularly problematic assumption when that ***action*** – building moon colonies – is described as “*very costly*.” Drawing a conclusion on the basis of ***motivations*** – an *incentive* is a kind of *motivation* – is always trouble!

(A) **CORRECT.**

(B) This answer choice contains ***Language of Unnecessary Strength***. The argument ***never*** assumes that moon colonies are the ***only way*** to solve the problem of overcrowding. It establishes that moon colonies will be an *effective solution*, but ***not*** that they are a ***necessary solution***. Had the argument concluded that “*moon colonies must be built*,” rather than “*will be built*,” this answer choice would be correct!

(C) An answer choice that starts with ***overlooks the possibility*** will, if correct, state a ***logical opposite*** of an assumption of the argument. The possibility itself will severely ***weaken*** the argument. But this possibility actually strengthens the argument! If “*colonies will be built regardless of any economic incentive*,” the conclusion that colonies ***will be built*** is strengthened!

(D) The future conditions of the moon colonies is ***Irrelevant to the Argument***. In fact, this answer might also strengthen the argument: if the colonies eventually get overcrowded, they certainly must have been built!

(E) The assumption this answer choice this answer choice describes can be diagrammed:

~~*Earth Overcrowded*~~ → **No one** will prefer to live on moon

This is **close to the converse** of an assumption of the argument. That assumption is

Earth Overcrowded → **Some** will be willing to, or can be forced to, live on the moon

Converses of an argument's assumptions are **never assumptions** themselves!

Section 4, Question 20: Strengthening Question

Evidence

*The most important issue for viewers is whether it will rain.
On **most** occasions we have predicted rain, we have been right.
Our competitors have been right **50 percent or less** of those times they have predicted rain.*

Conclusion

Our forecasts are more reliable than our competitors

This seems like a convincing argument, but we know must consider what I like to call the **Overly Conservative Bouncer Problem**.

Suppose we hire a bouncer to work the door for our party. We hire him because we hear that that he has *never let in **anyone disruptive** to an event*. At the party, however, we discover that has such a good record because *he barely lets in **anyone at all!***

A good bouncer must keep out the lame, disruptive people **and** let in the cool, party people. A overly conservative bouncer that keeps out all the bad people, but lets in only five cool people is probably worse than a more liberal bouncer who lets a few idiots in but also admits hundred of awesome partiers. Similarly, a good predictor must predict accurately when it will rain **and** when it will not. Overly conservative weather forecasters with a 100 percent accuracy rate *when they predict rain* are not very good **if** they predict rain **twice a year and** it rains **50 times a year**.

(A) is **CORRECT**. It **blocks the objection** that the meteorologist's station is like the **overly conservative bouncer**.

(B) – (D) make no claim about the accuracy of the stations predictions of rain, so they have **No Impact**.

(E) has an **Unknown Impact**, because we do not know whether or not these predictions were correct.

The problem of the **Overly Conservative Bouncer** is related to the **Overly Optimistic Stock Market Guy**. In 2012, 23 stocks soared in value, and this guy predicted **every one of them!** The problem is that he predicted **every publicly sold stock**, from Google on down, would soar in value.

Preptest 55 – October 2008

Section 1, Question 14: Flaw Question

Evidence

*Acquiring expensive new tastes is a drain on your purse and may expose you to
obnoxious new sensations
The effort required proves the superfluity of these tastes*

Conclusion

You should never make an effort to acquire expensive new tastes

A strongly worded moral command, such as this conclusion, is very difficult to prove. Had the conclusion been more measured the argument would have been much better: “*Acquiring expensive new tastes has significant drawbacks*” would be much easier conclusion to support. An argument that only focuses on the negative effects of an action and concludes that one ***should never*** perform that action commits a significant flaw.

(E) CORRECT. The argument’s *strongly worded moral conclusion* opens the argument up to this criticism. Perhaps acquiring an expensive tastes, such as a taste for expensive designer hats, has some drawbacks, but there may be positives, like exposure to new social circles and chance of meeting Pharrell.

(A) This describes the flaw of Circular Reasoning.

(B) This answer choice attempts to describe an assumption of this argument, but the answer choice uses ***Language of Unnecessary Strength***: “*will lead to financial irresponsibility.*”

(C) This answer choice is ***Technically True but Uninteresting***. A term with an obvious definition, even a “*vague term*”, so long as that term does not change in meaning in the course of the argument, need not be explicitly defined.

(D) This answer choice ***Distorts the Argument’s Conclusion*** by claiming the conclusion was a ***Causal Statement***.

Section 1, Question 16: *Must Be True Question*

Evidence

*On almost every Wednesday, Zack's schedules free poetry readings
Every day there is a poetry reading, Zack's offers half-priced coffee all day.*

Almost every is equivalent to “nearly 100 percent.” So the first statement is a *percentage statement*, and the **predicate** of that *percentage statement*, **free poetry**, is a sufficient condition in the conditional statement that follows:

Free poetry → Half-priced coffee all day

So we can conclude:

***Almost every** Wednesday there is half-priced coffee all day.*

Almost every implies **most**. So the following statement is also true, even if it does not capture the full meaning of the original statement:

***Most** Wednesdays there is half-priced coffee all day.*

(A) We know nothing about the other days of the week. It might be the case that **every** Sunday has half-priced coffee all day.

(B) This answer choice rewords an **almost every** statement into a **most** statement (which is legitimate) **and reverses** that **most** statement, which is wrong! **Most** and other *percentage statements* can never be reversed!

(C) This is close to the **converse** of the *conditional statement*. **Converses** always **could be false**!

(D) **CORRECT**. The “*if not all*” part of this answer choice, because it is stated conditionally, actually improves the answer choice by making it more likely to be true!

(E) An **almost every** statement, like a **most** statement, does not imply a **some...not statement**.

“*Almost every X is Y*” does **not imply** that “*Some X are not Y.*”

Perhaps we have 100 Y, and we have examined 95 X, all of which are Y. It would be correct to claim that **almost every** X is Y, but incorrect to claim that **Some X are not** Y.

In the case of this stimulus, it could certainly be true that on Wednesdays when there is no poetry, other events, or even Zack's general good nature, require half-priced coffee!

Section 1, Question 21: Principle – Conforms Question

Premise, introduced by the **Transition Word** “however”

Advertisers will not pay to have their commercials aired during a TV show unless many people buy the advertised products

Intermediate Conclusion, introduced by the **Conclusion Word** “so”

If people generally fail to buy these products, these shows will be canceled

Main Conclusion, introduced by the **Conclusion Word** “thus”

*Anyone who feels a show is worth preserving **ought** to buy the products advertised during the show.*

The intermediate conclusion is a **descriptive** cause and effect, and conditional, statement. This statement is well supported by the premise. The main conclusion is a **moral judgment** because of the word **ought**. The **principle**, therefore, will provide the *missing moral statement* that allows one to make the *moral judgment* in the conclusion.

All of these answer choices seem so similar! Because this is a Principle – Conforms Question, a claim **precisely connecting** the *intermediate conclusion* to the *main conclusion* will be correct.

All of the answer choices have the same *if/then* structure. Whenever an *if/then* statement seeks to describe an assumption or principle of an argument, the **if** part must refer to the evidence – in this case the *intermediate conclusion*. The **then** part must describe the *main conclusion*.

(B) CORRECT.

(A) The *intermediate conclusion* stated that the show would be canceled *unless many people* took certain actions. The **if** part of this answer choice states that an **individual** must act: *unless one* took certain actions. This answer choice **does not connect to the evidence**.

(C) This answer choice completely distorts the argument. The argument commands *anyone who believes a show is worth preserving* to perform a certain action. This answer choice commands **everyone**, without qualification, to take an action! This answer choice **distorts the conclusion**.

(D) This answer choice also distorts the conclusion by vaguely commanding a show's fans to take "*some actions*." This answer choice is a **necessary assumption** of the argument, and I have written before that **Principle – Conforms** questions are very similar to **Necessary Assumption Questions**. A **Principle – Conforms Question**, however, requires an answer that **most precisely matches** the argument's strength and structure. (B) is better than (D) because (B) is *both a sufficient and necessary principle* of the argument, whereas (D) is merely *necessary*. This is a rare instance of a principle to which the argument **conforms less closely** than that in another answer choice!

(E) This answer choice correctly describes the argument's evidence, but it distorts the argument's conclusion: this principle commands **not all those who feel a show is worth preserving**, but those who feel "*most strongly*."

Preptest 56 – Section 2: Disagreement Question

Tania

Good art criticism is not fair
*One can be give an unbiased opinion **only** about those things that do not interest one*
Art is a passion
Good art criticism cannot be separated from emotion

Monique

Art is not simply a passion
The best art critics engage passionately the artwork
*But, render their criticism **only** after shedding their biases and consulting general principles of aesthetics*

When doing a Disagreement Question, always look for two things: **elements that repeat** in both speakers' statements, and **strong language**, because strong language is the easiest language to reject!

Both speakers make strong, conditional statements about **bias** and **art criticism**.

Tania

Unbiased → ~~Interested~~
Interested → Biased

Good art criticism → Involves Emotion

Monique

Best art criticism → Unbiased (Sheds its biases)

(A) This direct quote from Monique might not be rejected by Tania. Tania thinks that *good art criticism must be passionate*, but that does not imply that she thinks *art is **exclusively** passion*.

(B) **CORRECT.** Tania rejects this claim. If we accept the very reasonable assumption that *Involves Emotion → Interested*, we can conclude that Tania believes that *good art criticism **cannot** be unbiased*. Monique must accept this claim, but at first it can be difficult to see why: the claim is not equal to, it is weaker than, what Monique states, but we must not **logical inequality does not imply logical opposition**. Monique cannot reject this claim! If she rejects this claim, she must believe, as Monique does, that *good art criticism is **never** unbiased – **never** is the logical*

opposite of **sometimes**. This contradicts Monique's statement that the *best art criticism is unbiased*. Because Monique cannot reject this claim, she must accept it!

(C) They would both reject this claim. Monique believes that critics should feel passionately about art, but their criticism should be dispassionate.

(D) They would probably both accept this claim.

(E) They might both accept or reject this claim! It is important to understand that **necessity does not imply superiority**. Tania believes that *passion* is a requirement for good art criticism, but she might believe that other requirements, such as knowledge of art and good writing skills, are even more important! Monique states that *passionate engagement* and *shedding biases* are **both necessary**: neither one is stated to be *more important* than the other!

Section 2, Question 24: Strengthening Question

Evidence

*40,000 lead seals remain from the early Byzantine Empire
When the documents they were attached to were opened, most seals had served their
purpose
Once they had served their purpose, most seals would have been reused*

Conclusion

*The number of early Byzantine documents sealed in this way must have been many
times greater than 40,000*

The argument seems convincing, but you cannot strengthen an argument that is completely valid! There must be a gap somewhere. While it can sometimes be a mistake on an Additional Information Question to try predict an answer too precisely, some analysis of the argument will usually be useful.

Always pay attention to any condition that repeats in the argument's evidence: here that condition is "*served their purpose.*" If we knew that most of these seals served their purpose, then we would know the seals were probably reused and the conclusion would be very strongly supported. We know that most seals had *served their purpose* **after** the documents they were attached to were **opened**. The argument **assumes** that a significant number of those documents were opened. Since this is a Strengthening Question, the stronger the language the better: the more documents opened, the better the answer choice!

(A) **CORRECT.**

(B) That such evidence was destroyed does not significantly weaken the argument, but knowing that relevant evidence is lost is rarely, if ever, a good strengthener.

(C) By establishing that lead was readily available, this very slightly weakens the argument. The argument depends on the reuse of lead seals; if a resource is readily available, it is less likely to be recycled.

(D) This answer choice *severely* weakens the argument. If they could have been as many as 40,000 documents that were this important, it is possible that none of the seals that remain were reused!

(E) This places an upper limit on the number seals circulating at any given time.

Section 3, Question 16: Sufficient Assumption Question

The placement of the **Evidence Word** for reveals that the first statement is the conclusion and the statements that follow are the evidence:

Evidence

Without trust, there **can be no** meaningful emotional connection
(~~Trust~~ \rightarrow ~~Emotional Connection~~)

Without meaningful emotional connection, we feel isolated.
(~~Emotional Connection~~ \rightarrow Feel Isolated)

Conclusion

Trust is **essential** for happiness
(Happiness \rightarrow Trust)

The evidence can be combined

~~Trust~~ \rightarrow ~~Emotional Connection~~ \rightarrow Feel Isolated

At this point, the goal is to have the same conditions in the sufficient condition of the conclusion and the beginning of the evidence chain: **Trust**. We can achieve this by taking the contrapositive of the conclusion to get the following:

~~Trust~~ \rightarrow Happiness

At this point, the argument has the following structure:

~~Trust~~ \rightarrow ~~Meaningful Connection~~ \rightarrow Feel Isolated

\therefore

~~Trust~~ \rightarrow Happiness

The sufficient conditions are the same:

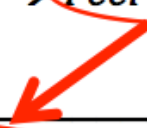
~~Trust~~ → ~~Meaningful Connection~~ → ~~Feel Isolated~~

∴ ~~Trust~~ → ~~Happiness~~

So we can predict the *sufficient assumption*:

~~Trust~~ → ~~Meaningful Connection~~ → ~~Feel Isolated~~

∴ ~~Trust~~ → ~~Happiness~~



The correct answer will be

~~Feel Isolated~~ → ~~Happiness~~
or
~~Happiness~~ → ~~Feel Isolated~~

(A) is **CORRECT**.

