

Critical Reasoning Analysis/Critique

CR31410.01

201. Most of Western music since the Renaissance has been based on a seven-note scale known as the diatonic scale, but when did the scale originate? A fragment of a bone flute excavated at a Neanderthal campsite has four holes, which are spaced in exactly the right way for playing the third through sixth notes of a diatonic scale. **The entire flute must surely have had more holes**, and the flute was made from a bone that was long enough for these additional holes to have allowed a complete diatonic scale to be played. Therefore, **the Neanderthals who made the flute probably used a diatonic musical scale**.

In the argument given, the two portions in **boldface** play which of the following roles?

- A. The first is presented as evidence that is confirmed by data presented elsewhere in the argument given; the second states a hypothesis that this evidence is used to undermine.
- B. The first is an opinion, for which no supporting evidence is presented in the argument given, that is used to support the main conclusion of the argument; the second is that main conclusion.
- C. The first describes a discovery as undermining the position against which the argument is directed; the second states the main conclusion of the argument.
- D. The first is a preliminary conclusion drawn on the basis of evidence presented elsewhere in the argument given; the second is the main conclusion that this preliminary conclusion supports.
- E. The first provides evidence to support the main conclusion of the argument; the second states a subsidiary conclusion that is drawn in order to support the main conclusion stated earlier in the argument.

Argument Construction

To determine what roles the two portions in boldface play, it is useful to look first for certain “inference indicator” words: words that indicate that what follows is a premise (words like *because* and *since*) or a conclusion (words like *thus* and *therefore*).

Here, there is only one, *therefore*; it immediately precedes the second boldfaced portion. This indicates that that portion is a conclusion. Because of this, we can effectively rule out answer choice A.

However, we must investigate the rest of the argument to determine whether this is the main conclusion. If it is, we can rule out answer choice E as well.

Alternatively, it may be an intermediate conclusion, in which case E would be the correct answer.

To determine which sort of conclusion it is, ask whether this conclusion is used in support of another claim in the argument. This conclusion is not, which makes it the main conclusion. This rules out answer choice E.

To make a correct choice among options B, C, and D, we must determine the role of the first highlighted portion.

- A. This choice is incorrect because the second boldfaced portion is a conclusion drawn in the argument. It is not, of course, a hypothesis that the first boldfaced portion is used to undermine. Furthermore, the argument presents no data to confirm the first boldfaced portion.
- B. **Correct.** The first boldfaced portion is not a conclusion; it is merely an assertion that is not supported by any claims presented in the argument. This portion, along with the statement immediately following it, are offered in support of the second boldfaced portion. This second boldfaced portion is the argument's main conclusion.
- C. The first boldfaced portion does not undermine a position that the argument is directed against. In fact, the argument is not explicitly directed against any position. Note that the argument is rhetorically positive, arguing for a specific position rather than against one.
- D. The argument provides no evidence in support of the first boldfaced position.
- E. As noted above, this cannot be the correct answer because the second boldfaced portion is in fact the main conclusion of the argument.

The correct answer is B.

CR53140.01

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202. In a certain rural area, people normally dispose of household garbage by burning it. Burning household garbage releases toxic chemicals known as dioxins. New conservation regulations will require a major reduction in packaging—specifically, paper and cardboard packaging—for products sold in the area. Since such packaging materials contain dioxins, one result of the implementation of the new regulations will surely be a reduction in dioxin pollution in the area.

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Which of the following, if true, most seriously weakens the argument?

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- A. Garbage containing large quantities of paper and cardboard can easily burn hot enough for some portion of the dioxins that it contains to be destroyed.
- B. Packaging materials typically make up only a small proportion of the weight of household garbage, but a relatively large proportion of its

volume.

- C. Per-capita sales of products sold in paper and cardboard packaging are lower in rural areas than in urban areas.
- D. The new conservation regulations were motivated by a need to cut down on the consumption of paper products in order to bring the harvesting of timber into a healthier balance with its regrowth.
- E. It is not known whether the dioxins released by the burning of household garbage have been the cause of any serious health problems.

Argument Evaluation

This question requires us to identify a claim that seriously weakens the argument that new conservation regulations that require a major reduction in paper and cardboard packaging will reduce dioxin pollution in a certain rural area.

Dioxins are released when household garbage is burned. It seems reasonable to think that reducing packaging material that contains dioxins would help reduce dioxin pollution. Nevertheless, suppose for some reason burning large amounts of paper and cardboard containing dioxins actually—however counterintuitively—leads to a reduction in the amount of dioxins that pollute the environment. This would indicate a major weakness in the argument.

- A. **Correct.** This claim tells us that garbage containing large quantities of paper and cardboard burns at such a high temperature that a portion of the dioxins in the garbage is destroyed. If so, then reducing quantities of paper and cardboard in burned garbage might in fact increase dioxin pollution, not reduce it, despite the fact that paper and cardboard packaging contains dioxins.
- B. This choice does not weaken the argument: the amount of dioxin pollution could still be reduced by reducing the amount of dioxin-containing packaging.
- C. This choice is not relevant to the question. Even if per-capita sales of products sold in paper and cardboard packaging are relatively low in the area in question, it could still be the case that the amount of dioxin pollution in the area would be reduced if the amount of cardboard and paper packaging was reduced.
- D. This choice provides an additional reason for the regulations; it thus does nothing to weaken the argument.
- E. Health problems caused by burning dioxins are outside the scope of the argument. Remember, the argument is about whether the regulations will reduce dioxin pollution. Determining whether burning household garbage is harmful might be relevant to deciding whether the plan should be implemented. It is not relevant, though, to deciding whether the plan would work.

The correct answer is A.

203. Suriland cannot both export wheat and keep bread plentiful and affordable in Suriland. Accordingly, Suriland's wheat farmers are required to sell their crop to the government, which pays them a dollar per bushel less than the price on the world market. Therefore, if the farmers could sell their wheat on the world market, they would make a dollar per bushel more, less any additional transportation and brokerage costs they would have to pay.

Which of the following, if true, most seriously weakens the argument?

- A. Suriland's wheat farmers have higher production costs than do farmers in many other wheat-producing countries.
- B. Sale of a substantial proportion of Suriland's wheat crop on the world market would probably depress the price of wheat.
- C. The transportation and brokerage costs that Suriland's farmers would face if they sold their wheat outside Suriland could amount to almost a dollar per bushel.
- D. Suriland is surrounded by countries that do not import any wheat.
- E. The price of a bushel of wheat on the world market occasionally drops below the average cost of producing a bushel of wheat in Suriland.

Argument Evaluation

To keep bread affordable in Suriland, the country's government requires that wheat farmers in the country sell their wheat to the government for one dollar per bushel less than the world market price.

This question requires us to identify a statement that seriously weakens the argument. The conclusion of the argument is that, if these wheat farmers could legally sell their wheat on the world market, they would make a dollar per bushel more, minus additional transportation and brokerage costs.

However, this argument assumes that the world market price for wheat is fixed and would not be affected by introducing Suriland's wheat supply. That is, it is possible that the world market price per bushel for wheat might decline as a result of an increase in the wheat supply available on that market. If this were the case, it would severely weaken the argument.

- A. This choice is outside the scope of the argument: the argument is about Suriland's wheat farmers increasing how much money that can receive per bushel, not about how these farmers' costs compare to the costs of farmers in other countries. In any case, this claim does not indicate that Suriland's wheat farmers could make a dollar more, minus any additional transportation and brokerage costs, than they do now.
- B. **Correct.** An increase in supply on the world market with no increased demand could easily depress the price of wheat on the market. It is still possible that Suriland's farmers would make more than they do now, even

after subtracting additional transportation and brokerage costs. But the argument specifically says that the farmers would make a dollar more, minus those costs, and that does not follow if the claim made in this answer choice is true.

- C. Note that the argument suggests that these farmers would make a dollar per bushel more, less any additional transportation and brokerage costs they would have to pay. That could still be true no matter what those costs are.
- D. Whether Suriland's wheat is sold to near or distant countries is immaterial to the argument; note that the conclusion includes the qualification less any additional transportation costs.
- E. This indicates that Suriland wheat farmers might sometimes lose money on their wheat if selling on the world market. This does not indicate, however, that they would not lose less on the world wheat market than they would selling to the government. Note that the government's price for wheat is pegged to the world market, so the price the world market offers and the price the government offers will always differ by the exact same amount: the government pays one dollar less.

The correct answer is B.

CR30370.01

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204. Sasha: It must be healthy to follow a diet high in animal proteins and fats. Human beings undoubtedly evolved to thrive on such a diet, since our prehistoric ancestors ate large amounts of meat.

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Jamal: But our ancestors also exerted themselves intensely in order to obtain this food, whereas most human beings today are much less physically active.

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Jamal responds to Sasha by doing which of the following?

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A. Refuting her statement about our prehistoric ancestors
- B. Bringing forth a piece of information for the purpose of suggesting that she should qualify her main conclusion
- C. Citing additional evidence that indirectly supports her conclusion and suggests a way to broaden it
- D. Questioning whether her assumption about our prehistoric ancestors permits any conclusions about human evolution
- E. Expressing doubts about whether most human beings today are as healthy as our prehistoric ancestors were

Argument Construction

Sasha argues that, because our prehistoric ancestors consumed large amounts of meat, humans must have evolved to thrive on a diet of animal proteins and

fats. She concludes from this that it must be good for us to consume such a diet.

Jamal responds by pointing out that our ancestors exerted themselves much more than we do, primarily to catch this food.

This question asks for the best characterization, among the answer choices, of Jamal's response.

- A. Jamal implicitly accepts Sasha's statement that our prehistoric ancestors consumed large amounts of meat. Therefore, Jamal does not refute this statement made by Sasha.
- B. **Correct.** Jamal's response indicates that our prehistoric ancestors were far more active than we are. This suggests not that Sasha is incorrect in her statement, but that her conclusion would benefit from this qualification: a diet high in animal protein and fat is healthy when one engages in intense physical activity at a level that is higher than what is normal for modern human beings.
- C. Jamal's response suggests that Sasha make her conclusion more restrictive rather than more broad.
- D. Jamal suggests a qualification of Sasha's argument based on the behavior of prehistoric human beings versus modern human beings. This in no way suggests that her assumption about our prehistoric ancestors tells us anything about evolution.
- E. Jamal does not question whether most modern human beings are as healthy as our prehistoric ancestors. However, he does question whether a diet high in animal proteins and fats is healthy without adjusting one's level of intense physical activity.

The correct answer is B.

CR70870.01

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205. Some theorists and critics insist that no aesthetic evaluation of a work of art is sound if it is based even in part on data about the cultural background of the artist. This opinion is clearly false. The only sound aesthetic evaluations of artists' works are those that take into account factors such as the era and the place of the artists' births, their upbringing and education, and the values of their societies—in sum, those factors that are part of their cultural background.

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The above argument is most vulnerable to which of the following objections?

- A. The argument presupposes the conclusion for which it purports to provide evidence.
- B. The argument cites evidence that undermines rather than supports the conclusion.
- C. The argument draws its conclusion by means of an equivocal

interpretation of key terms.

- D. The argument assumes that the production of an effect is evidence of an intention to produce that effect.
- E. The argument assumes that evaluative disputes can be resolved by citing factual evidence.

Argument Evaluation

This question asks us to identify which of the objections listed among the answer choices the argument is most vulnerable to.

The argument's conclusion is that the opinion, expressed by some theorists and critics, that *no aesthetic evaluation of a work of art is sound if it is based even in part on data about the cultural background of the artist*, is false.

The only reason given for this conclusion is essentially a reiteration of the conclusion: that the cultural background is in fact vital to aesthetic evaluation of the artist. Given that the only reason given against the theorists' and critics' opinion is an opposite opinion, the argument is circular.

Therefore, the answer to this question must identify this: that is, that the argument presupposes the truth of the conclusion for which it claims to provide evidence.

- A. **Correct.** As indicated above, the argument is vulnerable to this criticism.
- B. The argument does not cite evidence that undermines rather than supports the conclusion. In fact, the argument's "evidence" for its conclusion is simply a reiteration of the conclusion itself.
- C. The argument does not equivocate on any key terms.
- D. The argument does not assume that the production of an effect means that one intended to produce that effect.
- E. The argument does not assume that facts will resolve evaluative disputes.

The correct answer is A.

CR53870.01

206. Banker: My country's laws require every bank to invest in its local community by lending money to local businesses, providing mortgages for local home purchases, and so forth. This is intended to revitalize impoverished local communities. But it is clear that the law will soon entirely cease to serve its intended purpose. An increasing number of banks incorporated in our country exist solely on the Internet and are not physically located in any specific community.

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The banker's argument is most vulnerable to criticism on which of the following grounds?

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- A. It overlooks the possibility that most banks that are physically located in specific communities in the banker's country are not located in

impoverished communities.

- B. It takes for granted that a law that ceases to serve its originally intended purpose no longer serves any other beneficial purpose, either.
- C. It confuses a condition that would, if present, be likely to produce a given effect, with a condition that would probably be the cause if that effect were present.
- D. It overlooks the possibility that even if there is a strong correlation between two phenomena, neither of those phenomena are necessarily causally responsible for the other.
- E. It fails to adequately address the possibility that an increase in the number of banks of one kind in the banker's country will not lead to the complete elimination of banks of another kind.

Argument Evaluation

This item requires us to identify a criticism to which this argument is vulnerable.

The argument is as follows: an increasing number of banks in a particular country exist in no specific community, but only on the Internet. The banker believes the country's law requiring banks to invest in their specific communities will soon cease to serve its purpose, namely, to help revitalize impoverished communities.