Preptest 57 – June 2009

Section 2, Question 16: *Role of Statement Question*

Background Information

Dictation software allows a computer to produce a written transcript of spoken words

Counterclaim, introduced by the **Transition Word** “*although*”

Dictation has been promoted as a labor saving device

Conclusion

Dictation fails to live up to its billing

First evidence statement

The laborious part of writing is the thinking and editing, not the typing

Second evidence statement, introduced by the **Continuation Word** “*and*”

Proofreading squanders any time saved typing

Some LSAT takers think that the last statement is an **intermediate conclusion**. It seems to be so because it mentions “*typing*”, as does the previous evidence statement. If this last statement were an **intermediate conclusion**, (A) would be correct! But this statement cannot be an intermediate conclusion, because a **Continuation Word** - such as ***and, besides, furthermore, or moreover*** – cannot introduce a conclusion!

(B) is **CORRECT**.

Section 2, Question 25: Must Be True

Evidence

*The law regarding campaign contributions in the city of Weston is as follows:
Contributions greater than \$100, made by nonresidents who are not former residents
must be registered with the city council
(Greater than \$100 + ~~Resident~~ + ~~Former Resident~~ → Register)*

*Brimley's campaign complied with the law: accepted contributions **only** from residents
and former residents
(Brimley: Residents + Former Residents)*

(A) It is possible that some nonresidents, but former residents, contribute more than \$100 to Brimley.

(B) According to the law stated, there is no requirement that Brimley register any contributions.

(C) **CORRECT.** This answer choice might seem like it *assumes the converse* of the campaign law.

Law: Greater than \$100 + ~~Resident~~ + ~~Former Resident~~ → Register

Answer choice: Resident or Former Resident → ~~Register~~

The stimulus, however, establishes that the “*the law regarding campaign contributions in the city of Weston is as follows.*” So there is only one law requiring the registration of campaign contributions! If there is only one law, and it does not apply to Brimley’s campaign, the campaign **need not** register **any** contributions.

(D) It is possible that Brimley did not register any contributions.

(E) It is true that that **does not require** Brimley to register any contributions. It is **not** the case, however, that the law **forbids** Brimley from registering any contributions. So this answer choice is **not necessarily true**.

Section 3, Question 25: *Most Strongly Supported Question*

While Most Strongly Supported Questions typically do not follow arguments, the Manager's statements actually form an argument:

Evidence

*Our company has decided abandon our "difficult to use" software and replace it with the software advertised to be "easier to use."
Several other companies have made this switch, and while their employees can use the new software, many of these employees unofficially use the old software whenever possible*

Conclusion

Our company should reconsider the proposal to change software.

(A) An **Unsupported Comparison**: many employees in the region prefer their old software, but the manager does not explicitly compare the software packages "flexibility."

(B) This **comparison** is very slightly supported by the Manager's statements. It seems far too general, but should not be eliminated immediately.

(C) Another **Unsupported Comparison**: many employees in the region prefer the old software, but the manager does not that the new software "lacks some of the capabilities of the present software."

(D) The prediction of "two classes of employees" is an **Unsupported Element**.

(E) CORRECT. This is a prediction that is by no means **implied** by the stimulus. But I know of no better contemporary question that demonstrates the difference between a **statement implied** and a **statement supported**. Obviously, the manager's employees might be less resistant the change than other employees in the region. They might be younger, or the manager's business might have very different computing needs than the other local businesses. Either of these facts would weaken this answer choice. It is, however, the **most strongly supported** of the five answer choices. It is better than (B), which is far too general a statement – it compares "flexibility" and "familiarity" in general. The new package is **advertised to be** "more flexible," but is never stated to **actually be more flexible**. (E), on the other hand, compares the two packages. On the assumption that the employees at the manager's company will react similarly to other employees in the region, this answer choice is fully supported. This assumption is a questionable assumption, but it more likely to be true than the many assumptions required to make (B) fully supported. Such

assumptions include that the *advertisements are truthful* and that the *experience of the employees in the region is representative of all employees everywhere!*

(E) is imperfect, but it is better than (B) and the *best of the five!*

Surprisingly, on the same page of this test, the correct answer to Question 23 also clearly demonstrates the difference between a ***statement implied*** and a ***statement most supported!***

Preptest 58 – September 2009

Section 1, Question 24: Weakening Question

Evidence

*The Kiffer Forest Preserve is within the Abbimac Valley
The Kiffer Forest Preserve is where most of the bears in the valley reside
During the eight years that main road has been closed, the population of the **preserve**
has **doubled***

Conclusion

*If the road is kept closed, the **valley's** population will increase.*

The evidence is about the **preserve's** population, yet the conclusion is about the **valley's** population. The argument clearly assumes that *at least some of the new bears in the preserve came from **outside the valley***. Obviously, if the new bears in the preserve were already living in different parts of the valley, this argument fails. Easy enough, right?

(A) **Strengthens** the argument by **removing the alternative explanation** that the increased population is due primarily to bears within the preserve reproducing; it has an **Opposite Impact**.

(B) **Strengthens** the argument by helping to prove the assumption that *at least some of the new bears in the preserve came from **outside the valley***; another **Opposite Impact**.

(C), (D), and (E) all seem to **challenge the assumption**, however. So which is correct?

(C) and (D) are **Lesser Weakens**. They challenge the assumption: they suggest that the increase in the preserve was **partially** drawn from bears already in the valley.

(E) is **CORRECT**. If the total bear population in the valley has remained constant, this proves that the increase in the preserve was **entirely** drawn from bears already in the valley. This answer choice has a far greater impact than do (C) and (D). There is no way for the conclusion to be reasonable if this answer choice is true.

Section 1, Question 26: *Method of Reasoning Question*

Evidence

Wolves, domesticated dogs, and foxes all do not tolerate an attack on a rival that has demonstrated submission

Conclusion

It would be wrong – erroneous – to deny that animals have rights on the grounds that only human beings are capable of obeying moral rules.

The conclusion is not “*animals have rights*.” The conclusion is that the following argument is flawed:

Only human beings are capable of obeying moral rules. Therefore, animals have no rights.

So the conclusion of the argument contains a counterargument! The argument weakens this argument by using the **counterexamples** of *wolves, dogs, and foxes* to disprove the counterargument’s premise.

(A) is **CORRECT**.

(B) Students are often drawn to this answer choice. “*I don’t really know what **inductive** means, so that must mean that this smart-sounding answer choice is correct!*” **Never chose an answer choice simply because it sounds smart!**

To argue **inductively** is to form an argument in which the premises strongly support, but cannot determine the necessity of, the conclusion. Most LSAT arguments are **inductive** – any argument that forms a generalization, argues from analogy, draws a causal conclusion, or makes a prediction is **inductive**.

Outside the LSAT, **all** scientific theories are formed through **inductive reasoning**; therefore, all scientific theories could be disproved by the addition of new evidence!

Very few LSAT arguments are **deductive**: only those arguments that draw a conclusion that **must be true** are **deductive**.

One could even rename **Most Strongly Supported Questions** as **Inductive Conclusion Questions**, and **Must Be True Questions** as **Deductive Conclusion Questions**! If you want to do so, go ahead!

I have chosen to avoid this terminology until now because I have found that starting a course with too many technical terms creates an unnecessary burden on students new to the study of logic. **Sufficient and Necessary** is hard enough!

However, the point of this answer choice is the **LSAT would never expect you to know a technical term like "inductive"**. (B) fails because it distorts the argument: the argument never states that **all** animals, which would include insects, jellyfish, and sponges, possess morality!

(C) The philosopher probably believes in this principle. The examples of wolves, dogs, and foxes prove that certain animals are capable of moral rules, and therefore might be entitled to certain rights.

(D) The philosopher never states that denial of the philosopher's conclusion entails a logical contradiction. The philosopher states denial of the philosopher's conclusion entails a belief in an argument based on a false premise.

(E) The philosopher argues against a claim that, if accepted, would apply the concept of morality in **too limited** a manner, not too broadly!

Section 4, Question 23: Strengthening Question

Evidence

Eight large craters in a straight line could have been caused by meteorites or volcanic events.

Because the craters are in a line, it is unlikely that some were caused by meteorites and others by volcanic events.

The craters are of different ages.

Conclusion

The meteorites were probably caused by volcanic events.

The only premise that directly supports the volcano explanation over the meteorite explanation is the last premise, introduced by the **Evidence Word** “because.” But we are not told why “different ages” supports the volcano explanation over the meteorite explanation! The correct answer will have to tell us:

(A) This answer choice has No Impact: we want “*Different Ages* → *Volcanoes*”, and this answer choice states, in at least one instance, “*Different Ages and Volcanoes*.” It would be incorrect to conclude that this weakens the argument, but it certainly does not strengthen either!

(B) **CORRECT.** This weakens the *meteorite explanation*, thereby strengthening the *volcano explanation*. The skeptical among you might object: “This answer choice states that “no **known** natural cause” could account for a straight line of meteorite craters of different ages. Perhaps there is a *natural cause* **about which we do not know!** To think that this answer choice proves the conclusion is true is to **Confuse Fact with Knowledge!**

You would be absolutely correct to make these objections! But you do not get to choose the **strengtheners** you want; you must choose from among the strengtheners they give you. This answer choice, while it **does not prove** that the conclusion is true, **makes** the conclusion **more likely** to be true. A quick survey of the remaining answer choices reveals that (B) is the best strengthener available.

(C) This weakens **both** the *meteorite and volcanic explanations*, and thus has an **Opposite Impact**.

(D) This severely weakens the volcanic explanation, and thus has an even stronger **Opposite Impact**.

(E) This answer choice has **No Impact**: it would *strengthen* if the craters in the argument were of the *same ages*.

Preptest 59 – December 2009

Section 2, Question 19: *Must Be True* Question

Evidence

There are bankers, lawyers, and athletes present.

*All the bankers are athletes
(Bankers \rightarrow Athletes)*

*None of the lawyers are bankers
(Lawyers \rightarrow ~~Bankers~~)*

You can take the contrapositive of the second conditional statement to get the following:

Bankers \rightarrow ~~Lawyers~~

The repeated element “Bankers” is a sufficient condition in two separate statements

*Bankers \rightarrow Athletes
Bankers \rightarrow ~~Lawyers~~*

This allows for a combined statement:

*Bankers \rightarrow Athletes **and** ~~Lawyers~~*

This allows for a connection between “Athletes” and “~~Lawyers~~,” but not a conditional one. The connection is a **some** statement:

*Athletes **SOME** ~~Lawyers~~*

(C) is CORRECT. Also acceptable would be the equivalent “*Not all of the athletes are lawyers.*”

Remember, a some statement *can be reversed*, but **cannot be altered** in any other way: no changing any of the positives to negatives, or vice versa, is allowed! This is why (B) is incorrect.

Section 2, Question 20: Flaw Question

Evidence

*Investigators sent back items to our laboratory, and over 20 percent of these items were defective.
Our contract requires the supplier limit defects to 5 percent*

Conclusion

The supplier has violated our contract

Most LSAT takers realize that the argument **assumes** that the items sent by the investigators from the manufacturing locations to the laboratory are **representative** of the items produced. But knowing that assumption is only the first step!

(A) Many students chose this incorrect answer choice because they, not unreasonably, relate the **Too Small A Sample** flaw to the **Unrepresentative** flaw. These flaws are definitely related: a sample size that is **too small** is more likely than an adequately sized sample to **unrepresentative**, and vice versa. But these flaws need direct support to be correct answers. While it is *possible* that the number of items tested by the laboratory is too small, there is no direct evidence that it is such.

(B) This answer choice is the most commonly chosen incorrect answer, because it seems to address the **representativeness** issue. An answer choice that begins with word **presumes**, however, *attempts to describe an assumption* of the argument. It is not the case that the argument assumes that the inspectors were **just as likely to choose a defective or nondefective item**. The argument assumes that the inspectors choices were representative, and certainly not deliberately skewed toward choosing defective items, but “just as likely” is **Language of Unnecessary Strength!**

(C) If this *possibility* were true, the argument would not be significantly weakened, for the argument need not assume that the defective items are not from only a few bad factories.

(D) **CORRECT.** If this possibility were true, the argument’s crucial assumption, that *the items sent by the investigators from the manufacturing locations to the laboratory are **representative** of the items produced*, is false!

(E) “Equal number of visits” is also **Language of Unnecessary Strength!**

Section 3, Question 19: *Must Be True Question*

The first sentence is a diagramming nightmare!

*If understanding a word **always** involves knowing its dictionary definition, **then** understanding a word **requires** understanding the words that occur in that definition.*

The if/then statement is easy to diagram:

*Understanding a word **always** involves knowing its dictionary definition → Understanding a word **requires** understanding the words that occur in that definition.*

The **always** and **requires** statements can also be diagrammed!

(Understand Word → Know Dictionary Definition)
→
(Understand Word → Understand Words in Definition)

If you feel that diagramming a statement will be perilously difficult, do not be a hero! Simply try to see how the **unconditional fact** connects to the **conditional statement**:

Some of word of babies: ~~Know Dictionary Definitions~~

It must be emphasized that this **unconditional fact** does not allow us to draw any conclusion about “babies.” Why? Because the conditional statement in the first sentence is a conditional statement! If $X \rightarrow Y$ is true, we do not know whether X, Y, both, or neither, is true. A *conditional statement establishes a relationship* between two conditions; it **does not establish whether some of those conditions are true!**

So, it is not known whether “Understand Word → Know Dictionary Definitions” is true, because, although it can be expressed as a conditional statement, **it was itself a sufficient condition of a conditional statement!** If it were true, we could conclude that *babies do not understand some of the words they utter*: (A) would be correct! However, *when the unconditional fact does connect to another conditional statement in the stimulus, expect the correct answer to be expressed conditionally*:

(E) **CORRECT**. If babies understand the words **all** the words they utter – Understand Word – and, as we know from the stimulus, they do not know dictionary definitions – ~~Know Dictionary Definitions~~ – then the sufficient condition in the stimulus’ conditional statement – Understand Word → Know Dictionary Definition – is false!

The other incorrect answers:

(B) We do not know whether these people can, or cannot, understand words without knowing the words' dictionary definitions.

(C) The sufficient condition of this answer choice is the ***negation*** of the sufficient condition in the stimulus. ***Negations of sufficient conditions never yield deductions!***

(D) This answer choice is very ***close to the converse*** of the stimulus' conditional statement.

Preptest 60 – June 2010

Section 1, Question 22: Sufficient Assumption Question

Evidence

*Money's universality across cultures is matched only by language.
Language is an innate ability, but money is an artificial human invention*

Conclusion

It is probable that the invention of money occurred independently in more than one society.

Remarkably, for a **Sufficient Assumption Question**, the conclusion is quite reasonable. If we have evidence that the invention of money occurred in just two separate societies, the conclusion is fully supported! Diagraming conditional statements is not very useful here, but there is a distinct **Unsupported Element** in the conclusion: “*invented independently in more than one society.*”

You can predict the correct answer:

*Because money is **universal** and an **artificial invention**, it was probably invented in **more than one society**.*

This prediction actually sounds like a reasonable assumption, but there is, as far as I can see, *only one reasonable objection*: perhaps money was invented in one place – Mesopotamia comes to mind – and spread out to every human society from there.

(A) **CORRECT**. This answer choice might seem like a **necessary assumption** – it is weakly worded and **blocks an objection**. Even if it were a necessary assumption, however, this would not be a reason for elimination: *assumptions can be sufficient and necessary*. This answer choice is actually not a **necessary assumption**: even if **no** societies are so geographically isolated, it is still possible that money was invented in more than one place: Mesopotamia and China, for instance. This answer choice is a sufficient assumption, however: it **blocks the only reasonable objection to the argument**! When an argument is quite reasonable, a weak claim can be **enough** – sufficient – to make the argument valid!

(B) That language emerged at different times does prove that it was independently invented.

(C) The argument is not about other universal features of human society, such as language, that are not inventions.

(D) This proves, by the contrapositive, that “money is useful”, establishing nothing about the invention of money.

(E) The argument is about the invention, not the continuing use of, money. Also – on the true assumption that no human society has abandoned language – this answer choice contradicts the argument’s claim that money is as universal as language.

Section 1, Question 23: Principle – Justify Question

Evidence

*Definition of libel: damaging the reputation of someone by making false statements
The result of strong libel laws is that no one will say anything bad about public figures.*

Conclusion

Strong libel laws make it impossible for anyone to have a good reputation.

The question type and the **repeated element** “Strong Libel Laws” strongly suggest that we should predict with a diagram:

Strong Libel Laws → ~~People Say Anything Bad~~

∴ Strong Libel Laws → ~~Good Reputation~~

The sufficient conditions in the evidence and conclusion are the same, so the predicted answer is:

Strong Libel Laws → ~~People Say Anything Bad~~

∴ Strong Libel Laws → ~~Good Reputation~~

The correct answer will be

~~People Say Anything Bad~~ → Good Reputation

OR

Good Reputation → People Say Something Bad

(E) is **CORRECT**. This answer choice does not match exactly our prediction, but it is very close. It can be diagrammed

Good Reputation → Others Have Bad Reputations

If we make the very reasonable assumption that other public figures having a “*bad reputation*” depends on at least some people willing to “*say something bad*” about those figures, this answer choice is logically equivalent to the prediction. The correct

answer to a **Principle – Justifies Question** will usually complete the argument as would the correct answer to a **Sufficient Assumption**. In this case, the correct answer is very close to that; it is certainly the answer choice that “*most helps to justify*” the conclusion.

(A) This is the **inverse** of the conclusion.

(B) This **contradicts** the conclusion.

(C) The argument is not about what **should** be considered libelous, but about the impact of laws against libel.

(D) On the reasonable assumption that some negative statements about public figures **can** be proved, this answer choice **severely weakens** the argument.

Runner-up: Section 3, Question 11

The conclusion drawn is quite reasonable. When this is the case, expect the correct answer to a **Necessary Assumption Question** to **Block an Objection**.

(D) **CORRECT**. If the mounds of coral **were in especially fragile condition** just before the black swept in, then it is quite possible that it was not the black water’s intensity, but the fragility of the coral, that caused the latter’s extinction. If this is the case, the argument is severely weakened. The **logical opposite** of this answer choice severely weakens the argument, thus proving the answer choice correct!

Section 3, Question 12: *Must Be True Question*

Evidence

Many nurseries use the label “miniature”, but some nurseries use the term differently. Some nurseries label nectarine trees of the Sweet Stark Melody variety as miniature, some do not.

If a variety is not suitable for growing in a tub or a pot, it cannot be correctly labeled “miniature”

It is important to note that no conclusion can be drawn! The last statement can be diagrammed:

~~*Grow in Tub OR Grow in Pot*~~ → ~~*Correctly Label Miniature*~~

The negated **or** statement can be written as an **and** statement:

~~*Grow in Tub*~~ **and** ~~*Grow in Pot*~~ → ~~*Correctly Label Miniature*~~

Yet we do not know whether or not the *Sweet Stark nectarines* can be grown in a tub or a pot, so we cannot say whether the *Sweet Stark nectarines* can be correctly labeled miniature. When no connection can be drawn between the conditional statements and unconditional facts in the stimulus, expect the correct answer to be a **conditional statement**.

(E) CORRECT. Remember that **unless** is equivalent to **if not**:

*Sweet Stark nectarine: ~~Grow in Tub~~ **and** ~~Grow in Pot~~ → Some nurseries incorrectly label Sweet Stark*

This conditional statement correctly combines the unconditional fact that “*some nurseries label Sweet Stark nectarines as ‘miniature’*” with the conditional statement in the stimulus.

(A) There is no mention of **most** nurseries in the stimulus.

(B) This answer choice can be diagrammed:

*Some nurseries correctly label Sweet Stark → ~~Grow in Tub~~ **and** ~~Grow in Pot~~*

This somewhat confusing answer choice seems tempting if we consider the nurseries that **do not** label the *Sweet Stark* a **miniature**. But those nurseries might be correct even if the *Sweet Stark* does grow in a tub or grow in a pot. Perhaps there are other reasons to label the *Sweet Stark* a non-miniature. If you cannot provide a simple proof for a confusing answer choice, there is probably a better one!

(C) and (D) both make unconditional claims about the correctness of the miniature label. (D) is more tempting, because its language is weaker; because, however, the stimulus allows no judgment on the correctness of the miniature label, these both must be incorrect.

Runner-up: Section 3, Question 22

The conclusion draws the **Unsupported Judgment** “government is **responsible**.” The correct answer must address the issue of “government responsibility.”

(A) **CORRECT**. The term “*indirect cause*” can be confusing. An **indirect cause** is any cause that, through an intermediate cause, produces a certain effect. So the government policies, through the intermediate cause of “consumer demand”, are an **indirect cause** of the rise in the price of gasoline.

(B) “**Unforeseen consequences**” is an **Unnecessary Element** of this answer choice. Perhaps the devious government officials, to wean consumers off of environmentally and politically dangerous fossil fuels, knew that their actions would result in higher gasoline prices! This Fox News Fantasy seems unlikely, but it is possible.

Preptest 61 – October 2010

Section 2, Question 11: *Weakening Question*

Evidence

A study recorded the average time it took drivers to leave a parking spot:

When another car was quietly waiting: 39 seconds

When another car was honking impatiently: 52 seconds

When no one is waiting: 32 seconds

Conclusion

Drivers feel possessive of their parking spaces, and that possessiveness increases in reaction to indication another driver wants the space.

(A), (C), and (E) all weaken the argument! Let's look at the other answer choices first.

(B) The argument is not about *entering* a parking space.

(D) This would have weakened the argument if it had stated that parking spaces in shopping malls are **unrepresentative** of people's **degree of possessiveness** toward spaces.

As I have said often, the **best weakeners explain the evidence as they undermine the conclusion.**

(C) explains why another car present would increase the leaving time – the 39 seconds.

(E) explains why a honking car would further increase the leaving time – the 52 seconds.

But **only (A)** explains **both** why another car present would increase the leaving time **and** why a honking car would further increase the waiting time. (A) is **CORRECT** because it better accounts for the evidence, it deals with the data more effectively than the other answer choices. When an argument presents significant data in support of its conclusion, the correct answer almost always explains that data!

Section 2, Question 17: *Method of Reasoning Question*

This question is a rare variety of Method of Reasoning Question. The question states clearly that the argument contains an analogy: your task is to find the element analogous to the standard antibiotic.

Most test-takers choose (D), because we appreciate antibiotics just as we appreciate cooks – Padma Lakshmi, Anthony Bourdain, Rachel Ray – we let these people into our homes every day.

But the “*cook*” is actually analogous to the “*bacteria*”:

*For bacteria, the **difficulty** of developing resistance to an herbal remedy is like a cook’s **difficulty**....*

It might be insulting and unfair to most cooks to compare them to bacteria, just as it might be insulting and unfair to bacteria to compare them to Gordon Ramsey, but no one ever said the LSAT was fair; and the LSAT can be as insulting as an encounter with Gordon Ramsey.

The argument stated that it is easier for the bacteria to develop resistance to a “*standard antibiotic*” just as is easier for the cook to prepare a meal for “***a single guest.***”

(A) is **CORRECT**.

The “*herbal remedy*” is analogous to the “*multiple guests.*”

The “*pleasure*” experienced by the single or multiple guests is analogous to the bacteria’s “*ability to develop resistance*” to the standard antibiotic or the herbal remedy.

Section 2, Question 20: Weakening Question

Evidence

*A computer program for EKG diagnosis of heart attacks was pitted against a very experienced, highly-skilled cardiologist.
The computer program correctly diagnosed a significantly higher proportion than the cardiologist of cases that were later confirmed to be heart attacks.*

Conclusion

EKG interpretation should be left to computer programs.

At issue here is an issue related to the Overly Conservative Bouncer and Overly Optimistic Stockbroker, first presented in the discussion of Preptest 54 (June 2008), Section 4, Question 20. Perhaps, like the Overly Optimistic Stockbroker, the computer diagnoses a heart attack far too often!

Suppose the computer and cardiologist each examined EKG readings from 200 'cardiac events.' Suppose the 100 of these events were heart attacks and 100 were not heart attacks. If the computer diagnosed 180 EKG readings as heart attacks, it could have correctly diagnosed all 100 of the readings – *100 percent* – that were heart attacks, but it would have misdiagnosed 80 EKGs that were not heart attacks: so the computer would have **60 percent overall** accuracy rate. If the cardiologist diagnosed 100 EKG readings as heart attacks, she could have diagnosed 80 readings that turned out to be heart attacks – 80 percent, less than the computer – but correctly diagnosed all 100 the turned out not be heart attacks: she would have had **90 percent overall** accuracy rate!

(A) This has slightly strengthens the argument, giving the answer choice an **Opposite Impact**.

(B) This answer choice has No Impact: diagnosing a heart attack from EKG data can hardly be called a "*subjective judgment*."

(C) **CORRECT**.

(D) This is an example of a weakener that **attempts to make the argument meaningless**: even if in a majority of cases EKG data is insufficient to make predictions, this answer choice has No Impact on an argument that attempts to establish that a computer is better than a cardiologist.

(E) This is the most commonly chosen incorrect answer choice. Many students correctly note the argument relies on evidence about *one cardiologist* yet draws a

conclusion about computers and cardiologists *in general*. Yet the argument states that the cardiologist pitted against the computer is a “**very experienced, highly skilled** cardiologist.” If the cardiologist in the argument were *unrepresentative*, then the average cardiologist would be less impressive, and less likely to diagnose more effectively than a computer. So, this answer choice actually **strengthens** the argument! It has an **Opposite Impact**.

Preptest 62 – December 2010

Section 2, Question 8: Flaw Question

Spaceship

Section 2, Question 19: *Must Be True* Question

Most Pet Stores Sell Exotic Birds
Most that Sell Exotic Birds Sell Tropical Fish
Sell Tropical Fish + ~~Sell Exotic Birds~~ → Sell Gerbils
Independently Owned → ~~Sell Gerbils~~

This first thing to note is the two **most statements** cannot connect to each other: *you can connect two most statements only when they share the same subject*, and here the **predicate** of the first statement is the **subject** of the second statement. You can also cannot connect the two **most statements** to the **conditional statements**. To do so, an element of the most statement must be the sufficient condition of a conditional statement. The **sufficient condition** of the third statement is *Sell Tropical Fish and ~~Sell Exotic Birds~~*. “Sell tropical fish” is not enough for a connection! So the two most statements are entirely a distraction from connecting the conditional statements.

Take the contrapositive of the fourth statement

Sell Gerbils → ~~Independently Owned~~

Make a chain:

Sell Tropical Fish + ~~Sell Exotic Birds~~ → Sell Gerbils → ~~Independently Owned~~

Since you only connected two statements, the correct answer will probably describe the contrapositive of this chain:

*Independently Owned → ~~Sell Gerbils~~ → Sell Exotic Birds **or** ~~Sell Tropical Fish~~*

(D) and (E) both seem to describe this contrapositive!

(E), however, is incorrect. An *Independently Owned* pet store that ~~*Sells Tropical Fish*~~ might or might not *Sell Exotic Birds*. Once we know that the does ~~*Sells Tropical Fish*~~, we have fulfilled the **necessary condition**, and no other inferences are possible.

It is less easy to see why (D) is correct. Remember that the word **no negates the necessary condition**. The answer choice:

*No independently owned pet store sells tropical fish **but** not exotic birds.*

The entire necessary condition must be negated:

*Independently Owned $\rightarrow \sim(\text{Sell Tropical Fish **and** Sell Exotic Birds})$*

A negated **and** statement becomes an **or** statement:

Independently Owned $\rightarrow \text{Sell Tropical Fish ~~or~~ Sell Exotic Birds}$

This matches the contrapositive of the **combined conditional statements**.

(D) is **CORRECT**.

Section 4, Question 13: *Flaw Question*

Evidence

Many symptoms of mental illness are affected by organic factors such as a deficiency in a compound in the brain.

What is surprising, however, is the tremendous variation among different countries of these symptoms in people

Conclusion

The variation establishes that these organic factors are not distributed evenly across the globe.