Note that the banker's conclusion is quite strong: *The law will soon entirely cease to serve its intended purpose.* The only reasons to believe that the law would *entirely cease to serve its ... purpose* would be: (1) if circumstances led to the complete disappearance of banks that do exist in specific communities; (2) if somehow circumstances caused investment in impoverished local communities to fail to revitalize those communities.

- A. To propose that most banks that are physically located in specific communities are not located in impoverished communities would, if anything, help support the banker's argument. That is, these banks would not have local communities in need of help, so the law would have little real effect on the impoverished communities it is intended to serve.
- B. First, it is not clear that the argument does take for granted that the law will serve no other beneficial purpose even if it fails to serve its intended purpose. Even if the argument did take this statement as given, it does nothing to call into question the banker's argument.
- C. The argument does not confuse cause and effect.
- D. The argument does not confuse correlation with causation.
- E. **Correct.** The argument's only reason given for its conclusion is that the number of Internet-only banks is growing. This does not mean, however, that banks within local communities will no longer exist, or that those banks' investments will fail to help revitalize impoverished communities. Even if the number of local banks declines, as long as some local banks remain, the law will not necessarily cease to serve its intended purpose.

The correct answer is E.

CR15380.01

207. The contingency-fee system, which allows lawyers and their clients to agree that the lawyer will be paid only in the event of success, does not increase the number of medical malpractice lawsuits brought against doctors. As attorneys must cover the costs for their time and research, they want to be assured that any medical malpractice case they accept on a contingency-fee basis has substantial merit. Consequently, attorneys turn away many people who come to see them, for lack of a good case.

The argument above is most vulnerable to criticism on the grounds that it fails to

- A. specify the criteria attorneys use to judge the merits of a medical malpractice case
- B. consider whether, in the absence of a contingency-fee option, even people with meritorious cases are much less likely to initiate litigation if they believe they might incur large legal fees
- C. note whether, in successful medical malpractice lawsuits, the average monetary award after legal costs have been deducted is less under contingency-fee arrangements than otherwise
- D. consider the effect of the contingency-fee system on the number of lawsuits sought for reasons other than medical malpractice
- E. acknowledge the rising cost of medical malpractice insurance

Argument Evaluation

This question asks us to identify the best criticism of this argument among the given answer choices.

Based on the premise that attorneys will turn away many potential clients who are not likely to win their cases, the argument concludes that a contingency-fee system does not increase the number of medical malpractice lawsuits brought against doctors.

In order to understand the argument more fully, we would need to consider whether the alternative to a contingency-fee system—a system wherein a client pays the attorney's fees regardless of outcome—makes it less likely that a potential client would bring a medical malpractice lawsuit against a doctor.

- A. While it is true that the argument fails to specify the criteria that attorneys use to judge the merits of a malpractice case, this in no way suggests that such criteria do not exist.
- B. **Correct.** This claim suggests that in the absence of a contingency-fee option, potential clients might hesitate to bring to court even lawsuits with merit. This suggests that there might actually be fewer meritorious

malpractice lawsuits against doctors without the contingency-fee option. This would result in an overall reduction in the number of malpractice lawsuits against doctors, which substantially weakens the conclusion.

- C. This implies that the contingency-fee option would reduce costs. Therefore, there would be more incentive to bring cases under the contingency-fee option. This strengthens the argument.
- D. This is outside the scope of the argument. Note that the conclusion is about medical malpractice lawsuits, so this criticism is immaterial to the argument.
- E. Note that medical malpractice insurance is a cost paid by doctors themselves. Therefore, the rising cost of medical malpractice insurance has no effect on the likelihood that a medical malpractice case will be brought to court.

The correct answer is B.

CR66590.01

208. Shirla: In figure skating competitions that allow amateur and professional skaters to compete against each other, the professionals are bound to have an unfair advantage. After all, most of them became professional only after success on the amateur circuit.

Ron: But that means that it's been a long time since they've had to meet the more rigorous technical standards of the amateur circuit.

Which of the following is most likely a point at issue between Shirla and Ron?

- A. Whether there should be figure skating competitions that allow amateur and professional skaters to compete against each other
- B. Whether the scores of professional skaters competing against amateurs should be subject to adjustment to reflect the special advantages of professionals
- C. Whether figure skaters can successfully become professional before success on the amateur circuit
- D. Whether the technical standards for professional figure skating competition are higher than those for amateur figure skating competition
- E. Whether professional figure skaters have an unfair advantage over amateur figure skaters in competitions in which they compete against each other

Argument Construction

To answer this question, we must identify a point on which Shirla and Ron disagree.

Shirla argues that because professional figure skaters who compete against amateur skaters will already have had success on the amateur circuit, the professionals will have an unfair advantage over the amateurs.

Ron, on the other hand, points out that this means that it has been a long time since the professionals have had to meet the more rigorous technical standards of the amateur circuit.

What that indicates is that Ron is countering Shirla's reason for thinking that professional figure skaters would have an unfair advantage. However, it is not clear whether Ron is suggesting that amateurs now have an advantage or whether professionals and amateurs would be on a relatively equal plane. It is only clear that Ron disagrees with Shirla's claim about professionals having an unfair advantage.

- A. Shirla believes that professionals would have an unfair advantage. It therefore seems reasonable to conclude that she would oppose figure skating competitions that allow amateur and professional skaters to compete against one another. Nevertheless, she does not specify this and so we cannot be certain. That said, it is even less clear what Ron would say about such competitions. Note that it is unclear where Ron stands with regard to which group actually holds an advantage, if either.
- B. It is unclear whether Shirla would say that the scores of professional skaters competing against amateur skaters must be adjusted to reflect the professionals' advantage. It is possible, after all, that Shirla would instead argue that there should be no such competition at all. Ron, on the other hand, simply disagrees with the claim that professionals have an unfair advantage.
- C. Shirla believes that professional figure skaters will have initially competed on the amateur circuit before becoming professional. There is no indication that Ron disagrees with this.
- D. Ron believes that the technical standards for professional figure skating competitions are lower, not higher, than those for amateur figure skating. There is no indication that Shirla disagrees with this.
- E. **Correct.** Shirla believes that professional figure skaters would have an unfair advantage in competitions with amateur figure skaters; Ron disagrees with this belief.

The correct answer is E.

CR03001.01

209. Recent observations suggest that small, earthlike worlds form a very low percentage of the planets orbiting stars in the galaxy other than the sun. Of over two hundred planets that astronomers have detected around other stars, almost all are hundreds of times larger and heavier than the earth and orbit stars much smaller than the sun.

Which of the following, if true, would most weaken the above justification of the claim that earthlike worlds form a low percentage of the total number of planets?

- A. There are millions of planets orbiting stars around which astronomers have not attempted to detect planets.
- B. The best current astronomical theories predict that almost all planets around other stars are probably hundreds of times larger than the earth.
- C. A planet orbiting a star similar to the sun would be more likely to be earthlike in size than would a planet orbiting a much smaller star.
- D. The smaller a planet is relative to the star it orbits, the more difficult it is for astronomers to detect.
- E. The observations would have detected any small, earthlike worlds orbiting the stars around which larger planets have been detected.

Argument Evaluation

This question asks you to identify a claim that would, if true, weaken the justification for the conclusion that only a small percentage of the total number of planets in our galaxy are formed by earthlike worlds.

The only justification given for this conclusion is that, of the *over 200 planets that astronomers have detected around other stars, almost all are hundreds of times larger and heavier than the earth and orbit stars much smaller than the sun.*

Any evidence suggesting that the planets the astronomers have detected may be unrepresentative of planets in general would weaken the justification this claim gives to the conclusion.

- A. This may look like it weakens the justification. After all, if the total number of planets were significantly smaller than millions, then the sample size of over 200 planets would allow us to make the inference with more confidence. Nevertheless, particularly when accounting for the vagueness of the conclusion, the size of the sample is large enough to give us a reasonable degree of certainty. More importantly, though, note that the conclusion is restricted to planets orbiting stars in our galaxy. There is nothing in this answer choice to suggest that the planets it refers to are actually in our galaxy.
- B. This choice strengthens the justification for the conclusion.
- C. This choice does not weaken the justification for the conclusion. The only way it might do so is if it provided information showing that astronomers have mainly looked at planets orbiting an unrepresentative sample of stars, that is, a sample that is more heavily populated with planets orbiting stars that are smaller than most stars in the total star population. We are given no reason to believe this is the case.
- D. **Correct.** This gives us a reason to think that the sample may be

unrepresentative. Planets more earthlike in size may be less likely to be detected than the much larger stars that astronomers have detected.

- E. This claim strengthens, rather than weakens, the argument. It implies that the astronomers' detection methods would not have inadvertently underrepresented the number of earthlike worlds.

The correct answer is D.

CR61021.01

210. Researchers in City X recently discovered low levels of several pharmaceutical drugs in public drinking water supplies. However, the researchers argued that the drugs in the water were not a significant public health hazard. They pointed out that the drug levels were so low that they could only be detected with the most recent technology, which suggested that the drugs may have already been present in the drinking water for decades, even though they have never had any discernible health effects.

Which of the following, if true, would most strengthen the researchers' reasoning?

- A. If a drug found in drinking water is not a significant public health hazard, then its presence in the water will not have any discernible health effects.
- B. There is no need to remove low levels of pharmaceutical drugs from public drinking water unless they present a significant public health hazard.
- C. Even if a substance in drinking water is a public health hazard, scientists may not have discerned which adverse health effects, if any, it has caused.
- D. Researchers using older, less sensitive technology detected the same drugs several decades ago in the public drinking water of a neighboring town but could find no discernible health effects.
- E. Samples of City X's drinking water taken decades ago were tested with today's most recent technology, and none of the pharmaceutical drugs were found.

Argument Evaluation

This question asks us to find the answer choice that would most strengthen this argument.

Researchers in City X reason that because the levels of certain pharmaceutical drugs that have been found in the city's drinking water are so low—detectable only by use of the most recent technology—these drugs may well have been in the drinking water for decades. Furthermore, the researchers point out that there have been no discernible health effects from the use of the drugs. They conclude that the drugs are probably not a significant concern.

As it stands, the argument is quite weak. The researchers conclude only that the drugs *may have . . . been present for decades*. This leaves open the possibility that they were not present for that long. If they were not, then obviously the current lack of discernible health effects does not imply that there will be no such effects in the future.

We can strengthen the argument if we find solid information indicating that these drugs can be present in a city's drinking water at the levels found in City X's drinking water, or higher, for a long time without presenting any ill health effects.

- A. This choice does not strengthen the argument. Note that there have not been any discernible health effects from drinking the water; this fact is compatible with this statement as well as with the drug being a significant public health hazard. Perhaps the reason there have been no discernible health effects is that the drugs have only recently entered the water supply.
- B. This choice does not strengthen the argument's reasoning. Until we can establish that there is no significant health hazard—what the argument sets out to prove—we cannot know whether there is a need to remove these drugs from the drinking water.
- C. This claim weakens the argument. It introduces the possibility that there may have been adverse health effects resulting from these drugs, yet the researchers have not been able to discern these effects, or have not been able to determine that they were effects of the drugs.
- D. **Correct.** Researchers several decades ago, using less sensitive technology, were able to detect the same drugs in another town's public drinking water. This implies that the drug levels in that town were higher than those recently detected in City X's drinking water. Given that there have been no discernible health effects in this previous case, this lends support to the researchers' reasoning regarding City X.
- E. This claim weakens the argument; it suggests that the drugs are a relatively new presence in the water. Therefore, the effects of these drugs might not have had time to arise.

The correct answer is D.

CR20521.01

211. Errors in the performance of repetitive or “boring” tasks—often attributed to a momentary lapse in concentration—can be serious in such activities as flying a passenger aircraft. Is there any method that would provide warning of such lapses—for example by monitoring brain activity? Researchers scanned the brains of volunteers performing a repetitive task. When the tasks were being performed correctly, the volunteers' brains showed activity in cognitive-processing regions. However, these regions became less

active several seconds before some errors were made, and another brain region, region X, became active. The researchers concluded that the monitoring of region X could provide warning of an impending error.

Which of the following, if true, most supports the researchers' conclusion?

- A. The cognitive effort required in performing a repetitive task diminishes significantly with increases in the number of repetitions of the task performance.
- B. Once a mistake was made and detected, brain activity in regions associated with cognitive effort sometimes increased.
- C. Other research found that whenever significant activity occurs in region X, it is generally with repetitive tasks, soon before an error occurs.
- D. The diminution of brain activity in cognitive processing regions and the increase of activity in region X began at least 5 seconds before the errors occurred.
- E. Reduced activity in brain regions associated with cognitive effort was accompanied by increased activity in regions that become active during sleep.

Argument Evaluation

This question requires us to find a statement that would provide additional support for the researchers' conclusion that monitoring region X can provide warning that an error is about to be made by someone engaged in a repetitive task.

Note that researchers had observed during brain scans that cognitive-processing regions of the brain remained active when a repetitive task was performed correctly. These regions became less active, and brain region X became active, several seconds before errors were made.

Certainly, further research showing such errors being preceded by the onset of activity in region X would strengthen the researchers' conclusion—this would help rule out that the researchers had simply noticed an unusual coincidence.

However, what would be even more helpful would be to indicate that *whenever* significant activity in someone's region X occurs, this person is definitively engaged in repetitive tasks and is about to make an error.

To see why this would be helpful, consider: if such activity in region X frequently happened, even when no errors were about to be made, monitoring such activity would not be helpful as a warning that an error was impending.

Therefore, ruling this out would support the conclusion.

- A. Note that this does not indicate that cognitive effort diminishes; it merely indicates that the amount of such effort required diminishes. Even more important, it tells us nothing about activity in region X.
- B. This indicates what sometimes happens after errors are made. However, it gives us no information about what happens soon before an error.

Information about that, of course, is what we need if we are trying to determine whether something can provide warning of an impending error.