The Japanese are different than the Swedish; therefore, the difference must be explained by genetic – organic – factors. The argument that national differences can best explained by *organic differences* is responsible for so much misery in world history that any sane person living rightfully regards such an argument with a great deal of suspicion. It is of course necessary to state that the objections to this argument are not merely based on the bad consequences – wars, racism, *et cetera* – of such thinking; there are empirical reasons to be doubtful of this argument: the Japanese and Swedish, like all *homo sapiens* living today, are descended from the same 2,000 Africans living around 60,000 years ago. Of course, in those intervening 60,000 years, genetic differences arose in different world populations. But those differences are minor compared to those similarities that make us all human.

One would expect a test like the LSAT, concerned as it is with causal explanations, would consistently exploit the *genetic/organic* versus *environmental/cultural* issue: ***nature versus nurture***. And it is true that some questions do address this issue. But this issue has been so extensively covered and discussed that it seldom appears on any difficult questions any longer! When I first saw this question, I made the mistake of *overlooking the obvious organic versus cultural* issue and choosing the answer choice that *seemed smarter and subtler*. It just turned out that the “*smarter*” answer choice was wrong!

First, let's make the easy eliminations.

(A) ***Technically True But Uninteresting***

(D) and (E) start with the word “*presumes*” and so attempt to describe ***necessary assumptions*** of the argument. Both these answer choices contain ***Language of Unnecessary Strength***: “*any*” in (D) and “*only*” in (E).

(B) and (C) are the usual suspects for this question. (B) starts with “*neglects the possibility*” and (C) with “*fails to consider the possibility*”. These both mean that what

follows should be the ***logical opposite of a necessary assumption*** of the argument. So, the correct answer should severely weaken the argument.

(B) is incorrect because this factor does not directly challenge the argument. Even if nutritional factors that contribute to compound deficiencies vary from culture to culture, the compound deficiencies affected might have no relationship to the symptoms of mental illness under discussion. I chose this answer choice because (C), the correct answer, seemed too obvious. Do not make the mistake I made: do not try to outsmart the LSAT!

(C) **CORRECT.** This directly challenges the assumption that *varying in the incidence of symptoms implies variation in the distribution of organic factors*. Also, note that this answer choice is more directly relevant to the second evidence statement: the part of the evidence that the argument states is “*surprising*” and introduces with the **Transition Word** “*however*.” The argument crucially relies on the second premise; the first is contextual information. *The flaw or relevant assumption will always relate to the argument’s strongest and most significant evidence!*

Section 4, Question 18: *Sufficient Assumption Question*

The first statement is the conclusion. There is no **conclusion word** in the argument, but the second and third statements cannot be the exclusion because they are joined by the **Continuation Word** “and”.

Evidence

We will not be able to send a spacecraft to other planets anytime in the near future
(*Spacecraft*)

Sentient beings on another planet, to communicate with us, would have to be at least as intelligent as we humans.
(*Sentient Beings Communicate* → *Intelligent as Humans*)

Conclusion

If there are sentient beings outside the solar system, we cannot determine this unless those beings are as intelligent as humans.
(*Determine Soon* → *Intelligent as Humans*)

Multiple statements mention “*sentient beings*” and “*near future*,” so, for the sake of coherent diagrams, we need not represent every time these are mentioned.

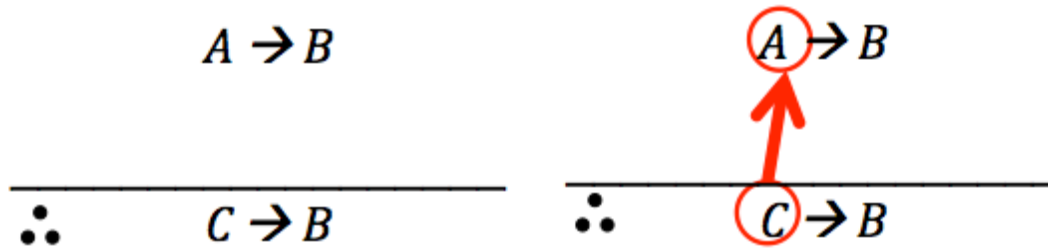
We have the following diagram:

~~*Spacecraft*~~

Sentient Beings Communicate → *Intelligent as Humans*

∴ *Determine Soon* → *Intelligent as Humans*

The evidence and conclusion share the same **necessary condition**, so we would expect the following formula:



The correct answer will contain *Determine Soon* as a **sufficient condition** and *Sentient Beings Communicate* as a **necessary condition**, but the correct answer will most likely not ignore relevant evidence like “*Spacecraft*”. The correct answer will most likely be the following:

Determine Soon and Spacecraft → *Sentient Beings Communicate*
or
Sentient Beings Communicate → *Spacecraft or Determine Soon*

(D) is **CORRECT**.

To diagram the answer choice:

If a sentient being cannot communicate with us, the only way to detect existence is by sending a spacecraft.

Sentient Beings Communicate → *Only Way to Detect is a Spacecraft*

Sentient Beings Communicate → (*Detect* → *Spacecraft*)

Any **conditional statement** can be written as an **either/or statement**:

$$\frac{A \rightarrow B}{\cancel{B} \rightarrow \cancel{A}} = B \text{ or } \cancel{A}$$

So, the answer choice can be diagrammed as

Sentient Beings Communicate → *Spacecraft or Detect*

This implies the predicted answer.

That was a lot of diagramming! It might be easier, after diagramming the argument, to predict four criteria of the correct answer:

- 1) It contains a positive or negative "*Sentient beings Communicate*"
- 2) It contains a positive or negative "*Spacecraft*"
- 3) It contains a positive or negative "*Determine Soon*"
- 4) It does ***not*** contain the ***repeated element*** "*intelligent as humans*"

(D) is the only answer choice that fulfills all of these criteria.

Preptest 63 – June 2011

Section 1, Question 7: Weaken (EXCEPT) Question

Section 3, Question 19: Method of Reasoning Question

The *professor* presents an argument that seems reasonable:

Because a singly momentary glimpse occurs from one particular perspective, one cannot form an accurate conception of one's physical environment

This argument is stated to be **similar** to another argument, which contains the *professor's* conclusion:

Because any history book reflects the biases of its author, any history book gives only a distorted view of the past.

(C) is CORRECT. An argument that is “*presumably cogent*” is one that **seems reasonable**.

(A) This is the most commonly chosen incorrect answer choice. After all, could the “*presumably flawed*” argument described in this answer choice be one, contrary to the *professor's*, that concluded that a history book **could provide an undistorted view** of the past? There is, however, simply no actual description of any flawed reasoning in the *professor's* argument! Correct answers to **Method of Reasoning** – and **Flawed Reasoning – Questions** should be **as simple and literal as possible**. There is no actual flaw committed or described by the *professor's* argument, so (A) cannot be correct.

(B) The *professor* employs an analogy; she **does not appeal** to the “*absurd consequences*” of a counterargument.

(D) The “*group of characteristics*” in this answer choice is an **Unsupported Element**

(E) This answer choice describes the entire argument as one about “*a type of human cognition*.” The argument is actually about **two types of human cognition** – a perception of one's physical environment and an understanding of the past. These types of cognition are said to be similar, but they are clearly distinct.

(A), (B) and especially (E) could be described as **Babelchoices**.

Section 3, Question 14

Section 3, Question 22: *Principle – Application Question*

Principles

*A police officer is eligible for the Mayor's Commendation **if** the officer has an exemplary record, **but not otherwise**.*

An eligible officer who did something that exceeded the reasonable expectations of an officer should get the Commendation if that act saved a life

Diagram of Principles

The **if...but not otherwise** statement is equivalent to an **if and only if** statement:

Eligible for Commendation \leftrightarrow Exemplary Record

*Eligible **and** Exceeded Expectations While Saving a Life \rightarrow Receive Commendation.*

Conclusion

Franklin should receive the Commendation but Penn should not

There is **only one way** to conclusively deny Penn the Commendation: to establish that Penn *does not have an exemplary record*. Even if Penn did not save any lives this year, there might be other ways to earn the Mayor's Commendation. Without fail, double-arrow statements are key to finding the correct answer.

(A) is **CORRECT**. You need not should read every answer choice when doing a question like this; in fact, the answer choices are so long! This answer choice gives you enough to deny Penn and grant Franklin the Commendation.

(B) This answer choice grants Franklin the Commendation, but does not deny it Penn. The only way to deny it to an officer is to establish that the officer does not an exemplary record!

(C) This answer choice denies the Commendation to both Franklin and Penn.

(D) By avoiding the *exemplary record* issue altogether, this answer choice neither denies nor grants the Commendation to either officer.

(E) This answer choice does not conclusively deny Penn the Commendation because it states that Penn **has** an exemplary record. It also does not necessarily grant

Franklin the Commendation: Franklin has exceeded expectations and saved lives, but we do not know whether Franklin has *exceeded expectations* **while** saving a life.

Preptest 64 – October 2011

Section 1, Question 19: *Flaw/Assumption Question*

The “*fails to take into account*” part of the question stem indicates that the correct answer will be the **logical opposite of an assumption** of the argument.

Evidence

*There is **considerable controversy** about how reliable DNA tests are. Unless there is **widespread agreement** in the scientific about how reliable a test is, it is unreasonable for the courts to allow evidence based on this test.*

Conclusion

Courts should not allow DNA tests in criminal cases

The argument assumes that “*considerable controversy implies **no widespread agreement**.*” This argument assumes that **some disagreement implies fundamental disagreement** about the reliability of DNA tests. Reasonable and educated people may disagree about explanations for phenomenon: for example, there are disagreements among evolutionary biologists about the origins of “altruism” in life on earth – and you should know by now that the LSAT loves the topic of altruism!

But no reasonable, educated person alive today refuses to believe that evolution occurred. Disagreement among “*experts*” is not evidence against a general hypothesis, or in the case of this argument, evidence against the general reliability of a DNA test.

(C) is **CORRECT**.

(A) The *authority* of courts is **irrelevant** to the *scientific legitimacy* of a test. If this argument were about whether courts will allow or forbid the use of such tests, this answer choice might be relevant.

(B) **Technically True But Uninteresting**. The standard in a criminal trial is not whether there is “*absolute certainty*,” but whether there is *reasonable doubt* that a defendant committed a crime. If a test truly were unreliable, it would be legally and ethically correct to forbid its use in a criminal trial.

(D) This answer choice somewhat strengthens the argument, so it cannot be the ***logical opposite of an assumption*** of the argument.

(E) ***Technically True But Uninteresting***. If the tests were unreliable, it might be a good idea to disallow them from noncriminal trial; the standards, however, for admission of evidence in criminal and noncriminal cases are different.

Check out **Preptest 17 (December 1995), Section 2, Question 25** for another argument that assumes that ***some disagreement implies fundamental disagreement***.

Section 1, Question 22: Strengthening Question

Evidence

***Because** of heavy metals in the sludge, bacteria that survive in sludge **evolve** resistance to the heavy metals in the sludge.
These bacteria show a strong resistance to antibiotics.*

Conclusion

Bacteria's exposure to heavy metal causes resistance to antibiotics

The evidence presents one causal claim, and one correlation, related to bacteria:

*Heavy Metals in Sludge **cause** Bacterial Resistance to Heavy Metals
Bacteria Resistant to Heavy Metals **correlates to** Bacterial Resistance to Antibiotics*

You can think of this as a *causal/correlation chain*:

*Heavy Metals **cause** Resistant to Metals **correlates to** Resistant to Antibiotics*

The argument concludes that *Heavy Metals **cause** Resistance to Antibiotics*. There are two common, related ways to weaken a correlation implies causation argument: the **Causal Reversal** and the **Uber-Cause**. It is difficult to see how the **Causal Reversal** could work here: the possibility of *Resistance to Antibiotics **causing** Resistance to Heavy Metals* seems unlikely, because the evidence clearly states that exposure to heavy metals caused the bacterial resistance to heavy metals. Perhaps the bacteria that survive in sewage sludge are exposed to antibiotics excreted by humans. *Sewage polluted with heavy metals **and** antibiotics* is a possible **Uber-Cause**.

A good strengthener will eliminate this powerful weakener!

(A) This slightly strengthens by employing the common **No Cause, No Effect Strengtheners**. But this answer choice fails to eliminate a highly plausible alternative explanation.

(B) **CORRECT**. This answer choice establishes that other factors, such as the potential presence of antibiotics in sewage, do not contribute to bacterial resistance to heavy metals or antibiotics. This answer choice **eliminates the Uber-Cause**!

(C) This **weakens** the argument by suggesting that antibiotic resistance works with the presence of heavy metals to produce heavy metal resistant bacteria.

(D) This **severely weakens** the argument by establishing that the **Uber-Cause** proposed above is a very probable alternative explanation!

(E) This answer choice has an **Unknown Impact**: it **strengthens** by establishing a connection between resistance to heavy metals and resistance to antibiotics and it **weakens** by establishing that these resistances exist among bacteria that does not live in sewage sludge, i.e., potentially bacteria never exposed to heavy metals!

Section 3, Question 17: Strengthening Question

Evidence

Deterioration of cognitive faculties associated with Alzheimer's disease can be slowed by some anti-inflammatory drugs, such as acetylsalicylic acid.

Patients with Alzheimer's are unable to eliminate protein BA from the brain; the microglia attack these deposits, thereby impairing the brain's cognitive functions.

Conclusion (the first sentence).

Deterioration of cognitive faculties associated with Alzheimer's disease is evidently caused by microglia – the brain's immune cells.

Some LSAT takers think that the last sentence is the main conclusion. This is not the case for three reasons:

- 1) When the first sentence is strongly stated, unattributed, and **interesting** - all **causal statements** and **judgments** are interesting! – the first sentence is very likely to be the main conclusion.
- 2) The main conclusion cannot be introduced by a **Continuation Word** like “furthermore.”
- 3) **Thereby** means “in this way or manner.” It is not a **Conclusion Word**! “In this way or manner” is also the definition of “thus.” English language purists hate that “thus” is often, on the LSAT and elsewhere, defined as equivalent to “therefore”!