- C. **Correct.** As indicated above, the conclusion would be well supported by research suggesting that whenever region X has significant activity, this is usually during repetitive tasks and soon before an error occurs.
- D. This does not provide additional support for the claim that monitoring region X will be useful as a warning of an impending error. After all, the statement that activity in region X began at least 5 seconds before the errors occurred rules out only that the increase in activity in region X occurred less than 5 seconds before the errors occurred. This statement does not rule out the possibility that the increase came, for example, many hours before the error occurred.
- E. Such a discovery may help researchers discover why the errors occurred. However, it does not help support the claim that monitoring region X could provide a warning of impending error.

The correct answer is C.

CR46521.01

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212. City resident: These new digital electronic billboards should be banned for light pollution since they are much too bright.

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Outdoor advertising spokesperson: No, that's not true. Testing with a sophisticated light meter shows that at night they throw off less light than traditional billboards that are reflectively lit. Your mistaken perception that they are brighter comes from looking directly at the light source—the screen itself.

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The underlying strategy of the spokesperson's response to the resident is most analogous to the underlying strategy of which of the following?

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A. A doctor dismisses a patient's claim to have had a heart attack, citing a cardiac enzyme blood test.
- B. A politician rejects an accusation of perjury by denying the credibility of witness testimony.
- C. An insurance agent rejects a claim, on the grounds that there is insufficient evidence to support the claimant's testimony.
- D. An investigator casts doubt on the results of a lie detector, citing the subject's report of illness during the test.
- E. A psychologist treats a mental illness by encouraging a patient to abandon inconsistent beliefs.

Argument Construction

This question requires us to identify the answer choice that has an underlying reasoning strategy that is most analogous to the spokesperson's strategy.

The outdoor advertising spokesperson responds to the city resident by citing an objective test that shows the factual claims of the resident to be false.

- A. **Correct.** This choice is the most closely analogous to the spokesperson's strategy: the doctor uses an objective test to show the factual claims of the patient to be false.
- B. The politician does not use an objective test to reject the accusation of perjury. The politician merely denies the credibility of the witness; the basis for this denial is not stated.
- C. The insurance agent does not use an objective test as justification for rejecting a claim or for suggesting that there is sufficient evidence for the claimant's testimony.
- D. In this choice, the investigator rejects the results of what some might see as an objective test. However, the investigator does not use the results of an objective test to prove the factual claims of the subject to be incorrect.
- E. This choice does not involve rejecting a claim, nor does it involve any sort of objective test.

The correct answer is A.

CR02531.01

213. A fossil recently discovered in Marlandia, a chain of islands, proves that a present-day reptile indigenous to Marlandia is descended from an ancient reptile species that lived on the islands millions of years ago. The finding is surprising since the ancestral species was thought to have become extinct when Marlandia was submerged in a global sea-level rise twenty-five million years ago. Based on the new discovery, many scientists have concluded that the sea-level rise in question left at least part of Marlandia unsubmerged.

Which of the following would, if true, provide the most additional support for the scientists' conclusion?

- A. Reptiles in Marlandia have adapted to many environmental changes since the sea-level rise.
- B. Marlandia separated from a much larger landmass about eighty million years ago.
- C. No fossils that prove the relationship between the present-day species and the ancestral species have been found anywhere other than Marlandia.
- D. The present-day reptiles are able to thrive on very tiny Marlandia islands.
- E. The ancestral reptiles could not have survived long at sea.

Argument Construction

This question requires that we identify the answer choice that lends the most support for the scientists' conclusion. This conclusion states that the islands of Marlandia must not have been completely submerged during a global rise in sea level as had previously been thought.

Scientists arrived at this conclusion after being surprised to find that a present-day reptile indigenous to Marlandia is descended from an ancient reptile species that lived on the islands millions of years ago. They had believed that this prehistoric species had become extinct millions of years ago when Marlandia was submerged due to a global rise in sea level.

What are some ways that we can strengthen support for the conclusion?

Information that rules out the possibility that the reptile could have survived even if the islands had been completely submerged would strengthen support. So would information that rules out the possibility that the reptile had migrated to somewhere other than Marlandia but traveled back to Marlandia after the islands were no longer submerged.

- A. Even if it is true that reptiles on Marlandia have adapted to environmental changes since the sea-level increase, that does not support the belief that part of Marlandia never became submerged when the sea level rose. It does not rule out either of the two alternative explanations discussed immediately above, for instance.
- B. The argument's conclusion is about whether some part of Marlandia never became submerged. Information indicating that Marlandia separated from a much larger landmass many millions of years before the global sea-level rise is not relevant to that conclusion.
- C. It might seem that this choice supports the conclusion. If the ancestral species never lived anywhere other than Marlandia, then the present-day species could not have descended from this ancestral species elsewhere and only later, after the sea-level rise, migrated to Marlandia. That would help rule out an alternative explanation of how the present-day species survived the global sea-level rise. However, note that all we are told is that no fossils have been found anywhere other than Marlandia. Simply because no such fossils have yet been found does not indicate that these ancestral species never existed elsewhere. Fossils are often deeply buried and hard to find. After all, the fossils on Marlandia that are discussed in the argument were only recently found; perhaps other such fossils will soon be found elsewhere. Thus, this answer choice does not support the conclusion.
- D. This does not provide any particular support for the argument. Note that it is not the present-day reptile species that is presumed to have survived on Marlandia when sea levels rose. Rather, it is the ancestral species that is presumed to have survived.
- E. **Correct.** This rules out that the ancestral species could have survived the sea-level rise simply by living at sea. It also reduces the possibility that the

ancestral species had also lived elsewhere than Marlandia and had only later—after the sea-level rise—migrated to Marlandia.

The correct answer is E.

CR21041.01

214. Advertisement: Our competitors' computer salespeople are paid according to the value of the products they sell, so they have a financial incentive to convince you to buy the most expensive units—whether you need them or not. But here at Comput-o-Mart, our salespeople are paid a salary that is not dependent on the value of their sales, so they won't try to tell you what to buy. That means when you buy a computer at Comput-o-Mart, you can be sure you're not paying for computing capabilities you don't need.

Which of the following would, if true, most weaken the advertisement's reasoning?

- A. Some less-expensive computers actually have greater computing power than more expensive ones.
- B. Salespeople who have a financial incentive to make sales generally provide more attentive service than do other salespeople.
- C. Extended warranties purchased for less-expensive computers can cost nearly as much as the purchase price of the computer.
- D. Comput-o-Mart is open only limited hours, which makes it more difficult for many shoppers to buy computers there than at other retail stores.
- E. Comput-o-Mart does not sell any computers that support only basic computing.

Argument Evaluation

This question asks us to weaken the argument's reasoning. The advertisement makes the following argument: because the salespeople at Comput-o-Mart are on salary rather than paid a commission for products they sell, the store's customers will not pay for computers that are more powerful than those that the customers need.

To weaken this reasoning, we need to drive a wedge between the given premises and the conclusion: we need to show that it is not necessarily true that, simply because salespeople do not have an incentive to sell more powerful computers, customers will not buy computers that exceed their own needs.

For example, consider a case where customers' computing needs are basic, but Comput-o-Mart sells only advanced computers. In this scenario, customers purchasing from Comput-o-Mart would almost certainly be paying for computing capabilities that they do not need.

- A. The argument hinges on the fact that a customer may pay for computing power that he or she does not need. This statement simply notes that high computing power may in at least some cases not cost more than low computing power. In this case, if anything, it might be more likely that a customer would buy a computer more powerful than he or she needs. Even so, the statement is a general statement about computers rather than a statement specifically about those sold at Comput-o-Mart. We are not told whether Comput-o-Mart even sells any of these computers. If not, then this statement is irrelevant to the argument.
- B. This statement suggests that the salespeople at Comput-o-Mart may be less attentive to customers than salespeople at Comput-o-Mart's competitors. That clearly does not give us a reason to think that a customer at Comput-o-Mart may end up paying for computing power that he or she does not need.
- C. The argument discusses whether customers at Comput-o-Mart pay for computing power that they do not need. The costs of extended warranties are irrelevant to this discussion.
- D. Again, this is irrelevant to the argument: Comput-o-Mart's hours, however limited, do not affect whether its customers pay for computing power that they do not need.
- E. **Correct.** If Comput-o-Mart's customers require only basic computing and Comput-o-Mart sells only advanced computers, then it follows that Comput-o-Mart's customers are likely to pay for computing power that they do not need. That is, regardless of Comput-o-Mart's salespeople's payment structure (salary versus commission), if Comput-o-Mart sells only more advanced, more expensive models, then any customer at Comput-o-Mart who requires only basic computing would in fact be paying for unnecessary computing power.

The correct answer is E.

CR36441.01

215. Consumer advocate: In our nation, food packages must list the number of calories per food serving. But most of the serving sizes used are misleadingly small and should be updated. The serving sizes were set decades ago, when our nation's people typically ate smaller portions than they do today, and, as a result, people eating typical portions today consume more calories than the package labeling appears to indicate that they will. It is time package labeling reflected these changes.

Which of the following is the main point of the consumer advocate's argument?

- A. The number of calories per serving listed on most food packages in the consumer advocate's nation is misleadingly small.
- B. Most serving sizes used on food packages in the consumer advocate's nation should be increased to reflect today's typical portion sizes.
- C. People eating typical portions today often consume far more calories than the number of calories per serving listed on food packages in the consumer advocate's nation.
- D. The serving sizes used on food packages in the consumer advocate's nation were set when people ate smaller portions on average than they do today.
- E. The use of misleadingly small serving sizes on food packages in the consumer advocate's nation probably leads many people to consume more calories than they otherwise would.

Argument Construction

Of the answer choices given, which one most accurately states the consumer advocate's main point, that is, the advocate's main conclusion?

We are told that nutritional information on food packages currently is outdated and misleading. That is, the serving sizes that these packages show tend to understate the calories people will consume because people now typically consume greater amounts than people did when the serving sizes were set *decades ago*.

The consumer advocate's main conclusion is to recommend that serving sizes be updated to reflect the changes in food-consumption trends.

- A. The fact that serving sizes are misleadingly small is a premise of the argument rather than its conclusion.
- B. **Correct.** This accurately expresses the consumer advocate's main conclusion.
- C. The fact that people consume more calories per serving than the amount indicated on the packaging is a premise of the argument rather than its conclusion.
- D. The fact that serving sizes were set during a time when people consumed smaller portions is a premise of the argument rather than its conclusion.
- E. The fact that people consume more calories than they believe they consume because of misleading packaging is a premise of the argument rather than its conclusion.

The correct answer is B.

CR05941.01

216. Columnist: Metro City has a lower percentage of residents with humanities degrees than any other city of comparable size in our nation. Nationwide, university graduates generally earn more than people who are not

university graduates, but those with humanities degrees typically earn less than do graduates with degrees in other disciplines. So the main reason Metro City has higher income per capita than any other city of comparable size in our nation must be its low percentage of residents with humanities degrees.

Which of the following, if true, would most strengthen the columnist's argument?

- A. Metro City residents with humanities degrees have higher income per capita than do people with humanities degrees in any other city of comparable size in the nation.
- B. The percentage of residents with university degrees is lower in Metro City than in any other city of comparable size in the nation.
- C. Nationwide, university graduates without humanities degrees typically earn more than do individuals without university degrees.
- D. Metro City residents with degrees outside the humanities have per capita income no higher than the per capita income of such residents of other cities of comparable size in the nation.
- E. In Metro City, a lower proportion of university graduates have humanities degrees than in any other city of comparable size in the nation.

Argument Evaluation

Which one of the five answer options provides the information that most strengthens the columnist's argument?

The columnist's reasoning seeks to explain why Metro City has higher per capita earnings than any city of comparable size. It attributes this to the fact that Metro City has a lower percentage of residents with humanities degrees than do these other comparable cities.

Suppose the residents with university degrees outside the humanities had a higher per capita income than such residents in the comparable cities nationwide. If that were the case, then that would indicate that the higher per capita income of such residents is sufficient to explain Metro City's divergence in per capita income from the comparable cities.

That is, if we have information to indicate that is NOT the case, the case for the explanation offered—a lower percentage of residents with humanities degrees—is strengthened.

- A. This weakens the columnist's explanation by offering a potential alternative explanation: the higher per capita incomes of those with humanities degrees in Metro City might explain the higher per capita income of Metro City residents.
- B. This does not lend additional support to the columnist's explanation. It suggests other possible explanations: first, the holders of degrees outside of humanities may have extraordinarily high incomes even for such graduates nationwide; second, Metro City may be unusual in having

workers without university degrees who have an unusually high per capita income; third, both of these groups may have unusually high per capita incomes.

- C. This does not lend additional support to the columnist's explanation. However, it is well-supported by the information offered in support of the argument's conclusion: university graduates generally earn more than others, and among university graduates, humanities graduates earn less than others.
- D. **Correct.** As explained above, this information, by eliminating an alternative explanation to that offered in the argument's conclusion, strengthens the argument.
- E. This information is consistent with the information provided in support of the argument's conclusion. It does not, however, provide additional support for the argument's conclusion. This information is consistent with alternative explanations for the higher per capita income of Metro City's residents. That is, for example, that the holders of non-humanities degrees, or those with no degrees at all, have particularly high per capita income.

The correct answer is D.

CR87051.01

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217. Psychologist: In a survey, several hundred volunteers rated their own levels of self-control and their overall life satisfaction. The volunteers who rated themselves as having better self-control also reported greater satisfaction with their lives. This suggests that self-control is one factor that helps people avoid situations likely to produce dissatisfaction.
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- In order to assess the strength of the psychologist's argument, it would be most helpful to know whether
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- A. people typically rate themselves as having significantly better self-control than expert psychological assessments would rate them as having
 - B. people's perceptions of how satisfied they are with their lives could be affected by factors of which they are unaware
 - C. there is a high level of self-control that tends to reduce overall life satisfaction
 - D. people's ratings of their overall satisfaction with their lives tend to temporarily decrease in situations likely to produce dissatisfaction
 - E. feelings of dissatisfaction significantly interfere with people's ability to exercise self-control

Argument Evaluation

Which one of the further pieces of information given in the answer choices would most help us evaluate the psychologist's argument?