Now that we have established the main point, there is another obvious problem: how is the first evidence statement about “some anti-inflammatory drugs, such as acetylsalicylic acid” relevant to the conclusion about *microglia*? The second evidence statement mentions microglia, so is clearly relevant to the conclusion about microglia. *When the one evidence statement is clearly relevant to the conclusion, and another is seemingly unrelated, the correct answer will connect the seemingly unrelated evidence statement to the conclusion.*

Learn this well – this is a recent development on the contemporary LSAT and you will see it soon again!

(A) This *slightly weakens* the argument by suggesting some other, undefined deficiency is also responsible for the problems related to microglia.

(B) **CORRECT.**

(C) This might *slightly weaken* the argument by suggesting that microglia can decrease the protein buildup and result in fewer attacks that impair the brain's cognitive functions.

(D) This somewhat *significantly weakens* the argument: if the protein BA buildup, itself a direct result of Alzheimer's, directly attacks the cognitive functions of the brain, microglia might be less relevant to the symptoms of Alzheimer's.

(E) Other brain diseases are ***Irrelevant to the Argument***.

Section 3, Question 21: *Sufficient Assumption Question*

Evidence

*Checkers Pizza and Marty's Pizza are the two major pizza parlors in town.
Checker's refused to accept Marty's coupons, even though accepting the coupons would
have cost Checker's nothing and would have satisfied potential customers*

Conclusion

*Checkers' was **motivated was simply to hurt** Marty's Pizza.*

The conclusion is about Checkers' **motive to hurt**, yet the evidence describes only Checkers' *actions*. The correct answer must determine what constitutes a **motive to hurt**. This simple observation eliminates (B), (C), (D), and (E)!

(A) is **CORRECT**. This answer choice does not connect to all of the evidence; it connects only to the "*satisfied potential customers*" part of the argument. But that is fine and is actually to be expected. Most importantly it contains the **Unsupported Cause** "*motivated by a desire hurt*"!

This question make the cut for the **Hardest Ever** because it deserves noting how easy it can be when you understand what the correct answer must contain. Otherwise, you waste time reading through the long and confusing incorrect answer choices!

Preptest 65 – December 2011

Section 1, Question 18: *Necessary Assumption Question*

Evidence

*Every domesticated large mammal species now in existence was domesticated thousands of years ago.
Since those days, people tried many times to domesticate large wild animals that seemed worth domesticating*

Conclusion

Most wild – undomesticated – large mammal species in existence today would be difficult to domesticate or would not be worth domesticating.

There is stated evidence that humans would have tried to domesticate large wild mammals “worth domesticating.” But there is no evidence about the “difficulty” faced by earlier humans, yet the conclusion contains the **Unsupported Element** “difficult to domesticate.” **Unsupported Elements** are very likely to appear in correct answers to **Necessary Assumption Questions**!

Also, the evidence is about what humans have tried to do over the last few millennia, yet the conclusion is about “today.” Anytime the argument contains a change over time, the argument assumes that major factors unaddressed by the evidence have remained constant.

(B) is **CORRECT**. It contains the **Unsupported Element** “difficultly” and **blocks the objection** that level of difficulty has decreased! The logical opposite severely weakens the argument: “*It is much easier today to domesticate wild large animal species than it was in the past.*”

(A) “Each” is **Language of Unnecessary Strength**. The conclusion of the argument is about **most** wild large mammal species. Also, the evidence establishes that people tried to domesticate **each** of those mammal species **worth domesticating**. This answer choice repeats a **distorted form** of the evidence! **Repeats evidence** is a great **Elimination Justification** on **Strengthening and Sufficient Assumption Questions**, but be wary of it on **Necessary Assumption Questions**: answer choices that seem like they are repeating evidence are usually stating very subtle assumptions, and are therefore correct! Repeating **distorted** evidence, however, is always ground for elimination!

(C) The **logical opposite has no impact** on the argument: **All** of the large mammal species that were domesticated in the past are still in existence. If some awesome

Inuits managed to domesticate a woolly mammoth, this argument could still be a strong one!

(D) The **logical opposite has no impact** on the argument. The *logical opposite* is also awkward. Because the statement is a proportion – the easier the domestication, the more worthwhile the domestication – the *logical opposite* of that statement is “*ease and worthwhileness of domestication are **not directly proportional.***”

(E) “The **very first** to be domesticated were the **easiest**” is **Language of Unnecessary Strength.**

Runner-up Question

Section 1, Question 19: *Strengthening Question*

The correct answer to this question is another example, like **Preptest 65, Section 3, Question 17**, of a *strengtheners that connects a seemingly unrelated evidence statement to the conclusion*. The argument does not make it clear why the *lower than usual proportion of birds visiting bird feeders* would have a positive impact on the bird population. (C) clearly establishes that bird feeders are dangerous, thus making that first evidence statement relevant to the conclusion.

Section 1, Question 20: *Flaw Question*

Evidence

Newspapers **generally report only** on those scientific studies whose findings sound dramatic

Newspaper stories about small observational studies, which are somewhat unreliable, are **more frequent** than stories about large randomized trials, which generate stronger scientific evidence.

Conclusion

A small observational study must be **more likely** to have dramatic findings than a large randomized trial.

The conclusion is a statement about *probability*: **more likely** is equivalent to **more probable**. And a **probability is always a percentage**. Yet the *combined evidence* strongly supports the claim that “small observational studies that have dramatic findings are **more frequent** than large randomized trials that have dramatic findings.” The evidence is a comparison of numbers and the conclusion is a comparison of percentages. This argument **confuses a number with a percentage/probability**. At issue in such an argument is usually missing information about the **total**: in this case, the **total number** of small observational studies and large randomized trials.

(D) is **CORRECT**.

(A)-(C) These answer choices all, respectively, refer to the *reliability of the studies*, the *strength of the evidence* in the studies, or simply the *studies themselves*. The argument, however, is not about the quality of the studies, nor is it even about the studies themselves, but about the number and likelihood of such studies! The argument does mention that large, randomized trials are scientifically superior to

small observational studies, but this distinction is a deliberate distraction! Also, this distinction is so obviously true that LSAT authors would not consider it interesting, so it is therefore very unlikely to be relevant to the correct answer!

(E) The argument contains *no causal language*, so the flaw cannot be a *Cause and Effect Flaw*.

The flaw of *Confusing a Number and a Percentage* is often considered an archetypal LSAT flaw – the most popular guide to Logical Reasoning spends an almost entire chapter on it! This flaw is actually very rare, so I saved it for the final countdown – during the learning and training phases you have far more important flaws on which to focus!

Section 4, Question 26: *Flaw Question*

The argument draws an intermediate conclusion from its first premise:

Premise

We have recruited the best players in the city

Intermediate Conclusion

We will have the best team in the city

Most LSAT takers – myself included – thought they found the flaw right here: a **Flaw of Composition**: *the best players imply the best team*, or, more abstractly, *the best individual parts imply the best whole entity*. Maybe these “best players” are divas and do not play well together!

(D) seemed like a good choice. *I fell for the **False Flaw**!*



First of all, (D) describes a **Flaw of Division**: *the best entity implies the best individual parts*. There is no answer choice that describes a **Flaw of Composition**, so the flaw the LSAT is looking for is elsewhere. Let's look at the second premise and main conclusion:

The second premise, introduced by the **Continuation Keyword** “*moreover*” and the **Evidence Keyword** “*since*”:

*The best team will be the team **most likely** to win the city championship*

Main Conclusion

*Our club will **almost certainly** be the city champions this year.*

The argument *assumes that the **most likely outcome is a probable outcome***. For example,

When one rolls two six-sided die, a total of 7 is the most likely result. Therefore, I will probably roll a 7 next!

The premise is true, but the conclusion – assuming the dice are not rigged – is clearly false.

(E) is **CORRECT**.

(A) I am not certain, but I do not think that this is an unreasonable assumption!

(B) The “*features*” – the best players – are clearly *relevant* to the “*quality of the entity*” – the team.

(C) Once again, I do not think that it is flawed to predict an outcome of a competition based on a comparison of the competing parties. I am quite certain Floyd Mayweather would beat Tucker Carlson in a boxing match, and I am basing that only on a comparison of those parties.

So what did we learn from this question? It is probably more useful to discuss what ***we should not infer***:

*The **LSAT thinks** that best players on a team imply that team is the best.*

No! The author of this question clearly thought that, in the case of this argument, the flaw of ***assuming the most likely outcome implies a probable outcome*** was worse than assuming that the ***best players imply the best team***. All other things being equal, the team with the best players will probably win!

One more potential ***bad inference***:

The flaw in an argument cannot be an assumption between a premise and an intermediate conclusion; the flaw must be an assumption between a premise, or intermediate conclusion, and the main conclusion.

This is false: see **June 2007, Section 3, Question 18** for an example of argument that makes its flawed assumption between its premise and its intermediate conclusion. In this argument, the relationship between the intermediate conclusion and main conclusion is quite reasonable.

LSAT Nice Time:

When an argument contains a deliberate ***False Flaw***, there is no answer choice that accurately describes that flaw. You have never, on any disclosed test, had to

compare two answer choices that accurately flaws committed by the argument and decide, "*which of these is worse?*"

Preptest 66 – June 2012

Section 2, Question 20: *Disagreement Question*

When evaluating the speaker's statements, pay attention to any element that each speaker addresses, and pay special attention when those elements appear in conditional statements!

Both speakers focus on what is **required** to call an action **morally good**:

Daniel:

*An action is not morally good simply because it fulfills a moral obligation
(Fulfilling a moral obligation is **insufficient** to call an action **morally good**)*

*No action can be **morally good unless** it is performed with the right motivations.
(Morally Good → Right Motivations)*

Carrie:

***The only thing** that can be **required** of a **morally good** action is that it fulfills a
moral obligation.
(Morally Good → Fulfill Moral Obligation; this is the only necessary condition of
"Morally Good")*

(A) They probably would both agree with this statement.

(B) Daniel probably agrees with this statement. Carrie almost certainly agrees with this statement. For either to disagree, we must know that the speaker's believes that "**All** actions performed with the right motivations **are morally good**." This is the **converse** of Daniel's conditional statement.

(C) Both speakers probably disagree with this statement; the statement does not mention "*morally good actions*," so it is very unlikely to be correct.

(D) **CORRECT.** Daniel definitely agrees: this answer choice is logically equivalent to his **conditional statement**. Carrie definitely disagrees: she states that there is *only one necessary condition* for calling an action "morally good". She would reject the statement that an action performed with the wrong motivations **cannot** be morally good.

(E) Daniel definitely disagrees, and probably so does Carrie: this is the **converse** of Carrie's conditional statement.

Section 2, Question 25: Method of Reasoning Question

Many LSAT takers misunderstand this argument. The argument is not advising group members to be nice!

Evidence, introduced by the **Evidence Keyword** because:

If one acknowledges that a person has not yielded, one cannot deny that the person is unyielding.

Conclusion, introduced by the **Transition Word** however:

If one intends to call a group member stubborn, bull-headed, or unyielding, one should choose the epithet unyielding.

(A) The argument actually does not advise against attacking a person's character. It advises **how** one should attack an opponent's character!

(B) "Impossible" is **Language of Unsupported Strength**.

(C) The argument actually does not appeal to what is "less offensive"!

(D) The argument does not address how the tactic recommended would "help the group reach a consensus."

(E) **CORRECT**. The danger here is that you mistake this confusing answer choice for a Babel choice. The "argument" the answer choice refers to is actually the evidence statement above: one *cannot accept the premise* – that the person has not yielded – and *deny the conclusion* – that the person is unyielding.

Section 4, Question 23: *Disagreement Question*

Jolene never denies that shrimp farming is generally environmentally destructive. The disagreement is about how quickly shrimp farming yields a profit.

Alex:

Investors make quick profits and then abandon the farm

Jolene:

Some shrimp farms have been quickly abandoned, but properly built farms are expensive. Most owners try to ensure that their farms are productive for many years.

(A) They probably both agree with this answer choice. Even Jolene might acknowledge that eventually the farms will be abandoned.

(B) **CORRECT.** This answer choice is correct even though neither speaker is logically committed to this answer choice. More below.

(C)-(E) There is no disagreement about the *environment*. Jolene acknowledges that some farms are unsustainable, and she might acknowledge that even those farms that last a long time are environmentally destructive.

I remember having a very hard time choosing (B). Alex never states that the quick profits are “easy,” and Jolene’s **most statement** does not necessarily contradict an “**often**” statement. **Most** students take the LSAT on Saturday, but is true the LSAT is **often** given on a Monday, when Sabbath observers, most international students, and all June students take it!

It is, however, reasonable to conclude that Alex’s statements support (B) and Jolene’s undermine (B). Expecting *must be true/must be false* answers on a **Disagreement Question** can be as counterproductive as expecting them on a **Most Strongly Supported Question**.

Section 4, Question 26: *Main Point Question*

As it is in most **Main Point Questions**, the main conclusion is in the middle of the argument. When a statement follows a **Transition Word** like **but** and is followed by an **Evidence Word** like **because**, that statement is almost certainly the main conclusion!

Your prediction should be:

It does not follow from the seemingly reasonable claim that a human ancestor possessed something like language that chimpanzees possess anything like language.

The whole statement is the main conclusion, not just the part about the chimpanzees not possessing language!

- (A) A true premise, but not the main point.
- (B) **CORRECT.**
- (C) Probably true, but certainly not the main point.
- (D) The argument never states that chimpanzees
- (E) The argument never establishes the precise time that human language began its evolution; it states that human language “*might have begun*” after the extinction of chimpanzees and humans common ancestor.

Preptest 67 – October 2012

Section 2, Question 20: Role of Statement Question

The first two statements are **premises**:

There were bombardments early in the earth's history, and these prevented life from originating at that time

The third statement is a **premise**:

Mars escaped this early bombardment

The fourth statement – the statement about which the question asks – is an **intermediate conclusion**, introduced by the **Conclusion Keyword** “so”

There could have been microbial life on Mars before there was such life on Earth.

The fifth statement is another **premise**:

Many meteorites originating from Mars have landed on Earth

The last statement is the **main conclusion**:

Life on Earth may have started when microbes were carried from Mars on a meteorite.

The question asks about the intermediate conclusion, so (A) and (B), which state that there is “no justification” provided for the statement, can be eliminated immediately – an **intermediate conclusion** supports the main conclusion, but is itself **supported by at least one other premise**

(C), (D), (E) all, at least partially, correctly describe the role played by the statement. Two of these, therefore, must **distort in some way the argument**.

(D) The statement – *there could have been microbial life on Mars* – **does not establish** the truth of the conclusion that life on Earth could have originated on Mars.

(E) The statement – *there could have been microbial life on Mars* – is required in order to establish the conclusion that life on Earth could have originated on Mars.

(C) **CORRECT**.

Section 2, Question 21: Flaw Question

Evidence

*The presence of bees is **necessary** for excellent pollination*
The presence of bees usually results in abundant fruits and vegetables
*Establishing a beehive **ensures** the presence of bees*
*Keeping bees is economical **only if** one has a use for homegrown honey.*

Intermediate Conclusion

***Gardeners who** have no use for homegrown honey **will not** have beehives*

Main Conclusion

***Gardeners who** have no use for homegrown honey **will not** have excellent pollination.*

When main conclusion is a conditional statement, and the argument does not look simple enough to fit one of our diagramming formulas, start with the sufficient condition of the conclusion:

~~Use for Homegrown Honey~~ → ~~Excellent Pollination~~

What can we say about “~~Use for Homegrown Honey~~”? The last evidence statement can be diagrammed:

~~Use for Homegrown Honey~~ → ~~Keeping Bees Economical~~

It is very reasonable to assume that a gardener for whom keeping bees is not economical will not have a beehive. The intermediate conclusion seems fully supported:

~~Use for Homegrown Honey~~ → ~~Beehive~~

The sufficient condition of the argument’s main conclusion reaches a dead-end at “~~Beehive~~”. Now let’s look at the necessary condition of the argument’s conclusion:

*~~Use for Homegrown Honey~~ → **Excellent Pollination***

If there is any statement in evidence that could lead to “~~Excellent Pollination~~”, that statement will be relevant to the correct answer. There is, the first evidence statement:

~~Excellent Pollination~~ → ~~Presence of Bees~~

The contrapositive:

~~*Presence of Bees → Excellent Pollination*~~

So we have a chain leading from the sufficient condition of the main conclusion:

~~*Use for Homegrown Honey → Keeping Bees Economical → Beehive*~~

And a chain leading to the necessary condition of the main conclusion:

~~*Presence of Bees → Excellent Pollination*~~

The argument assumed:

~~*Beehive → Presence of Bees*~~

This assumption is the inverse of the third evidence statement, which contained the **Sufficient Keyword** “ensures”:

~~*Beehive → Presence of Bees*~~

The argument assumes the **absence of a condition** that **ensures** the presence of bees **will guarantee the absence** of bees. Or, more abstractly, *the absence of a sufficient condition proves the absence of a necessary condition*:

(D) is **CORRECT**.

Section 4, Question 21: *Flaw Question*

Counterclaim, attributed to the “neighbor”

My pesticides are spreading to her farm in runoff water.

Evidence

*I use only organic pesticides
There is **no evidence** that they harm people or domestic animals
I am careful to avoid spraying onto my neighbor’s land*

Conclusion

My neighbor is wrong – my pesticides are not spreading to her farm in runoff water

Most LSAT takers fell for the **False Flaw*** in this question. The farmer established that there is **no evidence** that organic pesticides harm people or domestic animals. If the farmer had concluded that he is therefore **not harming** his neighbor’s farm, farmer would be guilty of *confusing an absence of evidence for a conclusion with evidence against a conclusion*. (A) would be correct.

But this was not the farmer’s conclusion! His conclusion is that his *pesticides are **not spreading** to his neighbor’s land*. The evidence of the argument, about the lack of evidence that organic pesticides cause harm and about the farmer’s care to avoid spraying onto his neighbor’s land, do not address at all the conclusion of the argument!

(C) **CORRECT**.

(B) The conclusion is not about the farmer trying to avoid spraying on his neighbor’s land, so it the argument **does not assume** that the care taken to avoid something usually results its avoidance.

(D) There is actually no evidence presented that the neighbor’s land has been contaminated, so an alternative explanation need not be provided.

(E) The conclusion is not about the **harm** caused by pesticides.

Section 4, Question 24: Weakening Question

Evidence

Experts agree that Nightbird was painted either by Larocque or one of his students. Nightbird contains orpiment, a pigment not found in any of Larocque's other paintings.

Conclusion

Nightbird was done by one of Larocque's students.

The argument assumes that the fact that orpiment has not been found in Larocque's paintings – an *absence of evidence* – is sufficient to prove that Larocque's paintings cannot have contained orpiment – *is evidence against a claim*. This is similar to the **False Flaw** in the previous question! Another way to think of this argument is that it assumes that *orpiment is a anti-Larocque fingerprint* – proof that Larocque was not involved in the painting. This is similar to the way **Preptest 12** assumed that *titanium* was, and was not, a *Gutenberg fingerprint* and the way **Preptest 35** assumed that the fossilized remains were a *fingerprint of the ocean floor*. When a Weakening, or Strengthening, makes a recognizable assumption, your powers of prediction increase tremendously. The correct answer will attack this ***orpiment is an anti-Larocque fingerprint assumption***.

(C) **CORRECT**. If orpiment is found in none of Larocque's students paintings, *the presence of orpiment proves nothing in the Larocque versus the students controversy*.

(E) The only other answer choice to mention orpiment, and it ***strengthens*** the argument!

Preptest 68 – December 2012

Section 1, Question 16: *Principle – Justifies Question*

Contextual Information

The defendant admits noncompliance with national building codes but asks that penalties not be imposed because he was confused about whether national or local building codes applied.

This excuse might be acceptable had he been charged with noncompliance of local codes.

Primary Evidence, introduced by the **Transition** and **Evidence Keywords** “but since”

He was charged with noncompliance of national codes

Conclusion

His excuse is unacceptable – there can be no legitimate confusion between national and local codes.

It is important to emphasize that the **primary evidence** is far more significant than the *contextual information* when analyzing the argument. From earliest questions to the most recent LSATs, understanding the importance of keywords, particularly **Transition Keywords**, cannot be overemphasized!

Even if you have trouble understanding the argument, the question type of **Principle – Justifies** and the strength of the conclusion itself – “*unacceptable*” – suggest that the correct answer must be *strongly worded and apply generally*.

(C) is **CORRECT**. This answer choice establishes that what is required by national building codes applies everywhere, including those areas governed by local building codes. So whatever the defendant did was forbidden in all areas of the country. This answer choice is strongly worded and applies generally, so even if you do not understand the argument very well, a good guess here would answer this question correctly!

(A) This weakens the argument.

(B) This would still allow for national codes to not apply to the defendant.

(D) This answer choice is **Insufficiently Strong**. It proves that the defendant’s excuse is *inadequate*, but does not go far enough: we want to say his excuse is **unacceptable**, a far stronger claim.

(E) This is answer choice is also not very strong, but, in addition, it has ***No Impact*** on the argument: at issue is not compliance itself, but whether the “*confusion*” is a *legitimate excuse*.

Section 1, Question 21: Disagreement Question

Justine:

*Pellman settled for \$1 million.
That Pellman settled indicates that they expected to lose.*

Simon:

*Pellman expected, win or lose, that the legal fees would be more costly than the settlement.
Pellman believed that settling was the most cost-effective solution.*

Justine is certain Pellman expected to lose. Simon is not so sure.

(A) Neither speaker addresses what would have actually occurred at trial. At issue are Pellman's *expectations* or state of mind.

(B) At issue are Pellman's expectations, not the "*accuracy*" of those expectations.

(C) Justine does not specifically address the issue of legal fees or cost-effectiveness, but it is not even clear that Simon would agree with this: he stated that settling "*seemed like the most cost-effective solution*" not that it **was** the most cost-effective solution.

(D) Justine does not specifically address the issue of legal fees or cost-effectiveness, but it not even clear that Simon would agree with this: Pellman might have suspected that the *legal fees* **and** the potential damages awarded to the plaintiff might have been greater than \$1 million.

(E) **CORRECT.** This statement can be diagrammed:

Expect to Win → ~~Settle for \$1 Million~~

Justine agrees; she stated the contrapositive of this claim:

Settle for 1 Million → ~~Expect to Win~~

Simon, on the other hand, believes that the \$1 million settlement does not prove that Pellman expected to lose. He believes that the settlement was made to avoid legal fees, and that the following situation is possible:

*Settle for \$1 Million **and** Expect to Win*

This possibility is the **logical opposite** of the answer choice. Simon disagrees and (E) is correct.

Section 3, Question 12: **Principle – Justifies Question**

Evidence

*Dried parsley is far **less tasty and healthful** than fresh parsley*

Conclusion

*Dried parsley **should never** be used in cooking.*

The evidence is **comparative** – dried parsley is worse than fresh parsley. But the conclusion is an **extreme judgment**, one so strong and uncompromising it sounds like it came from the mouth of Martha Stewart after she had been hardened by years in prison.

The question type and the strength of the conclusion demand a strong worded principle!

(A) This answer choice seems like a rational requirement, but “*whenever possible*” is **Insufficiently Strong**. The author of the argument would rather you starve than use dried parsley!

(B) **CORRECT**. An unrealistic, somewhat insane demand, yet it is entirely appropriate to justify this extreme conclusion!

(C) This answer choice **fails to connect to the evidence**: the evidence stated that dried parsley is **less tasty and healthful than fresh parsley**. The evidence did not state that dried parsley is “*generally **neither** tasty **nor** healthful.*”

(D) This answer choice **fails to connect to the evidence**: the evidence stated that dried parsley is **less tasty and healthful than fresh parsley**. The evidence did not state that dried parsley is “***not both** tasty **and** healthful.*”

(E) This answer choice seems like a rational judgment, but “*inferior*” is **Insufficiently Strong**. This argument makes it sound like, if one used dried parsley, Anthony Bourdain should come stab you with a paring knife.

Runner-up Question: Section 3, Question 17: Strengthening/Paradox Question

There is no real evidence for the iconoclastic geophysicist's claim, so the conclusion that a "*highly organized natural process*" explains the "*highly unusual*" pattern of asteroid craters is itself quite paradoxical. **Only (D)** provides an example of an organized natural process that could explain such a pattern.

Section 3, Question 20: Method of Reasoning Question

Evidence

If trillions of humans will someday colonize the galaxy, the vast majority of humans ever to live would alive during this period of colonization.

We are humans and are we have no reason to think that we are unrepresentative

Intermediate Conclusion

The odds are overwhelming that we would be alive during this period of colonization.

Evidence

We are not alive during this period

Conclusion

The odds are slim that such colonization will ever happen.

I am still uncertain as to whether this is a strong or weak argument. An early human alive at the time when there were only 2,000 members of our species in east Africa might make the same argument about humans someday colonizing the entire planet. Okay, such a human probably had other concerns, primarily finding food and not becoming food, but our early philosophical human seems overly pessimistic. This argument, however, is one of *probability, not possibility*; it seems reasonable to conclude that, from the perspective of the 2,000 humans in east Africa, the future colonization of the entire planet was *improbable*.

These concerns, however, are not your concerns when answering this question. A Method of Reasoning Question is not asking for a criticism, but for a description of what reasonable actions the author took. An answer choice that severely criticizes the argument will be incorrect, even if you think the argument is a poor one.

(D) **CORRECT**. The **event** is our being alive at the time of galactic colonization. The **hypothesis** is that trillions of humans will someday colonize the galaxy. That this event has not taken place is stated to be evidence that the hypothesis is **improbable**.

(A) The argument does not base its conclusion merely on the fact that humans have yet to colonize the galaxy. The argument is more sophisticated than that. An argument that applied this reasoning would hold that any future event is improbable.

(B) This describes an argument that commits a self-contradiction. This is a severe criticism and cannot be correct to a Method of Reasoning Question.

(C) That predictions “*cannot ever be made*” is ***Language of Unsupported Strength***.

(E) There are no “*established human tendencies*” in the argument, so this is an ***Unsupported Element***.

Section 3, Question 21

Evidence

*Riley characterized the president's speech as inflammatory and therefore inappropriate.
Riley has a long-standing feud with the president.*

Intermediate Conclusion

We should not conclude that the speech was inflammatory solely on the basis on Riley's testimony

Main Conclusion

If there are no independent reasons to determine that the speech was inflammatory, the speech was not inappropriate.

When I first did this question, I thought this argument contained an **Source Attack Flaw**: the argument seemed to dismiss Riley's observations about the president based on Riley's feud with the president. Riley's feud with the president does not automatically prove that his claim about the president's speech is false, because an arguer's *motives*, whether they are well-intentioned or ill-intentioned, do not prove or disprove a claim.

The argument, however, does not commit a serious **Source Attack Flaw**, because the argument allows for the possibility that Riley was correct. The argument does this by making its conclusion conditional on the absence of "independent reasons to deem the president's speech inflammatory." The argument's skepticism of Riley's claim, stated in the **intermediate conclusion**, is actually quite reasonable. Because Riley does have a feud with the president, it is reasonable to seek further evidence to prove that her speech was actually inflammatory. It would have been flawed to immediately invalidate Riley's claims; it is good reasoning, in this case and in most cases, to be skeptical of a claim from a biased source.