A psychologist tells us that people surveyed who reported high levels of self-control reported high levels of life satisfaction also. The psychologist infers from this that self-control is one factor that helps people avoid situations likely to produce dissatisfaction with their lives.

Note that only answer options C and E directly address a possible causal link between degree of life satisfaction and degree of self-control. Answer option C tells us that a high degree of self-control can actually reduce life satisfaction. However, this information, if accurate, does little to weaken support for the conclusion that self-control helps people avoid situations likely to create dissatisfaction. Furthermore, it provides no support for that conclusion. That leaves E as the most likely candidate for the correct response. Suppose E were correct; that is, feelings of dissatisfaction make effective self-control less likely. This is compatible with the correlation between self-control and feelings of satisfaction—but also strongly suggests that self-control is the effect rather than the cause of feelings of satisfaction. And this undermines the conclusion of the argument.

- A. This suggests that the self-ascribed levels of self-control of the participants in the survey may have been exaggerated. This weakens the psychologists' conclusion without completely invalidating this evidence.
- B. This implies that survey participants were not fully aware of all the factors that affected their perceptions of life satisfaction. However, the conclusion does not depend on the participants' degree of awareness of the factors affecting their perceptions of life satisfaction.
- C. This may be true, but even if true in some cases, this information does not necessarily invalidate the psychologist's conclusion in general.
- D. This implies that people's ratings of their life satisfaction can vary, and be temporarily lowered, by encountering a situation likely to produce dissatisfaction. But such possible sources of random error would be allowed for in the statistical analysis of the survey results and do not necessarily invalidate the study's results.
- E. **Correct.** As explained, this information undermines the psychologist's conclusion by providing an alternative explanation for the survey results.

The correct answer is E.

CR03161.01

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218. Mansour: We should both plan to change some of our investments from coal companies to less polluting energy companies. And here's why. Consumers are increasingly demanding nonpolluting energy, and energy companies are increasingly supplying it.
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Therese: I'm not sure we should do what you suggest. As demand for nonpolluting energy increases relative to supply, its price will increase, and then the more polluting energy will cost relatively less. Demand for the cheaper, dirtier energy forms will then increase, as will the stock values of the companies that produce them.

Therese responds to Mansour's proposal by doing which of the following?

- A. Advocating that consumers use less expensive forms of energy
- B. Implying that not all uses of coal for energy are necessarily polluting
- C. Disagreeing with Mansour's claim that consumers are increasingly demanding nonpolluting energy
- D. Suggesting that leaving their existing energy investments unchanged could be the better course
- E. Providing a reason to doubt Mansour's assumption that supply of nonpolluting energy will increase in line with demand

Argument Construction

Which one of the answer options best describes the response of Therese to Mansour?

Mansour advocates that Therese and he should replace their investments in coal companies with investments in companies producing less polluting energy. He suggests this because there is both an increasing demand for and increasing supply of such energy.

However, Therese responds that as demand for clean energy increases, its prices will increase. These higher prices will increase demand for cheaper, dirtier energy. This will boost the stock prices of companies producing such dirty energy, for example, coal. The point of Therese's response is that since the stock prices of coal companies and other companies producing dirty energy will likely increase, investments in these stocks will increase in value. This provides a financial reason not to do what Mansour advocates.

- A. Therese does not advocate that consumers use polluting energy; she simply predicts that the stock values of producers of polluting energy are likely to increase as the prices of polluting energy decrease relative to the prices of non-polluting energy.
- B. Therese does not imply that there exist non-polluting uses of coal; in fact, she appears to agree with Mansour that coal is a dirty form of energy.
- C. There is nothing to indicate that Therese disagrees with Mansour regarding whether consumers are increasingly demanding non-polluting energy.
- D. **Correct.** This accurately captures the main point of Therese's response to Mansour: she provides a particular reason that maintaining their current investments could be a better option.
- E. Therese does not directly address the question of whether this assumption

of Mansour's is correct. Even if she implies that Mansour's assumption is incorrect, this is not the main point of her response to Mansour.

The correct answer is D.

CR04161.01

219. Scientist: In an experiment, dogs had access to a handle they could pull to release food into a nearby enclosure that contained a familiar dog and nothing else, contained an unfamiliar dog and nothing else, or was empty. The dogs typically released more food to the familiar dog than to the unfamiliar dog. This suggests that dogs are more motivated to help other dogs they know than to help unfamiliar dogs.

The scientist's argument would be most strengthened if it were true that, in the experiment, the dogs with access to the handle tended to release more food when

- A. the behavior was being encouraged by a familiar person than when it was being encouraged by an unfamiliar person
- B. the enclosure was empty than when it contained an unfamiliar dog
- C. an unfamiliar dog in the enclosure was displaying hostility toward them than when an unfamiliar dog in the enclosure appeared friendly
- D. a dog in the enclosure appeared uninterested in food already released into the enclosure than when it appeared interested in that food
- E. a familiar dog was in the enclosure than when a familiar dog was visible but the enclosure was empty

Argument Evaluation

Which one of the five experimental outcomes, if added to the information given, would most strengthen the evidence for the scientist's conclusion?

There were three enclosures, two of which contained a dog. Only one of these contained a familiar dog. The dogs released more food to familiar dogs than to unfamiliar dogs. The scientists thereby concluded that dogs are more motivated to help familiar dogs than they are to help unfamiliar dogs. However, it is possible that releasing the food to the familiar dog could have been motivated by other reasons. For example, the dog could simply be trying to communicate with the familiar dog rather than necessarily trying specifically to help this dog.

If the dogs released more food to a familiar dog while it was contained in an enclosure than when it was not enclosed yet nearby and visible, this would strengthen the idea of trying to "help" the other dog.

- A. This information would weaken the scientist's argument. It introduces information suggesting the presence of a confounding variable in the experimental setup. That is, if the behavior was encouraged by a familiar

person, we would not be able to tell whether it was this person's presence or the presence of the other dog that increased the behavior.

- B. This would suggest that the dog's activation of the lever was not contingent on providing food to another animal. In other words, if the dog provides food even when there is no animal to provide food for, then it follows that the presence of the other dog is irrelevant to this behavior.
- C. The experimental setup described here introduces the factor of friendliness. Adding this extra factor could easily confound testing of the original hypothesis, which suggested that simple familiarity increased the behavior.
- D. The experimental setup described here introduces a factor of food interest. Adding this extra factor could easily confound testing of the original hypothesis, which suggested that simple familiarity increased the behavior.
- E. **Correct.** This information would strengthen the hypothesis that a desire to help a familiar dog was operative in the dog's behavior.

The correct answer is E.

CR09461.01

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220. Most geologists believe oil results from chemical transformations of hydrocarbons derived from organisms buried under ancient seas. Suppose, instead, that oil actually results from bacterial action on other complex hydrocarbons that are trapped within the earth. As is well known, the volume of these hydrocarbons exceeds that of buried organisms. Therefore, our oil reserves would be greater than most geologists believe.

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Which of the following, if true, gives the strongest support to the argument above about our oil reserves?

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A. Most geologists think optimistically about the earth's reserves of oil.
- B. Most geologists have performed accurate chemical analyses on previously discovered oil reserves.
- C. Ancient seas are buried within the earth at many places where fossils are abundant.
- D. The only bacteria yet found in oil reserves could have leaked down drill holes from surface contaminants.
- E. Chemical transformations reduce the volume of buried hydrocarbons derived from organisms by roughly the same proportion as bacterial action reduces the volume of other complex hydrocarbons.

Argument Evaluation

What new information, if added to the argument, would strengthen it?

The argument sets forth a novel hypothesis about how oil reserves are created. That is, oil reserves are created through bacterial action on complex hydrocarbons within the earth rather than through chemical transformation of hydrocarbons derived from organisms buried under ancient seas. The argument notes that the volume of the hydrocarbons that bacteria transform to yield oil is greater than the volume of hydrocarbons derived from the buried organisms and concludes that total oil reserves are greater than most geologists believe them to be.

- A. This suggests that most geologists might, if anything, be inclined to overestimate oil reserves. However, this consideration has little bearing on the chemical origin of oil or how much oil may remain buried in the earth.
- B. This does not tell us whether the chemical analyses can identify whether the oil originated from hydrocarbons derived from buried organisms.
- C. The existence of buried ancient seas has little, if any, relevance to the argument. This choice fails to provide evidence that by itself would help decide whether the hypothesized bacterial origin of oil actually supports the inference that oil reserves are greater than is currently assumed.
- D. This suggests that bacteria have been found in some oil reserves; the potential importance of this discovery is unclear.
- E. **Correct.** This strengthens the argument: if it is true, then the greater abundance of complex hydrocarbons from which it is hypothesized that oil can be derived through bacterial action would predict much larger oil reserves than exist under most geologists' current predictions.

The correct answer is E.

CR66561.01

221. Meteorologists say that if only they could design an accurate mathematical model of the atmosphere with all its complexities, they could forecast the weather with real precision. But this is an idle boast, immune to any evaluation, for any inadequate weather forecast would obviously be blamed on imperfections in the model.

Which of the following, if true, could best be used as a basis for arguing against the author's position that the meteorologists' claim cannot be evaluated?

- A. Certain unusual configurations of data can serve as the basis for precise weather forecasts, even though the exact causal mechanisms are not understood.
- B. Most significant gains in the accuracy of the relevant mathematical models are accompanied by clear gains in the precision of weather forecasts.

- C. Mathematical models of the meteorological aftermath of such catastrophic events as volcanic eruptions are beginning to be constructed.
- D. Modern weather forecasts for as much as a full day ahead are broadly correct about 80 percent of the time.
- E. Meteorologists readily concede that the accurate mathematical model they are talking about is not now in their power to construct.

Argument Evaluation

Which one of the following would provide the best basis for arguing against the author's reasoning?

Meteorologists claim that the design of a mathematical model that would accurately capture all the complexities of weather dynamics would enable great precision in weather forecasting. However, according to the skeptical reasoning given, the meteorologists' claim cannot be evaluated, because any inaccuracies in weather forecasting would be attributed to shortcomings in the model.

It is important to consider that with the incremental improvement of capabilities for collection and analysis of data, including new types of data, model construction would improve to more accurately reflect weather dynamics. However, it would remain true that random factors affecting weather may continue to reduce accuracy of forecasts.

- A. This suggests that weather forecasting accuracy can be attained under certain unusual conditions, even in the absence of understanding complex factors that affect weather. Nevertheless, what is at issue in the skeptical reasoning given is how, or whether, overall forecasting accuracy can be attained under all conditions. Furthermore, it is unclear whether the meteorologists' aspiration to great precision and accuracy in weather forecasting can even be evaluated.
- B. **Correct.** This tells us that significant but incremental improvements in the accuracy of mathematical models result in gradual improvements in the accuracy of weather forecasting—even if wholly accurate and precise forecasts are never attained. This would allow evaluation of any progress in modeling and forecasting weather.
- C. Volcanic eruptions can affect weather but they do not rank as major ongoing causes of weather phenomena. The reasoning given refers to forecasting of weather under all conditions, whether the meteorologists' ideal is attainable or can even be evaluated.
- D. This suggests that current weather forecasting falls significantly short of the forecasting accuracy that the meteorologists mentioned aspire to. This idea reinforces the skeptical reasoning that suggests the meteorologists' ideal is not amenable to evaluation and may not even be attainable.
- E. This does not convey a reason for thinking the meteorologists' claim can reasonably be subjected to evaluation; furthermore, it seems to provide some support for the skeptical reasoning given.

The correct answer is B.

CR38561.01

222. The lobbyists argued that because there is no statistical evidence that breathing other people's tobacco smoke increases the incidence of heart disease or lung cancer in healthy nonsmokers, legislation banning smoking in workplaces cannot be justified on health grounds.

Of the following, which is the best criticism of the argument reported above?

- A. It ignores causes of lung cancer other than smoking.
- B. It neglects the damaging effects of smoke-filled air on nonsmokers who are not healthy.
- C. It fails to mention the roles played by diet, exercise, and heredity in the development of heart disease.
- D. It does not consider the possibility that nonsmokers who breathe smoke-filled air at work may become more concerned about their health.
- E. It does not acknowledge that nonsmokers, even those who breathe smoke-filled air at work, are in general healthier than smokers.

Argument Evaluation

Among the answer choices given, which one describes the most significant flaw in the reasoning, given the information provided?

Note that not all nonsmokers are healthy in every respect. This raises the possibility that tobacco-smoke exposure of some nonsmokers—those who already have some medical condition—could either worsen existing illnesses or cause new ones such as lung cancer or heart disease.

The risks in such exposure could be significantly greater for those unhealthy nonsmokers than for the healthy nonsmokers.

- A. This choice is outside the scope of the argument. The argument addresses the issue of illnesses that could be caused by exposure to other people's smoke in the workplace. In this context, cancer-causing factors other than smoking are irrelevant.
- B. **Correct.** The information provided does not mention health risks to unhealthy nonsmokers that exposure to other people's tobacco smoke in the workplace might cause.
- C. This choice is outside the scope of the argument. The argument addresses the issue of illnesses that could be caused by exposure to other people's smoke in the workplace. It does not address general risk factors that contribute to anybody's risk of getting heart disease.
- D. The argument does not consider whether nonsmokers might become concerned about their health risks in workplaces where they breathe smoke. The argument is about health risks, not about workers' attitudes to

health risks.