So if the *source attack* is a **False Flaw**, what is the actual flaw? It is actually a much more mundane assumption, found in the conditional claim in the conclusion:

~~*Evidence the Speech was Inflammatory*~~ → *Speech Appropriate*

The argument assumes

~~*Inflammatory*~~ → *Appropriate*

This is a clearly unreasonable assumption. A speech about one's love of Justin Bieber might *not inflame* political passions, but it might be *inappropriate* in a university setting.

(A) **CORRECT.** This answer choice correctly describes the assumption above.

(B) This choice describes an argument that assumes the following: *Inflammatory* → *Appropriate*, which is the inverse of the argument's assumption. It is a probably more reasonable assumption than the one made by the argument. An inflammatory speech might be appropriate if addressing a rally of anarchists or fascists, but is probably inappropriate in a university setting.

(C)-(E) all, in different ways, can be appealing if you focus on the **False Flaw**.

(C) This choice attributes bad motives to the author of the argument – which itself another kind of **source attack!** – but there is no evidence that the author is motivated the president's "*privileged standing*"

(D) This is the most commonly chosen incorrect answer, because it most closely seems to describe the **Source Attack** flaw. But the kindly question writer took pity on us and made this choice distort argument in other ways: the argument never concluded that Riley's claim was **false**, nor is there any direct evidence that Riley had "*something to gain*" if one believes that the president's speech was inflammatory.

(E) Even if Riley's animosity toward the president is "*well-founded*," this does not mean that Riley's testimony should be uncritically accepted.

It is reasonable to be skeptical of a source when there is evidence that the source is biased or has ulterior motives. But when there is such evidence, it is unreasonable to outright dismiss that source without further consideration. The argument did not do this, so no Source Attack flaw occurred.

Prep Test 69 – June 2013

Runner-up Question: Section 1, Question 19: Necessary Assumption Question

(E) is CORRECT because it *eliminates a common alternative explanation for a correlation implies causation* argument. It eliminates the **Causal Reversal**.

Runner-up Question: Section 1, Question 20: Flaw Question

The flaw committed is assuming that one of the **most common** ailments affects **most** people. This is very similar to assuming that the **most likely result is a probable result**, covered in the explanation to **Preptest 65 (December 2011), Section 4, Question 26**.

Section 1, Question 21

Evidence

Nobel prize winners are typically professional scientists
*Nobel prize winners have **all** made significant contributions to science*
Amateur scientists have provided many significant contributions to science
Professional scientists are often motivated by economic necessity or a desire for fame
Amateur scientists are motivated by the love of discovery alone

“Nobel prize winners” appears in two statements, and once as a sufficient condition in a conditional statement. A conclusion can be drawn about “Nobel prize winners”:

Some professional scientists have made significant contributions to science

This conclusion might take the prize for the world’s most boring conclusion.

“Amateur scientists” appears in two statements, and while it is never connected to a **sufficient condition keyword**, the last statement is clearly about **every amateur scientist**.

Those who are motivated by a love of discovery alone have provided many significant contributions to science.

(C) **CORRECT**.

(A) This is the most commonly chosen answer choice, and it is almost certainly true. Otherwise, it must be true that all the amateur scientists who made contributions to science just happened to also win the Nobel Prize! This highly implausible scenario, however, is not disproved by the stimulus. If you made the deductions beforehand, you will not fall for this tempting trap answer!

(B) The last sentence does not disprove the possibility that greedy professional scientists are also motivated by the love of discovery. Unless stated to be an exclusive motivation – as they were in regards to amateurs – different motivations, even conflicting motivations, can coexist.

(D) Probably true, but technically an ***Unsupported Comparison***.

(E) Probably true, but an *unsupported conditional statement*.

Section 1, Question 22: Weakening Question

Evidence

Most of the best sales representatives came to the job with an engineering degree but no sales experience

Conclusion

The company should hire as sales representatives those applicants with engineering degrees and no sales experience over those with sales experience and no engineering degree.

The conclusion implies that there is a strong *causal connection* between an engineering degree and sales success and that the degree is far more important than sales experience. This argument might seem like a fairly typical *correlation implies causation* argument. But it is actually much worse!

It is important to note that the evidence is ***an extremely weak correlation***. It is a solitary *most* statement. Recall Prep Test 22, Section 2, Question 23:

75 percent of vegetarians do not develop heart disease by age 50.

If we knew that 75 percent of all people, regardless of diet, do not develop heart disease by age 50, that statistic about vegetarians would not be very compelling. Similarly, with regard to this question, if the company were founded by a bunch of friends from engineering school, it would be unsurprising that the best salespeople had engineering degrees, because everyone would – the best and the worst!

Good correlations have some comparative statistic: a much *stronger correlation* would be that those with engineering degrees have ***more sales*** than those with exclusively

(A) and (E) are ***some*** statements, and ***some*** statements are never effective weakeners of causal arguments that involve large numbers of individuals. Such arguments are compatible with counterexamples. (See ***Prep Test 18, Section 4, Question 25*** for an example of an argument that contains an ***illegitimate appeal to a limited number of counterexamples***.) *Some* statements are effective weakeners only when the conclusion is about *one entity* or the *cause of one event*, or is about ***all entities in a set or the cause of every event in a set of events***. See Chapter Seven for a review of this topic.

(B) **CORRECT**. If most of the sales representatives hired had engineering degrees but no sales experience, it is not surprising most of the best sales representatives

had these qualities. This answer choice is similar to possibility addressed above that the company is almost all former engineering students!

(C) The argument is not directly about the customers, but if this answer choice has any impact, it strengthens the argument. If most the customers have engineering degrees, those with engineering degrees might be well-suited to sell to such customers.

(D) The conclusion is about favoring one group of job applicants over another, so it is largely irrelevant which group produces the majority of applicants. Even if there were few, or even no, job applicants with engineering degrees, it could still be the case that the company **should** favor those that do have such degrees. A **should** statement, or any **moral** statement, can be true even if it present circumstances do not allow it to be fulfilled.

Section 4, Question 19

Counterevidence

Average payoff for tickets sold in a lottery is far lower for the average cost of a ticket

Counterclaim

Buying lottery tickets is an unwise use of resources

Evidence

The average amount paid out on an insurance policy is far lower than the average cost of a policy

No one argues that buying insurance is an unwise use of resources

Main Conclusion

The conclusion that buying lottery tickets is an unwise use of resources is supported by faulty reasoning.

What should strike you is the phrase “*unwise use of resources.*” When an argument draws a conclusion about what is “*wise*”, the argument’s conclusion is an **evaluative judgment**. It is not enough to simply address average payouts and possible profits; when “wisdom” at issue, the long-consequences of certain behaviors are relevant.

(A) At issue is what is “*wise.*” What people actually do is not good evidence for or against what is “*wise.*”

(B) This has an **Opposite Impact**, making the purchasing of insurance seem worse, from the perspective of the customer, than the purchasing of lottery tickets!

(C) This also has an Opposite Impact; purchasing a lottery ticket is, usually, a small financial risk.

(D) This seems like a good weakener. But consider **how boring** this answer choice is! Of course winning the lottery is less likely than collecting an insurance settlement; it hardly needs to be stated. It could still be the case that the chance of a huge payout is worth the risk!

(E) **CORRECT**. This answer choice establishes a major difference between lottery tickets and insurance, and this difference relates directly to the issue of a *wise use of resources*: “*more important to one’s well-being.*” This answer choice addresses

issues beyond odds of winning and average payouts, and in doing so far more effectively weakens an argument about what is “unwise” than does (D).

Section 4, Question 20: Must Be True Question

The tropics were susceptible to the fire of 1997 because of the widespread drought caused by an unusually strong El Nino.

Many scientists believe the strengthen of El Nino was enhanced by global warming caused by pollution

It is usually obvious that these two statements cannot be connected: we cannot assume that the scientists’ beliefs are correct. When statements cannot be connected, expect that correct answer to a **Must Be True Question** to be a **conditional statement**.

(A) assumes the scientists beliefs are correct. This answer choice **confuses belief with fact**.

(B) The strong El Nino caused the widespread drought that made the tropics susceptible to large and intense fires. The stimulus never established that El Nino was **necessary** for these large and intense fires. The “if no El Nino, few if any fires” is **Language of Unsupported Strength**.

(C) “**Generally larger and more intense**” is **Language of Unsupported Strength**.

(D) I was certain this answer was correct. **Some** statements are usually great answers to **Must Be True Questions**. This answer choice is true if we assume that the scientists mentioned are aware of the fact that El Nino caused the widespread draught that made the tropics susceptible to the fires of 1997. This may seem like a reasonable assumption, but it is **not necessarily true**! Just as we cannot assume that beliefs of certain individuals are established facts, we cannot assume that certain individuals are aware of those facts. This is related to the flaw of confusing belief with fact, and very similar to the flaw described by the correct answer to **Preptest 64 (October 2011), Section 1, Question 16**.

(E) **CORRECT**. Here is the conditional statement you should have expected! Had (D) not been such as seductive some statement, many more would have gotten this question correct!

Section 4, Question 21: Sufficient Assumption Question.

Evidence

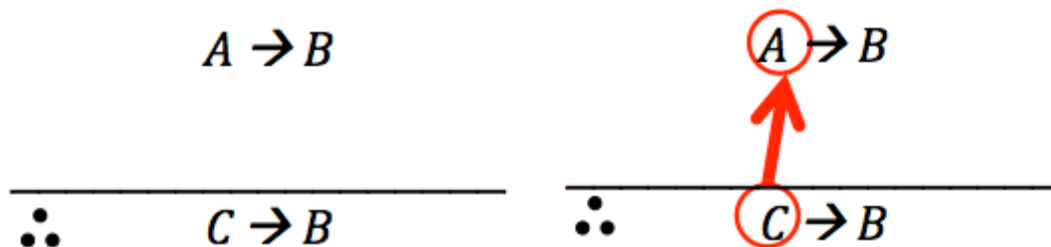
Skiff's Book Published This Year \rightarrow *Nguyen Urge Dean to Promote* \rightarrow *Dean Will Promote*

(I have combined "Nguyen vows she will urge Dean to promote Skiff" and "Nguyen will keep her promise" to "Nguyen Urge Dean to Promote")

Conclusion

Skiff's Book is As Important and Well-Written as Skiff Claims \rightarrow *Will Be Promoted*

The **necessary condition** of the evidence chain, "Dean Will Promote," implies the **necessary condition** of the conclusion "Will be Promoted," so for the purposes of finding a sufficient assumption the **necessary conditions** are the same. The following formula applies:



The predicted answer is:

Skiff's Book is As Important and Well-Written as Skiff Claims \rightarrow *Skiff's Book Published This Year*

(A) **CORRECT.** But what about the "Well-Written" part of the predicted answer? It does not need to be there! The "importance" might be **independently sufficient** to get the book published this year and lead to Skiff's promotion.

Let's say scientists observe that Bacteria X and Bacteria Y – which never exist separate from one another – always produce methane. The following statement would be true:

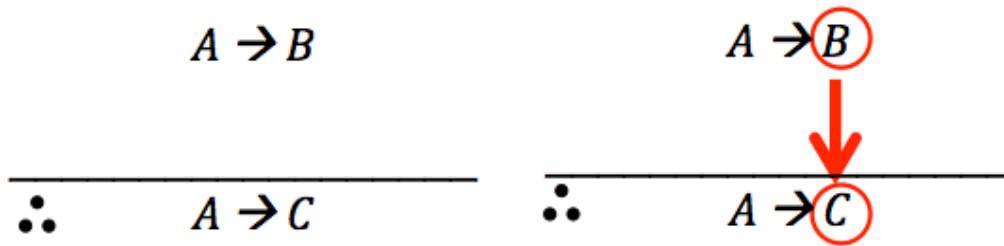
Bacteria X and Bacteria Y \rightarrow *Produce Methane*

Later, scientists succeed in separating Bacteria X and Bacteria Y and they discover that Bacteria X was alone responsible for producing methane:

Bacteria X → Produce Methane

Bacteria X is *independently sufficient* to produce methane, but that does not disprove the original observation that Bacteria X and Bacteria Y produce methane. It just so happens that Bacteria Y was irrelevant!

One you have a predicted answer, the sufficient condition of the actual answer need not match the prediction exactly. The sufficient condition need not be complete, so long as it connects! This is still true when the following formula applies:



For example, given the evidence that ***all Spartans are brave and strong*** and the conclusion that ***all Spartans are honorable***, the following statement would be a ***sufficient assumption*** of that argument.

Brave → Honorable

The following would also be ***sufficient assumptions***:

Strong → Honorable
Strong and Brave → Honorable

A ***necessary assumption*** of this argument is that “*Either being brave, or being strong, or both, guarantee that one is honorable.*” Lucky for us that ***Necessary Assumptions Questions*** so seldom follow diagramed arguments!

(D) is the ***converse*** of the predicted answer.

(B), (C) and (E) do not match at all the predicted answer.

Preptest 70 – October 2013

Section 1, Question 19: *Parallel – Structure Question*

The diagrammed evidence

Juarez: ~~Rewritten~~ → Proposal Rejected
Juarez is very reliable
Fact: ~~Rewritten~~

Conclusion

*Proposal **Probably** Rejected*

The argument is a good one. Only (B) can be eliminated because its conclusion is of different strength: “**probably rejected**” versus “**prove the mediation is safe**.” A closer look at the structure of the argument’s evidence is required.

The correct answer’s evidence must contain the following:

- 1) A conditional statement attributed to a source
- 2) A statement that the source of the opinion is a good source
- 3) A statement that the sufficient condition of the conditional statement is true

It is probably best to evaluate each remaining answer choice by focusing first on the first criterion: a conditional statement attributed to a source.

(A) The conditional statement is unattributed; it is simply stated as a fact.

(C) **CORRECT.** The evidence has the same structure:

Journal: Data Accurate → Medication Safe
Journal is rarely wrong
Fact: Data Accurate

(D) The conditional statement and one of the facts are both attributed to the source – the journal – and the source is stated to be “*fairly reliable*.”

(E) There is no conditional statement, and the source is stated to be “*fairly reliable*.”

Section 1, Question 23: **Principle – Justify Question**

Evidence

*Most people favor the bill
The bill does not violate anyone's human rights
The bill will not be passed for many years, if at all
Those who oppose the bill are very influential*

Conclusion

If this country is a democracy at all, it is not a well functioning democracy

The conclusion should be simplified to “~~Well-Functioning Democracy~~.” The if part of the conclusion is purely rhetorical: the conclusion could be rephrased as “Whether we are a democracy or not does not matter, for we are certainly not a well-functioning democracy.”

“**Well-Functioning Democracy**” is defined nowhere in the evidence, so it must be in the correct answer!

The predicted answer is

*Evidence → ~~Well-Functioning Democracy~~
Or
~~Well-Functioning Democracy~~ → Evidence*

There is so much evidence that it can be counterproductive to sketch a more precise prediction. The correct answer is actually somewhat unpredictable: it could mention, or not mention, “human rights,” for example. As long as it states that the facts of the matter **prove that the democracy is not well-functioning**, it is correct!

(A) This starts out very promisingly and seems to conform to the second of the two predictions above. But the evidence never stated that the bill would **benefit** most people – it stated that most people **favor** the bill! With so much evidence to consider it is very easy to confuse **benefit most people** and **most people favor**! This answer choice **fails to connect to the evidence**. When you cannot form a precise prediction, be wary of answer choices that so subtly distort the evidence.

(B) This starts out promisingly: it fails to mention “human rights,” but, more significantly the evidence does not establish that the bill will **never** pass into law. The word “*eventually*” makes this answer choice one that **fails to connect to the evidence**.

(C) This starts out promisingly, but the only if makes this answer choice somewhat confusing. This choice actually weakens the argument by suggesting that a well-functioning democracy might contain popular bills thwarted by an influential minority.

(D) The sufficient condition of this answer choice is "*Any bill passed into law in a well-functioning democracy.*" The evidence states that the bill will not be passed into law, so this entire statement has **No Impact** on the argument.

(E) **CORRECT.** You could diagram this. Most prepositional phrases, such as "*in a well functioning democracy,*" and most relative clauses, such as "*that most people favor*" end up as **sufficient conditions**:

Most People Favor + Well-Functioning Democracy + ~~Violate Human Rights~~ → Passed Promptly Into Law

The evidence states as a fact ~~*Passed Promptly Into Law*~~. So we can conclude, by the contrapositive of this answer choice:

~~*Most People Favor*~~ **or** ~~*Well-Functioning Democracy*~~ **or** *Violate Human Rights*

The evidence states that *Most People Favor* and ~~*Violate Human Rights*~~ are true. So we can conclude ~~*Well-Functioning Democracy*~~ is true.

Section 4, Question 19: *Weakening Question*

Background Information

Viewers surveyed after the debate tended to think that Lopez had made the better arguments

Primary Evidence

Lopez won the election

Main Conclusion

The survey respondents who reported Lopez made the better arguments may have been biased

It is a somewhat convincing argument. If Lopez were hugely popular – the fact that he won suggests that he is at least more popular than Tanner – it would be reasonable to conclude the survey respondents were *biased*.

(A) This slightly weakens: it suggests the debate watchers were not representative of the voters.

(B) This has a significant ***Opposite Impact***: it suggests that Tanner actually did have better arguments!

(C) This weakens even more than (A): it suggests much more strongly that the debate watchers were not representative of the voters.

(D) **CORRECT**. This weakens much more than (A), (C), and (E): it focuses on the *survey respondents* – which no other answer choice does – and establishes that they were more likely to vote for Tanner. It is always difficult to prove, or disprove bias, but this answer does as much as one can expect to disprove pro-Lopez. If the survey respondents were more likely to be pro-Tanner before the debate but pro-Lopez after the debate, it seems highly likely that a significant number of them were convinced by Lopez's arguments!

(E) This weakens, but less than (D) does. If Lopez's victory margin, it suggests that the survey respondents were not overwhelmingly biased, but they still could have been predisposed to favor Lopez.

I have never seen, on any disclosed LSAT, a Weakening Question where three of the incorrect answer answers were *Lesser Weakeners*! This makes comparing the answer choices difficult and time consuming! This supports my hypothesis that the

test writers are focusing on writing more difficult **Strengthening and Weakening Questions**.

Section 4, Question 21: Must Be True

***Most** fiction we have published were submitted by agents
The **rest of** the fiction we have published was received from authors after it was
requested.*

***No** Nonfiction Given Serious Attention **or** Published **unless** Renown Figure or
Requested Manuscript
(Nonfiction Given Serious Attention **or** Published → Renown Figure **or** Requested
Manuscript)*

It is difficult to see how these statements could be connected. We have no idea most of the books published are fiction or nonfiction. This makes that **most** statements in (A) and (B) very unlikely to be correct.

(C) is false. According to the third statement, a manuscript that receives careful attention could be nonfiction work that was requested from the author.

(D) We have no basis for evaluating the comparative probability that a certain manuscript will be published. If this were a **Most Strongly Supported Question**, we could say – from the **most** statement - that a book of fiction published is likely to have been submitted by an agent. But that would be a very dangerous answer for a Must Be True Question.

(E) CORRECT. It is easy to overlook the fact that we could combine the statements around the concept of what has been published: the first two statements establish that **all** published fiction is submitted by agents **or** requested from authors. It is true that **all** nonfiction is from a renown figure **or** requested from authors. So,

*Published → Submitted by Agent **or** Requested **or** Renown Figure*

The answer choice, which follows from the combined statement.

*Published **and** Requested **and** Submitted by Agent → Renown Figure*

Runner-up Question: Section 4, Question 24: Role of Statement Question

This question is eerily similar to **Preptest 67 (October 2012), Section 2, Question 20**. Even the topic, early life on Earth, is similar! The statement in question is the *first of two intermediate conclusions*, so (C) is correct. (C) was also correct for the analogous question in Preptest 67! The same author almost certainly wrote these two questions!

(E) is a **Babelchoice**. There are two conclusions that follow, but one supports the other. An argument that contains three conclusions is rare enough; an argument

that contains an intermediate conclusion supporting two independent conclusions has never existed on any disclosed LSAT.

Preptest 71 – December 2014

Section 1, Question 12: *Strengthening Question*

Evidence

Over the coming century, global warming will likely cause winter temperatures in the Rocky Mountains to rise

This will cause a greater proportion of precipitation to fall as rain instead of snow

Conclusion

The mountain snowpack will melt more rapidly and earlier, resulting in greater spring flooding and less storable waters to meet summer demands

I was expecting a easy time answering this question, predicting an answer choice that **connected the evidence** – *more rain* – to the **Unsupported Elements** in the **conclusion** – *snow melting earlier resulting in floods and less storable water*.

No luck in the answer choices! But some can be eliminated quickly:

(A) This answer choice does not specify whether the “increase in average participation” is rain or snow. This answer choice **fails to connect to the evidence**.

(D) The evidence is not about regions with the “*mildest winters*” – the superlative makes it easier to see that this answer choice **fails to connect to the evidence**.

(E) The evidence does not establish the snowpack will be larger – yet again an answer choice that fails **fails to connect to the evidence**.

Both (B) and (C) connect to the evidence: instead of the *more rain* I predicted, they both introduce the phrase “*relatively mild winters*”, which is a reasonable way to describe the situation is the evidence. They both contain one of the conclusion’s **Unsupported Elements**: the less storable water. (B) is better because it contains the other **Unsupported Element** – the flooding – as well. Still, I had trouble distinguishing (B) and (C) quickly, and did not want to spend a lot of time on a question in the middle of the section. I thought (C) was better because it kept the focus on the Rocky Mountains – and I was wrong!

(B) is **CORRECT**. It compares *regions after relatively mild winters* to **those same regions** after a colder winter. It is therefore more relevant to a prediction related to climate change, because it shows how a **changing climate affects the same region**. (C) is inferior, and it would have been even if had mentioned the *flooding*, because it

compares regions that different regions that regularly experience milder and colder winters.

I cannot think of a Strengthening Question with an incorrect answer so similarly worded to the correct answer! Yet more evidence that the Strengtheners and Weakeners are harder than ever!

Section 1, Question 14: *Parallel – Structure Question*

After my tough time with 12, I was in no mood to spend a great deal of time analyzing a Parallel – Structure Question. Time for the revenge of angry LSAT nerd!

The content of the argument is difficult: “*philosophers....mental images....infinite regress!*” Time to focus on the conclusion and key evidence statements and hope to get away from this question quickly!

There is a counterclaim, and the conclusion, a rejection of the counterclaim, follows the **Transition Word** “however”: “*the hypothesis **cannot** be correct.*” The hypothesis **requires** something, and I do not care what that something is! All I know is that something is said to be **absurd – definitely false**.

(A) The conclusion – “*cannot be the earliest language*” – matches. The first evidence statement matches: the “*if....then*” establishes a **requirement** of the counterclaim. But the second evidence statement does not match: “*highly unlikely*” is not as strong as “*absurd.*”

(B) The conclusion – “*The claim... **cannot** be correct*” – matches, but the evidence does not: there is no requirement established for the counterclaim.

(C) **CORRECT.** The conclusion – “*The historians’ claim **must be false***” – matches. There is a **requirement** established for the counterclaim, and that *requirement* is said to be “*impossible*” – a match for “*absurd.*”

(D) “*Unfortunate*” is **no match** for “*cannot be correct*”!

(E) The conclusion sounds different from the others, but it is a firm rejection of the counterclaim, so it matches. There is no requirement of counterclaim established, however, so the conclusion does not match.

This question is eerily similar to, and different from, **Preptest 33 (December 2000), Section 3, Question 22**. Some of the similarities are superficial: the difficult content in the stimulus, and even weirder, one incorrect answer about Indo-European and another about Alexandria! But the difference is more important for our purpose: In the Preptest 33 questions, simply matching the conclusions was sufficient to choose the correct answer. In this question, matching the conclusions only eliminates one incorrect answer. You must match the evidence statements as well. But in both of these questions, you need not, and should attempt to, understand the difficult content! *Matching the structure is sufficient*, even if you have to match **all** of it – the conclusion **and** the evidence.

Section 3, Question 19: Necessary Assumption Question

Evidence

*XYZ purchased 20 new trucks 3 years ago
There is no record of any of the trucks being sold last year
XYZ sold all of its diesel trucks last year*

Conclusion

None of the 20 trucks purchased 3 years ago were diesel powered

The conclusion is about what occurred *3 years ago*, but most of evidence is about what occurred *last year*. The assumption will most likely provide some information about what happened *between 3 years ago and last year*.

(A) The logical opposite does not make the argument a bad one: “***Some of the trucks sold last year were not diesel powered.***” This tells us nothing about what kind of trucks was purchased 3 years ago.

(B) “Used trucks” are ***irrelevant to the argument.***

(C) The logical opposite does not make the argument a bad one: “XYZ purchased ***some new trucks since it purchased the trucks 3 years ago.***” This might slightly strengthen the argument, supporting a claim those diesel trucks sold last year were ***not*** the trucks purchased 3 years ago.

(D) **CORRECT.** The logical opposite makes the argument a bad one. “***Some of the 20 trucks were sold before last year.***” This allows for the possibility that ***some*** of the trucks purchased 3 years ago ***were diesel***, but were sold before last year.

(E) The logical opposite does not make the argument a bad one: “XYZ still owns ***some of the trucks purchased 20 years ago.***” This significantly strengthens the argument.

When an argument involves the passage of time, assumptions very often make up for lost time: they block objections....

Section 3, Question 23: Most Strongly Supported Question

Evidence

*Most malpractice suits arise **because** of patients perceptions that doctors are acting negligently or carelessly*

*Many doctors now regard medicine as a science rather than an art and a less compassionate as **a result***

Harried doctors sometimes treat patients rudely, discourage them from asking questions, and patronize them

If** doctors learned to listen better to patients, lawsuits **could be avoided

*Unfortunately, certain economic **incentives encourage** to treat patients rudely*

No obvious connections can be drawn, but there is lots of *causal and judgmental* language! The weak conditional statement is actually better understood as a causal one: “*Not listening well enough to patients is a cause of lawsuits.*” **Causal language** is in bold, judgmental language is underlined. Expect many answer choices to contain **Unsupported Causes** and **Unsupported Judgments**.

(A) “**Main cause**” gives this causal claim **Language of Unsupported Strength**. Take away the “*main*” and this answer choice would be a very strong contender.

(B) The **economic incentives** are said to encourage the rude treatment of patients but are not explicitly connected to the statement about regarding medicine as a science rather than an art.

(C)-(D) both contain **Unsupported Judgments**. There is no *legal/moral* language in the stimulus about whether lawsuits are **unjustified** or whether the scientific outlook **should be replaced**.

(E) **CORRECT**. “*Doctors foster*” makes this a *causal claim*, but a reasonable one. They treat patients rudely. The lack of listening nicely causes lawsuits, which arise from the patients’ belief that doctors are acting *carelessly*. The answer choice does not address the *economic incentives* that encourage the doctors’ *rude actions*, but it does not need to: the answer *does not morally blame* the doctors or say that their actions are **only the result** of their personal defects.

There are some assumptions made by (E): it is possible, though highly unlikely, that the perception among patients that doctors do not care comes from a source entirely related to the rude treatment patients receive. For this reason, (E) would fail as a **Must Be True** answer choice. However, given the statements in the stimulus, it is a *difficult not to believe* in this answer choice. It is certainly the **most supported** of the five answer choices.

This question is a fitting conclusion to this book. It involves so much that is important: the difference between an answer that can be **deduced** – a **Must Be True**

correct answer – and an answer choice that is ***most supported***; the difference between descriptions of ***causal connections*** and ***moral judgments***; and, as we learned in Chapter One, the way noting ***Language of Unsupported Strength*** can lead to easy eliminations.