- E. The argument suggests that healthy nonsmokers are not unduly affected by cigarette smoke in the workplace. While possibly true, this claim is not a valid criticism of the argument as stated. The argument has no explicit comparison of the health levels of smokers and nonsmokers.

The correct answer is B.

CR78561.01

223. Since 1978 when the copyright law was changed, books that are less than fifty years old must not be photocopied without the publisher's permission. Thus, any book that has been photocopied since 1978 without the publisher's permission must be at least fifty years old.

The reasoning above exhibits a flaw similar to one in which of the following?

- A. Any member of the solar system must be either a planet or a moon, so if an asteroid is neither a planet nor a moon, it must not be a member of the solar system.
- B. Anyone who rides a city bus must buy a bus pass, and since Demetrios has a bus pass, he must be riding on a city bus.
- C. A driver who turns right must signal, so any driver who did not signal must not have turned right.
- D. Anyone who legally crosses a national boundary must have a passport; thus anyone who does not have a passport cannot legally cross a national boundary.
- E. Any wage earner residing in the state must pay state taxes, so since Blodwen pays state taxes, she must be resident in the state.

Argument Evaluation

The flaw in which one of the five arguments presented is most similar to the flaw in the given argument?

The conclusion of the given argument is adequately supported by its premises only if supplemented by a highly implausible assumption: *Since the 1978 copyright law came into force, no book published since 1978 has been photocopied without the publisher's permission.*

However, this would be unreasonable to assume: we have no reason to assume that the existence of a rule implies compliance with that rule.

- A. This argument contains no flaw; its conclusion follows logically from its supporting information.
- B. This argument is flawed because it is possible that Demetrios is not riding on a city bus but yet still owns a bus pass. However, this is not an argument regarding compliance or non-compliance with a rule.
- C. **Correct.** This argument has the same structure as the given argument.

For the argument to work, it must be supplemented with the following highly implausible assumption: No driver who fails to signal turns right. That assumption is implausible because the existence of a rule is not always followed by compliance with that rule.

- D. The conclusion drawn here follows logically from the premise on which it is based. Therefore, the argument is not flawed.
- E. This argument is flawed: it is possible that Blodwen pays state taxes yet is not a resident in the state. The condition “liable to pay state tax” applies to all residents of the state, but we do not know that this applies only to residents of the state. That is, the class of those “liable to pay state tax” may in fact be larger than the class of those “resident in the state.” In any case, the structure of this argument is significantly different from the given argument.

The correct answer is C.

CR10661.01

224. In the United States, injuries to passengers involved in automobile accidents are typically more severe than in Europe, where laws require a different kind of safety belt. It is clear from this that the United States needs to adopt more stringent standards for safety belt design to protect automobile passengers better.

Each of the following, if true, weakens the argument above EXCEPT:

- A. Europeans are more likely to wear safety belts than are people in the United States.
- B. Unlike United States drivers, European drivers receive training in how best to react in the event of an accident to minimize injuries to themselves and to their passengers.
- C. Cars built for the European market tend to have more sturdy construction than do cars built for the United States market.
- D. Automobile passengers in the United States have a greater statistical chance of being involved in an accident than do passengers in Europe.
- E. States that have recently begun requiring the European safety belt have experienced no reduction in the average severity of injuries suffered by passengers in automobile accidents.

Argument Evaluation

The argument suggests that passengers involved in automobile accidents in the United States typically are more seriously injured than those in Europe. Furthermore, in Europe, a different safety belt design is used. The argument suggests that these European-style safety belts are more protective against

serious injury than those used in the United States. Furthermore, it suggests that the United States would therefore benefit by adopting more stringent design standards for safety belts.

To clarify, the rate of severe injuries would indicate, for example, the number of seriously injured passengers per 100,000 passengers involved in automobile accidents. Note that this rate does not depend on the total number of passengers involved in automobile accidents.

However, many other factors could provide an alternative explanation for these differences in rate of severe injury. The question stem asks us which answer choice does NOT weaken the argument; in other words, we must find a factor among the answer choices that does NOT account for this difference in the rate of severe injury. Effectively, we will be looking for the answer that has no bearing on the rate of severe injury.

Which one of the statements given does NOT weaken the argument?

- A. This choice weakens the argument. It suggests the possibility that the difference in rates of severe injury is due to the number of people who actually wear safety belts in the U.S. versus in Europe. This rate is, of course, irrespective of the functionality of the belts themselves. In other words, the effectiveness of the belt design is irrelevant if the belt is not being worn in the first place.
- B. This choice weakens the argument. Training to understand how to minimize injury, rather than a safety belt design difference, may be a primary factor accounting for the lower severe injury rate in Europe.
- C. This choice weakens the argument. The fact that cars constructed in Europe are more sturdy may account for the lower severe injury rate in Europe rather than the difference in the types of safety belts used.
- D. **Correct.** This choice does not weaken the argument. The higher likelihood that one is involved in an automobile accident in the U.S. actually has no bearing on the higher rate of severe injury among passengers who are involved in automobile accidents. That is, the rate itself is a proportion of the total number of passengers involved in accidents rather than the number itself. This rate would remain the same whether 10 accidents or 10 million accidents occurred.
- E. This answer choice suggests that even implementation within the United States of the European safety belt design does not seem to change serious injury rates. This implies, of course, that some other factor is likely responsible for the differences in rates of serious injury between the U.S. and Europe.

The correct answer is D.

CR60661.01

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225. A country's Aeronautics Board (AB) employs inspectors who make routine annual inspections of all aircraft. On inspecting Azura Airlines' airplanes in December, they reported considerably more violations of AB rules this year, compared to a year ago. This fact explains why Azura had more accidents this year, compared to last year.

Which of the following, if true, would cast most doubt on the conclusion in the passage?

- A. Some aviation experts in other countries consider certain AB rules to be too lax and too easy to get around.
- B. Azura's routes are no more dangerous than are those of most other airlines.
- C. The AB increased the length and rigor of its inspections this year, compared to last year.
- D. Prior to last year Azura had an excellent safety record with very few accidents.
- E. In both years the AB report on Azura did not include violations on airplanes owned by Azura but leased by another airline.

Argument Evaluation

During the Aeronautic Board (AB)'s annual inspection, it found more violations among Azura Airlines' airplanes this year than last. The argument suggests that this increase in the number of violations provides an explanation for why Azura Airlines experienced more accidents this year than last. We must choose the statement that most weakens the conclusion.

- A. This statement is outside the scope of the argument; aviation experts in foreign countries' opinion of AB has no bearing on the AB and its evaluation of Azura Airlines.
- B. This statement is outside the scope of the argument; even if Azura's routes are more dangerous than its competitors', the relationship between Azura's routes and other airlines' routes has no bearing on the AB and its evaluation of Azura Airlines.
- C. **Correct.** This statement provides an alternative reason that the number of violations for Azura Airlines would have increased. That is, if the AB conducted more extensive and more rigorous inspections this year, then it is very likely that the number of violations found by the AB would increase. In other words, if more points are tested or existing tests are made stricter, then the increase in rigor of the testing would presumably lead to an increase in violations.
- D. This statement is outside the scope of the argument; the argument only concerns last year as compared to this year. Azura Airlines' record prior to last year is irrelevant to this.
- E. This information does not apply to the argument at hand; the argument

only concerns the planes that were in fact counted both years. If we could take this information to imply that even more Azura-owned airplanes violate safety standards than previously thought, this would actually strengthen the argument rather than weaken it.

The correct answer is C.

CR13661.01

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226. The more frequently employees take time to exercise during working hours each week, the fewer sick days they take. Even employees who exercise only once a week during working hours take less sick time than those who do not exercise. Therefore, if companies started fitness programs, the absentee rate in those companies would decrease significantly.

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Which of the following, if true, most seriously weakens the argument above?

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A. Employees who exercise during working hours occasionally fall asleep for short periods of time after they exercise.
B. Employees who are frequently absent are the least likely to cooperate with or to join a corporate fitness program.
C. Employees who exercise only once a week in their company's fitness program usually also exercise after work.
D. Employees who exercise in their company's fitness program use their working time no more productively than those who do not exercise.
E. Employees who exercise during working hours take slightly longer lunch breaks than employees who do not exercise.

Argument Evaluation

The argument suggests that the greater the amount of time employees take to exercise during working hours, the fewer sick days these employees take. This is true even of employees who exercise just once a week during work hours.

Based on this evidence, the argument concludes that companies that start fitness programs will see a significant decrease in the absentee rate.

The question asks us to identify a serious weakness in the argument. The argument as stated does not address the following fundamental problem: the same employees who are frequently absent may also fail to make use of such a fitness program. If that is true, therefore, the evidence provided would give us little reason to believe that those who are currently frequently absent would be absent less often if such a program were implemented.

- A. This answer choice may call into question the advisability of starting such a fitness program. That, however, is not what the argument's conclusion is about. The argument's conclusion states that company-run fitness programs will reduce absentee rates, but this choice tells us nothing about

what effect, if any, such fitness programs would have on absentee rates.

- B. **Correct.** The argument assumes that exercising during office hours will lead employees to be absent from work less frequently. However, this choice indicates that those who are frequently absent are the least likely to make use of a company fitness program. That could mean that these employees will use such fitness programs rarely, if at all. If so, we would have far less reason to believe that there would be a significant decline in the absentee rate if such a program were implemented.
- C. This answer choice is outside the scope of the argument: we are not given any information about how exercise outside of work affects absentee rates.
- D. This answer choice is outside the scope of the argument: the argument's conclusion is about absentee rates; the argument does not concern productivity.
- E. This answer choice is outside the scope of the argument: there is no information to suggest any correlation between the length of lunch breaks and the use of fitness programs or the length of lunch breaks and rates of absence.

The correct answer is B.

Critical Reasoning Construction/Plan

CR67370.01

227. Distressed by his own personal tragedies, the Roman philosopher Cicero once asked himself whether a wise person should try to achieve the Stoic ideal of complete emotionlessness. Cicero reasoned that, however desirable the goal may be, a wise person could never attain it, since emotions are not simply irrational urges. They are, rather, a product of one's estimate of the goodness and badness of the events, people, and actions one witnesses.

Which of the following is an assumption required by Cicero's reasoning?

- A. Wise people inevitably evaluate at least some of the things they observe.
- B. Irrationality makes evaluation of what one observes impossible.
- C. Wisdom precludes attempting to attain what one cannot.
- D. If evaluations are based only on reason, then they are inaccurate.
- E. A wise person will not evaluate what cannot be directly observed.

Argument Construction

The question asks us to identify an assumption required by Cicero's reasoning.

Cicero reasoned that a wise person could never attain the goal of complete emotionlessness, because emotions are not merely irrational urges but *a product of one's estimate of the goodness and badness of events, people, and actions one witnesses*.

Why would Cicero have thought that this is a good reason to believe that a wise person could never be completely emotionless? He must have thought that wise people cannot completely avoid making evaluations of the goodness and badness of at least some of the events, people, and actions they witness. If he thought they could completely avoid making such evaluations, the reason he gave for his conclusion would not have supported it.

- A. **Correct.** As indicated above, Cicero's argument requires that wise people evaluate at least some of the things that they observe.
- B. Cicero's argument does not require this assumption. It makes sense to think that wise people would not be irrational. However, this assumption suggests that it is possible to avoid evaluations of what one observes, which is not helpful to Cicero's reasoning.
- C. If Cicero's conclusion is true, then this assumption helps support the claim that wise people should not attempt to attain the goal of complete emotionlessness. But the question does not ask you to identify an assumption that would allow you to infer that wise people should not attempt to attain that goal. Instead, the question asks you to identify an assumption that is required to infer that wise people cannot attain that goal. Whether you should try to do something is a different issue from whether you can do something.
- D. Cicero's argument is not about the accuracy of one's evaluations; rather, it assumes that wise people will inevitably make such evaluations.
- E. Cicero's argument is based on a premise about evaluations of the observed, not about evaluations of what is impossible to observe.

The correct answer is A.

CR49770.01

228. First discovered several years ago in North American lakes and rivers, the northern snakehead is a nonnative fish with no local predators. To keep the northern snakehead's population from growing, for the past three years wildlife officials have been paying recreational fishers for each northern snakehead they catch. In this way, the officials hope to stop the northern snakeheads from eliminating rare native fish species.

To evaluate the likelihood that the wildlife officials' plan will succeed, it would be most useful to determine which of the following?

- A. Whether the northern snakehead's population in local lakes and rivers

- could be reduced by introducing predators from its native habitat
- B. How local population numbers of rare native fish species have been changing since the wildlife officials started paying recreational fishers to catch northern snakeheads
 - C. Whether the fish species on which the northern snakehead preys in regions to which it is native and in which it is abundant have become significantly depleted in recent decades
 - D. What total number of northern snakehead have been caught by recreational fishers since the wildlife officials began paying for them
 - E. Whether rare native fish species in the region face any threats to their survival other than the proliferation of northern snakehead

Evaluation of a Plan

In hopes of preventing the nonnative species northern snakehead from eliminating rare native fish species, wildlife officials have for the last three years been paying recreational fishers for each snakehead they catch. The northern snakehead has no predators in the area.

This question requires us to identify information that would be useful for determining whether the officials' plan will succeed.

Note that the plan has already been in effect. Nevertheless, we are given no information as to how well the plan has succeeded so far. To determine whether it is responsible to keep paying these fishers to catch northern snakehead, it is vital to understand whether the fishers' work up to this point has had any observable effect.

That is, it would be helpful to anyone who wants to determine whether the officials' plan is likely to succeed to have information about how the numbers of rare native fish species have been changing during that time.

- A. This information would be useful for determining whether there may be alternative ways of reducing the northern snakehead population. However, it is not useful for determining whether the plan in question is likely to be successful.
- B. **Correct.** As noted above, this information would be helpful in assessing whether the officials' plan is likely to succeed. If the numbers of rare native fish species have stayed constant or even declined throughout the period that the plan has been in place, it seems unlikely that the plan will ultimately be successful.
- C. This information may provide a small amount of information as to how great a threat the northern snakehead might pose, but not much. For one thing, in its native region, the snakehead likely preys on different species from those in the region in question. More importantly, however, is the fact that this information is simply not useful to determining whether the officials' plan is likely to work in the region in question.
- D. This might be useful for determining whether fishers have been motivated by the plan. This could potentially be useful for determining whether the

plan will work; after all, the plan will not likely work if very few northern snakeheads are actually removed. Nevertheless, it is not as useful as noting the changes in the native fish population since the plan first went into effect.

- E. Determining whether there are other threats to the rare native fish species would tell us whether the plan, if successful, is sufficient to save the rare fish species. Still, it is not useful in determining whether that plan is likely to be successful.

The correct answer is B.

CR51080.01

229. Scientist: A greenhouse gas, for example, carbon dioxide, forms a transparent layer that traps solar heat beneath it in the earth's atmosphere. Atmospheric levels of carbon dioxide are currently increasing, causing the climate to warm—an effect that is predicted by at least one computer model of the greenhouse effect. But the warming that has occurred is a great deal less than what would be expected based on the model. Therefore, _____.

Which of the following most logically completes the scientist's argument?

- A. better measurements of atmospheric levels of carbon dioxide are needed
B. the definition of “greenhouse gas” should probably be reconsidered
C. there are factors besides the increase in greenhouse-gas emissions contributing to the warming of the climate
D. the computer model of the greenhouse effect must be incorrect in some respect
E. the likely consequences of any warming of the climate are unlikely to be much less damaging than predicted

Argument Construction

This question requires us to choose the option that most logically completes the scientist's argument.

The scientist's argument points out that at least one computer model has predicted that the amount of warming the atmosphere would by now have experienced as a result of the greenhouse effect would be significantly greater than what has actually occurred.

Because what precedes the blank is the word *therefore*, we must choose the statement that is most strongly supported by the information given.

- A. It is reasonable to infer from the given information that some aspect of the computer model is incorrect in some way. One way that it might be incorrect is that the measurements of atmospheric levels of carbon dioxide used are inaccurate. Nevertheless, there is not sufficient information to infer that this is the specific flaw in the model.

- B. The given information provides no reason for us to reconsider the definition of “greenhouse gas.” Perhaps there would be a reason to do so if no warming had occurred whatsoever. However, the information tells us that warming has in fact happened, just not as much as predicted.
- C. If there are factors in addition to greenhouse-gas emissions that lead to atmospheric warming, then presumably temperatures would have risen more than predicted, not less.
- D. **Correct.** If the model were correct, its predictions would be confirmed by the data regarding warming. However, this has not occurred. It is therefore reasonable to infer that, in some way, the computer model is incorrect.
- E. This does not follow from the argument: given the findings, it seems more reasonable to think that the likely consequences of any atmospheric warming would in fact be less damaging than predicted.

The correct answer is D.

CR09090.01

230. Beets and carrots are higher in sugar than many other vegetables. They are also high on the glycemic index, a scale that measures the rate at which a food increases blood sugar levels. But while nutritionists usually advise people to avoid high-sugar and high-glycemic-index foods, despite any nutritional benefits they may confer, they are not very concerned about the consumption of beets and carrots.

Which of the following, if true, would best explain the nutritionists' lack of concern?

- A. Foods with added sugar are much higher in sugar, and have a larger effect on blood sugar levels, than do beets and carrots.
- B. Most consumption of beets and carrots occurs in combination with higher-protein foods, which reduce blood sugar fluctuations.
- C. Beets and carrots contain many nutrients, such as folate, beta-carotene, and vitamin C, of which many people fail to consume optimal quantities.
- D. The glycemic index measures the extent to which a food increases blood sugar levels as compared to white bread, a food that is much less healthy than beets and carrots.
- E. Nutritionists have only recently come to understand that a food's effect on blood sugar levels is an important determinant of that food's impact on a person's health.

Argument Construction

This question requires us to identify an explanation for nutritionists' lack of concern regarding consumption of beets and carrots, despite the fact that they have higher sugar levels than many other vegetables and rate high on the glycemic index.

Normally, nutritionists would advise people against consuming foods that rate high on the glycemic index, whatever their other nutritional benefits.

To explain why nutritionists might hold such apparently conflicting positions, consider whether there might be something notable about the consumption of beets and carrots that makes their consumption an exception to the rule.

- A. The fact that some foods may be even more problematic than beets and carrots does not explain nutritionists' lack of concern about beets and carrots.
- B. **Correct.** This provides a reason that consumption of beets and carrots may be, at least within the suggested context, exempt from nutritionists' concern about consumption of high-sugar, high-glycemic-index foods. Remember, nutritionists' general concern arises from the effects such foods have on those who consume them. If we suggest that beets and carrots are usually consumed with high-protein foods that counteract these unwanted effects, we have good reason not to be concerned about their consumption, at least in regard to their sugar level and glycemic index.
- C. The nutritionists advise people to avoid foods high in sugar and high on the glycemic index despite any nutritional benefits they may confer. Therefore, the fact that beets and carrots have such nutritional benefits does not explain why nutritionists would not be concerned about consuming beets and carrots, given that they both high in sugar and rate high on the glycemic index.
- D. Whatever measure the glycemic index is based on, we know that beets and carrots are high on that index. Furthermore, we know that nutritionists usually advise people to avoid high-sugar and high-glycemic-index foods, despite any nutritional benefits they may confer. Therefore, the fact that beets and carrots are more nutritious than white bread does not in any way explain the nutritionists' lack of concern.
- E. The fact that nutritionists have only recently become concerned about high-sugar and high-glycemic-level foods does not explain their particular lack of concern regarding beets and carrots.

The correct answer is B.

CR36601.01

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231. Ozone in the stratosphere blocks deadly ultraviolet rays from the sun, but chlorofluorocarbons (CFCs) in aerosols and other products have thinned this protective layer. Evidence of this is the ozone hole that forms over the

South Pole every Antarctic spring as temperatures drop below -78°C , the temperature at which ozone depletion occurs. Measurements of the ozone hole taken at various times this spring show that, compared with the same times the previous year, its area diminished by four million square kilometers. Nevertheless, scientists have not concluded that the ozone layer is recovering.

Which of the following would, if true, provide the strongest reason for the scientists' reaction to the measurements?

- A. The ozone hole has steadily grown in size every year for the past decade except this year.
- B. The length of time that the ozone hole persists fluctuates from year to year.
- C. As a result of international treaties, CFCs have been completely banned for several years.
- D. Weather patterns allowed unusual amounts of warm air to mix into the polar regions this year.
- E. Human-made CFCs retain their ability to destroy ozone molecules for seventy-five to one hundred years.

Argument Construction

This question requires us to identify which of the answer choices would provide the strongest reason to support the scientists' skepticism about whether the ozone layer is recovering.

This skepticism exists despite the fact that measurements of the ozone hole taken at various times during the Antarctic spring have shown that the hole has diminished significantly from its size at the same times the previous year. One major reason to be skeptical would be if there were some factor other than a recovery of the ozone layer that could reasonably account for the diminished size of the hole.

- A. This does not give much reason to be skeptical that the ozone layer is recovering. Certainly one would not want to be too hasty in declaring a recovery after noting a trend of growth in the ozone hole's size. Nevertheless, something must account for this year's divergence from the trend. It seems reasonable to conclude, barring the discovery of some other factor that would explain the change, that a recovery in the ozone layer could be a factor in this year's divergence.
- B. Each of the measurements was smaller than at the same time in the previous year. This fact would seem to indicate that fluctuations in the length of time the ozone hole persists do not justify the scientists' skepticism.
- C. The fact that CFCs—which led to the thinning of the ozone layer—have been banned counts against the scientists' skepticism rather than supports it.

- D. **Correct.** The hole forms when the temperature drops below -78°C during the Antarctic spring. If much of the area where the hole appears was significantly warmer than the previous year—perhaps above -78°C —there exists a reason other than a recovery in the ozone layer that explains the smaller size of this year's hole in the ozone. This would support the scientists' skepticism.
- E. Even if CFCs retain their ability to destroy ozone molecules for many decades, something must account for the decrease in the size of the hole. Nothing in the passage indicates whether the amount of CFCs in the atmosphere has been increasing or decreasing. If it has been decreasing for a long time, then this fact is compatible with a belief that the ozone layer is recovering.

The correct answer is D.

CR29111.01

232. The recycling of municipal solid waste is widely seen as an environmentally preferable alternative to the prevailing practices of incineration and of dumping in landfills. Recycling is profitable, as the recycling programs already in operation demonstrate. A state legislator proposes that communities should therefore be required to adopt recycling and to reach the target of recycling 50 percent of all solid waste within 5 years.

Which of the following, if true, most seriously calls into question the advisability of implementing the proposal?

- A. Existing recycling programs have been voluntary, with citizen participation ranging from 30 percent in some communities to 80 percent in others.
- B. Existing recycling programs have been restricted to that 20 percent of solid waste that, when reprocessed, can match processed raw materials in quality and price.
- C. Existing recycling programs have had recurrent difficulties finding purchasers for their materials, usually because of quantities too small to permit cost-effective pickup and transportation.
- D. Some of the materials that can be recycled are the very materials that, when incinerated, produce the least pollution.
- E. Many of the materials that cannot be recycled are also difficult to incinerate.

Evaluation of a Plan

To answer this question, consider what information would call the advisability of implementing this proposal into question.

A state legislator proposes that communities be required to target recycling 50 percent of all solid waste within five years. This legislator argues for the plan in part on the basis that recycling programs already in operation are profitable.

To weaken this argument, consider whether there might be a reason that significantly changing the amount or types of solid waste currently disposed of would make currently profitable recycling programs unprofitable.

- A. This does not cast much doubt on the advisability of implementing the plan. If some communities manage to get as many as 80 percent of their citizens to participate, the goal of recycling 50 percent of all solid waste within certain communities seems attainable.
- B. **Correct.** This suggests that increasing the percentage of solid waste that is recycled to 50 percent may result in a significant amount of recycled, reprocessed material of inferior quality. If this material cannot match processed materials in quality and price, this may make recycling programs no longer profitable.
- C. If the problem is a result of the small quantities, increasing the quantities of materials could alleviate the problem. Therefore, this does not cast doubt on the advisability of implementing the plan.
- D. Even if some of these materials produce little pollution, they nevertheless may produce some pollution. It may still be beneficial to reduce or eliminate this pollution.
- E. This indicates that these materials will most likely need to go into landfills. That does not call into question the advisability of recycling those materials that can be recycled.

The correct answer is B.

CR30721.01

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233. Biologist: Species with broad geographic ranges probably tend to endure longer than species with narrow ranges. The broader a species' range, the more likely that species is to survive the extinction of populations in a few areas. Therefore, it is likely that the proportion of species with broad ranges tends to gradually increase with time.

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The biologist's conclusion follows logically from the above if which of the following is assumed?

- A. There are now more species with broad geographic ranges than with narrow geographic ranges.
- B. Most species can survive extinctions of populations in a few areas as long as the species' geographic range is not very narrow.
- C. If a population of a species in a particular area dies out, that species

generally does not repopulate that area.

- D. If a characteristic tends to help species endure longer, then the proportion of species with that characteristic tends to gradually increase with time.
- E. Any characteristic that makes a species tend to endure longer will make it easier for that species to survive the extinction of populations in a few areas.

Argument Construction

This question asks us to find an assumption that allows the biologist's conclusion to be logically drawn if made in conjunction with the premises of the biologist's argument.

The biologist claims that species with broader ranges are more likely to survive the extinction of populations in certain areas than are species with narrow ranges. The biologist concludes that over time the proportion of species with broader ranges will probably increase.

Note that the argument as it stands is not logically valid: it is possible that if species that now have broad ranges survive the extinction of populations with narrow ranges, the proportion of species with broad ranges could still decline. That is, decimation of populations in certain areas may in fact cause the ranges of species that now have broad ranges to shrink in size, thereby becoming narrow ranges.

Were this to happen at a faster pace than the extinction of species that currently have narrow ranges, the proportion of species with broad ranges would decline rather than increase. The correct answer to this question must rule out this possibility.

- A. This choice does not rule out the possibility that the proportion of species that have broad ranges would decline.
- B. This choice does not rule out the possibility that the proportion of species that have broad ranges would decline.
- C. This choice does not rule out the possibility that the proportion of species that have broad ranges would decline. In fact, this assumption helps to support the claim that as certain populations of a species that once had a broad range die out, that species' range could narrow.
- D. **Correct.** This assumption rules out the possibility described above; furthermore, it rules out any other possibility that allows the biologist's conclusion to be false even if the premises were true.
- E. This choice does not rule out the possibility that the proportion of species that have broad ranges would decline.

The correct answer is D.

CR79731.01

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234. Letter to the editor: If the water level in the Searle River Delta continues to drop, the rising sea level will make the water saltier and less suitable for drinking. Currently, 40 percent of the water from upstream tributaries is diverted to neighboring areas. To keep the delta's water level from dropping any further, we should end all current diversions from the upstream tributaries. Neighboring water utilities are likely to see higher costs and diminished water supplies, but these costs are necessary to preserve the delta.

Which of the following would, if true, indicate a serious potential weakness of the suggested plan of action?

- A. Desalination equipment would allow water from the delta to be used for drinking even if it became saltier.
- B. Water level is only one factor that affects salinity in the delta.
- C. The upstream tributaries' water levels are controlled by systems of dams and reservoirs.
- D. Neighboring areas have grown in population since the water was first diverted from upstream tributaries.
- E. Much of the recent drop in the delta's water level can be attributed to a prolonged drought that has recently ended.

Argument Evaluation

This question requires us to find a potential weakness of the plan suggested. That is, the question requires us to find a reason that ending all current diversions from the Searle River's upstream tributaries might not be a good idea.

Note that the plan is designed to keep the delta's water level from dropping further. While there are costs to executing this plan, the letter claims that these costs are necessary to preserve the delta.

The letter begins with a discussion of how the dropping water levels in the delta will lead to saltier and less potable water, but it is unclear what role this plays in the letter's argument. That is, we do not know whether this is the primary reason for the concern about the delta's water levels. Given the information provided, it could be just one of many concerns. Given the letter says that the *costs are necessary to preserve the delta*, it appears to be just one among multiple concerns.

- A. If the sole reason for wanting to keep the delta's water level from dropping further is to ensure that the river can provide drinking water, then this answer choice might suggest a weakness in the plan. That is, the plan itself would be unnecessary. Note, however, that the main reason given for the plan is to preserve the delta, not to ensure drinkability of the water. Bearing this in mind, there may still be reasons to carry out the plan even if the claim made in this answer choice is true.

- B. The plan does not necessarily need to be able to solve the problem of increased salinity on its own. Even if it cannot, the plan may be an important part of solving the problem. Furthermore, there may be other reasons besides salinity for implementing the plan. This choice, therefore, does not give us a good reason to believe that the plan is not necessary.
- C. This choice gives us a potential explanation of how the upstream water has been diverted. It does not, however, present a weakness in the proposed plan.
- D. This choice suggests a reason that there may be costs to implementing the proposed plan; most clearly, the growing population will need water that it could get from the river. Nevertheless, the letter indicates that these costs are necessary to preserve the delta.
- E. **Correct.** This gives us reason to think that the water levels may actually fix themselves. That is, the level will not continue to decline even if the plan is not carried out. The letter indicates that the specific reason to carry out the plan is to prevent the water level from dropping any further. So if the plan turned out to be unnecessary for preventing such a drop in water level, then the costs of the plan would have made the plan itself undesirable.

The correct answer is E.

CR47931.01

235. Researchers conditioned a group of flies to associate a particular odor with a weak electric shock. Twenty-four and forty-eight hours later the researchers conducted tests on the flies, both individually and in groups, to determine whether the flies retained the conditioning. When tested individually, the flies were significantly less likely to avoid areas marked with the odor. The researchers hypothesized that in the presence of the odor, a fly that retains the conditioned association gives off an alarm signal that arouses the attention of any surrounding flies, retriggering the association in them and thereby causing them to avoid the odor.

The researchers' hypothesis requires which of the following assumptions?

- A. The flies do not give off odors as alarm signals.
- B. Flies that did not avoid the odor when tested individually were not merely following other flies' movements when tested in a group.
- C. Flies that did not avoid the odor when tested individually were less likely than the other flies to avoid the odor when tested in a group.
- D. Prior to their conditioning, the flies would likely have found the odor used in the experiment to be pleasant.
- E. An electric shock was used during the flies' conditioning and during the

later tests.

Argument Construction

This question asks us for an assumption required by the hypothesis.

The researchers noted that the flies that had been conditioned to associate a particular odor with an electric shock were much less likely to avoid the odor when they were tested individually than when they were tested as a part of a group.

Based on this fact, the researchers hypothesized that the flies that had retained the conditioning would give off an alarm when they detected the odor. This alarm would then retrigger the association among the other flies, leading them to avoid the odor.

We must consider whether there is some other fact that could explain why the flies were more likely to respond to the odor in a group than when they are alone. If there were, that alternative explanation would severely call into question the researchers' hypothesis. The hypothesis therefore requires that any such alternative explanation be false.

- A. It is possible that the flies do in fact give off odors as an alarm signal. Because the nature of the flies' alarm signal is not specified by the hypothesis, this is entirely consistent with the hypothesis and would not undermine it. Therefore, the hypothesis does not require that flies do not give off odors as alarm signals.
- B. **Correct.** Suppose that the flies that did not avoid the odor when tested individually were more likely to avoid the odor when in groups. This may be simply because these flies were following the movements of the flies that were triggered. That is, the signal did not cause the other flies' reactions. Instead, the movements of the triggered flies did. It follows that this possibility must be ruled out in order for the hypothesis to be plausible, and this answer choice does precisely that.
- C. The hypothesis would actually be more plausible if this statement were false. That is, the hypothesis would be more plausible if the flies that did not avoid the odor when tested individually were just as likely, when they were tested in a group, to avoid the odor as the other flies in the group.
- D. The hypothesis is perfectly compatible with the assumption that, prior to their conditioning, the flies were entirely indifferent to the odor.
- E. The principle of association—that the shock is associated with the odor even when the shock itself is not present—actually requires that this statement be false.

The correct answer is B.

CR02741.01

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236. Kayla: Many people are reluctant to shop in our neighborhood because street parking is scarce. The city plans to address this by adding parking meters with time limits that ensure that parking spaces are generally available. But this plan will surely backfire—shoppers dislike paying at parking meters, so most will probably drive to other neighborhoods to shop at malls with free parking.

Which of the following, if true, would be the most logically effective rebuttal a proponent of the city's plan could make to Kayla's objection?

- A. Most shoppers dislike hunting for scarce street parking spaces much more than they dislike paying for metered parking spaces.
- B. The city could post signs with street parking time limits to ensure that parking spaces become available without forcing shoppers to pay at meters.
- C. Currently, most shoppers in the neighborhood drive only occasionally to shop at malls in other neighborhoods.
- D. The neighborhood already contains a parking lot where shoppers must pay to park.
- E. The nearby malls with free parking have no parking time limits to help ensure that parking spaces in their lots become available.

Evaluation of a Plan

Which one of the answer responses provides the best rebuttal to Kayla's objection?

Kayla tells us that a city plans to install parking meters on streets where shoppers in a shopping neighborhood try to park. The meters would have time limits designed to ensure increased availability of parking.

Nevertheless, Kayla believes the plan will have the opposite effect since people dislike paying for parking and are likely to shop instead at a mall where parking is free.

It is important to determine whether shoppers are likely to be deterred from shopping at this mall because they dislike paying to park at time-limited meters.

- A. **Correct.** Shoppers currently try to park on the streets where meters will be installed. These shoppers find searching for a parking space increasingly difficult. It is possible that shoppers actually dislike searching for parking spaces more than they dislike paying for parking spaces. If this is the case, there is no reason to believe that these customers will leave the neighborhood to shop elsewhere.
- B. This answer choice suggests a potential alternative to installing parking meters. This does not provide a rebuttal to Kayla's objection.
- C. While many shoppers do not often drive to other neighborhoods to shop, this could change once the meters were installed.

- D. We are given no information concerning the cost or availability of parking in the parking lot, or its proximity to the shopping portion of the neighborhood.
- E. We are given no precise information about the relative availability of parking spaces at the nearby malls. However, given Kayla's concern, it can reasonably be inferred that there is no significant shortage of free parking spaces at these malls.

The correct answer is A.

CR78551.01

237. A new handheld device purports to determine the severity of concussions by reading the brain's electrical signals and comparing them to a database of 15,000 scans compiled at a brain research lab. The device is intended to help doctors decide whether an athlete who has received a blow to the head during a competition should be sent back into the game.

Which of the following would it be most useful to establish in order to evaluate the effectiveness of the device for its intended purpose?

- A. Whether the database of brain scans will regularly be updated with new scans
- B. Whether by use of this device doctors will be able to make a sound decision about whether to allow an athlete back into the competition before it ends
- C. Whether the device will be endorsed by a large number of medical professionals
- D. Whether the database includes scans of non-injured athletes in the same game as the injured athlete
- E. Whether team doctors have until now been mistaken in their assessments of whether an athlete can safely continue to play

Argument Evaluation

Which one of the answer choices would most help in determining whether the device is effective for its intended purpose?

A handheld scanning device has been developed to read brain signals and determine the severity of a concussion. The intended purpose of this device is to help doctors decide whether an athlete who has received a blow to the head during competition can be allowed back into the game.

- A. If the database is regularly updated, it might increase the effectiveness of the device in the future. This is not relevant to answering whether the device will help doctors make medical decisions during games.
- B. **Correct.** If the answer is yes, then the device is effective for its intended

purpose. If the answer is no, then the device is not effective for its intended purpose: to help doctors make sound decisions about whether athletes who have suffered a head blow can safely resume play during a game.

- C. Endorsement by medical professionals might help marketing of the device, but it is not directly relevant to deciding whether the device is technically suitable for its intended purpose. Simply being a medical professional does not necessarily make one an expert on such issues; that is, medical professionals in general are not involved in deciding whether athletes who have received a head blow in a game can safely resume play in the game.
- D. In order to be technically useful, the database would have to be representative of functioning brains in a variety of activities. This includes both normally functioning brains and abnormally functioning brains. Note that even if this condition is met, it would not be sufficient to decide on whether the device is adequate for its intended purpose.
- E. Previous mistakes by team doctors implies a genuine need for the device. However, this issue is separate from the issue of whether the device itself can help doctors make sound decisions. That is, while such a device may be needed, it is possible that this particular device still does not effectively help doctors make the decision to send athletes back into the game.

The correct answer is B.

CR30461.01

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238. Mashika: We already know from polling data that some segments of the electorate provide significant support to Ms. Puerta. If those segments also provide significant support to Mr. Quintana, then no segment of the electorate that provides significant support to Mr. Quintana provides significant support to Mr. Ramirez.

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Salim: But actually, as the latest polling data conclusively shows, at least one segment of the electorate does provide significant support to both Mr. Quintana and Mr. Ramirez.

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Among the following statements, which is it most reasonable to infer from the assertions by Mashika and Salim?

- A. At least one segment of the electorate provides significant support neither to Mr. Quintana nor to Mr. Ramirez.
- B. At least one segment of the electorate provides significant support to Ms. Puerta but not to Mr. Quintana.
- C. Each segment of the electorate provides significant support to Ms. Puerta.
- D. Each segment of the electorate provides significant support to Mr.

Quintana.

- E. Each segment of the electorate provides significant support to Mr. Ramirez.

Argument Construction

Which one of the five answer choices is most reasonable to infer from the information given by Mashika and Salim?

The information given allows us to make various deductive inferences. First, if each segment that significantly supports Ms. Puerta also significantly supports Mr. Quintana, then it follows, based on Mashika's statement, that no segment of the electorate that significantly supports Mr. Quintana also supports Mr. Ramirez. In other words, to support Ms. Puerta implies not supporting Mr. Ramirez; therefore, if the segments supporting Mr. Quintana include all the segments supporting Ms. Puerta, there can be no segments that support both Mr. Ramirez and Mr. Quintana.

However, Salim tells us that there is such a voter segment: at least one segment significantly supports both Mr. Quintana and Mr. Ramirez. From this, it follows that the hypothesis *if those segments also provide support to Mr. Quintana* must be untrue; in other words, there exists at least one segment of the electorate that significantly supports Ms. Puerta but not Mr. Quintana.

- F. We are told that there is a segment that significantly supports both Mr. Quintana and Mr. Ramirez, but this provides no basis for concluding that there is also a segment that significantly supports neither of the two.
- G. **Correct.** The previous explanation indicates that at least one segment supports Ms. Puerta but not Mr. Quintana.
- H. If support for Ms. Puerta and support for Mr. Ramirez are mutually exclusive, then this must be false given that we know that at least one segment supports Mr. Ramirez.
- I. The information provided indicates that this is false: there is at least one segment that significantly supports Ms. Puerta but not Mr. Quintana.
- J. If support for Ms. Puerta and support for Mr. Ramirez are mutually exclusive, then this must be false given that we know that at least some segments support Ms. Puerta.

The correct answer is B.

CR98461.01

239. The proportion of manufacturing companies in Alameda that use microelectronics in their manufacturing processes increased from 6 percent in 1979 to 66 percent in 1990. Many labor leaders say that the introduction of microelectronics is the principal cause of the great increase in unemployment during that period in Alameda. In actual fact, however, most of the job losses were due to organizational changes. Moreover, according to new figures

released by the labor department, there were many more people employed in Alameda in the manufacturing industry in 1990 than in 1979.

Which of the following, if true, best reconciles the discrepancy between the increase in unemployment and the increase in jobs in the manufacturing industry of Alameda?

- A. Many products that contain microelectronic components are now assembled completely by machine.
- B. Workers involved in the various aspects of the manufacturing processes that use microelectronic technology need extensive training.
- C. It is difficult to evaluate numerically what impact on job security the introduction of microelectronics in the workplace had before 1979.
- D. In 1990 over 90 percent of the jobs in Alameda's manufacturing companies were filled by workers who moved to Alameda because they had skills for which there was no demand in Alameda prior to the introduction of microelectronics there.
- E. Many workers who have retired from the manufacturing industry in Alameda since 1979 have not been replaced by younger workers.

Argument Construction

Which one of the five answer choices given best reconciles the increase in unemployment with the increase in manufacturing employment?

In Alameda, the use of microelectronics in manufacturing increased elevenfold within 11 years. Unemployment in Alameda increased during that period but—contrary to what labor leaders argue—most of the job losses were due to organizational changes. According to the latest official statistics, many more people were employed in manufacturing in Alameda at the end of that period.

One idea to consider is whether manufacturing that involves use of microelectronics in equipment requires employees with a different mix of skills from those traditionally used by employees carrying out manual tasks associated with manufacturing.

- A. This choice provides an example of automated manufacturing, but the given information does not specifically mention manufactured products that contain microelectronic components.
- B. The given information tells us that the increased unemployment was due to organizational changes. But the additional information here is not a sufficient basis for attributing the increase in unemployment to gaps in training.
- C. This simply suggests that there may be some inaccurate data underlying claims about employment trends in manufacturing in Alameda prior to 1979. But the question concerns trends from 1979 to 1990.
- D. **Correct.** This suggests that an influx of new workers to Alameda with the

new skills needed in manufacturing may in fact have displaced other employees. These people may still live in Alameda yet be jobless.

- E. This information is not sufficient to reconcile the increase in unemployment among those previously employed in manufacturing with the increase in total manufacturing jobs. Retirement of employees from certain types of occupations does not increase unemployment in those occupations.

The correct answer is D.

CR00561.01

240. The retinas of premature babies are not fully developed at birth. Because their retinas are so delicate, premature babies sometimes lose their sight. Methods for preventing this syndrome, which is called retinopathy of prematurity, have improved, but the proportion of premature babies who lose their sight because of this syndrome has increased.

Which of the following, if true, best reconciles the apparent discrepancy described above?

- A. When premature babies are born, their retinas are developmentally unprepared to deal with light and air in the environment outside the womb.
- B. The oxygen that must be administered to premature babies at birth can sometimes have a damaging effect on the babies' retinas, but the oxygen is now administered in less damaging concentrations than it used to be.
- C. The effects of retinopathy of prematurity can be reduced by controlling the exposure of premature babies to light and oxygen, but this method cannot completely prevent the syndrome.
- D. The improvement of methods to prevent retinopathy of prematurity has been a gradual process, and there is still a need for further knowledge.
- E. Improved medical technology is saving the lives of premature babies who would previously have died, but these babies have even more delicate retinas than do other premature babies and are more apt to lose their sight.

Argument Construction

What could reconcile the fact that, even though technology has improved the likelihood of saving premature babies' sight, a greater percentage of premature babies are losing their sight than in the past?

Retinopathy of prematurity (ROP) can lead to blindness in babies born prematurely. However, methods for preventing ROP have improved. Given

that, it is puzzling that the proportion of premature babies who go blind due to ROP has increased.

It is important to carefully distinguish among three different groups: the proportion of premature babies who survive; the proportion who have ROP; and the proportion of those who have ROP who become blind as a result.

A change in the proportion of premature babies that have ROP does not necessarily imply a similar change in the proportion of ROP cases that lead to blindness. Thus, even with an increased survival rate of premature babies and improved prevention of ROP, a greater proportion of babies with ROP can go blind.

For example, suppose the severity of ROP at birth among surviving premature babies is greater. Then we could expect that a greater proportion of ROP cases would lead to blindness, absent a measure to prevent this occurring.

- A. This choice does not explain why a greater proportion of ROP cases lead to blindness; it simply suggests some of the conditions in prematurity that can cause retinopathy.
- B. This choice does not resolve the apparent contradiction described; it merely suggests one factor that can damage premature babies' retinas.
- C. This choice does not resolve the apparent contradiction; it merely indicates how some severe consequences of ROP may be moderated.
- D. This choice does not resolve the apparent contradiction; it merely indicates that there is more for medical science to discover about how to prevent or treat ROP.
- E. **Correct.** Among the ROP cases that currently occur, a significant number of them are more severe than in the past. This is an indirect result of the increased survival rate of premature babies, which is also due to technological advances. The greater severity of the ROP among those babies who have it could easily explain the greater proportion of ROP cases that lead to blindness.

The correct answer is E.

CR60561.01

241. Although elementary school children have traditionally received considerable instruction in creating visual art, there has been no such instruction in music. Consequently, in contrast to the situation for visual art, most people as adults do not recognize the artistic intentions of composers. To remedy this situation, a few educators now recommend teaching elementary school students to compose music.

Which of the following, if true, is the strongest basis for arguing that implementation of the recommendation will not lead to the desired result?

- A. Few elementary school students are likely to create superior compositions.
- B. Traditional education facilitates the appreciation of visual art, but not the recognition of the artistic intentions of artists.
- C. More people report that they enjoy music than report that they enjoy visual art.
- D. Some composers have had little formal instruction in composition.
- E. The recommendation is based on the results of a controlled longitudinal study conducted in three schools within a single city.

Evaluation of a Plan

Which answer choice most suggests that implementing the recommendation will not lead to the desired result?

Most elementary school children receive education in creating visual art but no education in composing music. Although most adults recognize the artist's intentions in a work of visual art, the same is not true for most adults' ability to recognize the composer's intentions in a piece of music. Based on these facts, it is advocated that elementary school children be taught to compose music.

It is important to note that we are not told that most adults are able to recognize an artist's intentions specifically because of elementary-level instruction in creating visual art.

- A. The goal of the recommendation is not for elementary school students to create superior compositions in music.
- B. **Correct.** This indicates that traditional education in visual art—including, presumably, such education for elementary school students—does not generally result in ability to recognize the artistic intentions of artists. By analogy, the recommended education in music composition would be unlikely to lead to a recognition of the artistic intentions of composers.
- C. Ability to enjoy music or visual art does not necessarily imply the ability to recognize the artistic intentions of visual artists or composers.
- D. Composers' formal instruction is entirely irrelevant to the recommendation as well as to whether the recommendation achieves its intended purpose.
- E. This suggests that the recommendation is based on scientifically collected data. That does not suggest that the recommendation would fail to achieve its intended purpose.

The correct answer is B.

CR47561.01

242. Pharmaceutical companies spend more than ever on research and development; yet the number of new drugs patented each year has dropped

since 1963. At the same time, profits—at constant 1963 dollars—for the industry as a whole have been steadily increasing.

Which of the following, if true, is the single factor most likely to explain, at least in part, the three trends mentioned above for money spent, drugs patented, and profits made?

- A. Government regulations concerning testing requirements for novel drugs have become steadily more stringent.
- B. Research competition among pharmaceutical companies has steadily intensified as a result of a general narrowing of research targets to drugs for which there is a large market.
- C. Many pharmaceutical companies have entered into collaborative projects with leading universities, while others have hired faculty members away from universities by offering very generous salaries.
- D. The number of cases in which one company's researchers duplicated work done by another company's researchers has steadily grown.
- E. The advertising budgets of the major pharmaceutical companies have grown at a higher rate than their profits have.

Argument Construction

Of the five factors indicated in the answer choices, which one most helps to explain all three of the trends?

The information provided about the pharmaceutical industry indicates three long-term trends since 1963: increased research spending, increased profits, and reduction in the number of patents granted.

Note that in a case where the pharmaceutical industry produced fewer—yet more lucrative—new drugs as a result of its increased research investment, its profits might increase even if fewer new patents were granted.

- A. Although the stringency of government regulations could help explain increased research spending and the granting of fewer patents, it fails to explain why profits would increase in the long term.
- B. **Correct.** This helps explain all three factors. It suggests that each company has had to boost its research spending, but with a narrowing of focus to produce mass-market drugs with enormous potential for profit. This narrowing of focus could explain why fewer drugs are being patented.
- C. Collaboration between pharmaceutical companies and leading universities would not help explain all three trends. It could indicate that the pharmaceutical companies have reduced their investment in their in-house research infrastructure. That is, perhaps these companies find it less expensive to farm out research to universities where a powerful research infrastructure already exists. Even if this could help explain increased research spending, nothing indicates that it would help explain the trends in profits or patents.

- D. Companies doing similar or duplicative research could indicate certain inefficiencies in research spending, which could help explain the research-spending trend and the trend regarding patents. Nevertheless, it still fails to explain the trend of increasing profits.
- E. This does not explain the trend regarding research spending or the trend regarding patents.

The correct answer is B.

CR97561.01

243. Under the agricultural policies of Country R, farmers can sell any grain not sold on the open market to a grain board at guaranteed prices. It seems inevitable that, in order to curb the resultant escalating overproduction, the grain board will in just a few years have to impose quotas on grain production, limiting farmers to a certain flat percentage of the grain acreage they cultivated previously.

Suppose an individual farmer in Country R wishes to minimize the impact on profits of the grain quota whose eventual imposition is being predicted. If the farmer could do any of the following and wants to select the most effective course of action, which should the farmer do now?

- A. Select in advance currently less profitable grain fields and retire them if the quota takes effect.
- B. Seek long-term contracts to sell grain at a fixed price.
- C. Replace obsolete tractors with more efficient new ones.
- D. Put marginal land under cultivation and grow grain on it.
- E. Agree with other farmers on voluntary cutbacks in grain production.

Plan Evaluation

Of the plans described in the five answer choices and equally available to the farmer, which one would be the most effective to pursue?

It is expected that the grain board of Country R, which purchases surplus grain production from farmers at guaranteed prices, will, within a few years, impose quotas on each farmer's grain production in order to limit overproduction.

This plan will limit each farmer to a flat percentage of the grain acreage previously cultivated. The quota will be calculated based on pre-existing grain acreage (presumably averaged over a few years). Therefore, it would make the most sense for the farmer to boost grain acreage for the next few years, even if some of the acreage increase involves using land not optimal for grain production.

- A. Selecting less profitable land now would make sense if no other course of

action did. However, it would still entail some immediate reduction in profits: the land in question is currently less profitable, not unprofitable.

- B. Long-term fixed-price contracts would presumably ensure the farmer's profitability from grain cultivation. But that might not occur if the total cost of agricultural inputs for grain cultivation were to significantly increase without the contracts safeguarding against such a case. Perhaps the most important factor, however, is that such long-term contracts could significantly limit the farmer's ability to profit from future upward trends in market demand for grain.
- C. We are given no information to help us gauge how machinery obsolescence and major investment in new machinery might affect the profits from grain cultivation.
- D. **Correct.** Since any quotas issued in a few years will be calculated as a percentage of the farmer's pre-existing grain-production acreage, the farmer would benefit from increasing his or her grain-production acreage even if some of the new acreage is suboptimal for grain cultivation.
- E. To agree with other farmers on voluntary cutbacks might help forestall or at least delay the introduction of grain quotas by the grain board. However, it could have much the same effect as quotas even if it is sufficient to pre-empt mandatory quotas. Furthermore, it would carry the risk that some farmers would defect from any agreement if they perceived an advantage in doing so.

The correct answer is D.

CR69561.01

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244. Exports of United States wood pulp will rise considerably during this year. The reason for the rise is that the falling value of the dollar will make it cheaper for paper manufacturers in Japan and Western Europe to buy American wood pulp than to get it from any other source.

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Which of the following is an assumption made in drawing the conclusion above?

- A. Factory output of paper products in Japan and Western Europe will increase sharply during this year.
- B. The quality of the wood pulp produced in the United States would be adequate for the purposes of Japanese and Western European paper manufacturers.
- C. Paper manufacturers in Japan and Western Europe would prefer to use wood pulp produced in the United States if cost were not a factor.
- D. Demand for paper products made in Japan and Western Europe will not increase sharply during this year.

- E. Production of wood pulp by United States companies will not increase sharply during this year.

Argument Construction

Which one of the statements gives an assumption on which the argument depends?

The argument claims that exports of U.S. wood pulp will increase this year. Support for this claim is provided by the suggestion that as a result of the falling value of the dollar, paper manufacturers in Japan and Western Europe will be able to purchase wood pulp (the raw material for paper) more cheaply from the United States than from any other source.

This would be true because, if the dollar prices of U.S. wood pulp did not increase, firms in Europe and Japan would pay a smaller dollar-equivalent of their own currencies.

Note that this argument can easily fail: if U.S. wood pulp does not meet the minimum quality requirements of any paper manufacturers in Japan or Western Europe, then those manufacturers will purchase elsewhere. It follows that the reasoning depends on assuming that U.S. wood pulp does in fact meet those quality standards.

- A. Even if factory output of paper products did not increase this year, manufacturers in Japan and Europe might import more U.S. wood pulp this year as raw materials for next year's production.
- B. **Correct.** The predicted increase would likely not occur unless U.S. wood pulp met the manufacturers' minimum-quality standards.
- C. The reasoning does not have to assume that cost is the sole factor. However, it clearly assumes that cost is an important factor. Nevertheless, it does not make any assumption regarding what the relative importance of cost and other factors might be. For this reason, it neither assumes nor implies what might happen in the case that cost is not a significant factor.
- D. The reasoning does not need to assume that no such sharp increase will occur this year. In fact, if such an increase were to occur, it would be even more likely that exports of U.S. wood pulp would increase this year if U.S. wood pulp became internationally more competitive on price this year.
- E. Given the prediction that U.S. wood-pulp exports will increase, there is no reason to assume no sharp increase in U.S. wood pulp production during this year. Such an increase might even be likely if exports were to rise considerably. Therefore, option E is not assumed by the argument.

The correct answer is B.

CR79561.01

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245. A company's personnel director surveyed employees about their satisfaction with the company's system for awarding employee performance

ratings. The survey data indicated that employees who received high ratings were very satisfied with the system. The personnel director concluded from these data that the company's best-performing employees liked the system.

The personnel director's conclusion assumes which of the following?

- A. No other performance rating system is as good as the current system.
- B. The company's best-performing employees received high ratings.
- C. Employees who received low ratings were dissatisfied with the system.
- D. Employees who receive high ratings from a performance-rating system will like that system.
- E. The company's best-performing employees were motivated to perform well by the knowledge that they would receive performance ratings.

Argument Construction

Which one of the following states an assumption on which the personnel director's conclusion depends?

The assumption we seek must provide a needed logical connection between the given information and the conclusion drawn. From the information given, it seems reasonable to think that the employees *very satisfied with the system* also *liked the system*. Furthermore, we are told that the employees who received high ratings were very satisfied with the system.

It follows that if the company's best-performing employees also received high ratings, then these same people—the best-performing employees—were very satisfied with the system. This would make it reasonable to conclude that the best-performing employees liked the system.

- A. The argument does not address the issue of whether the existing performance-rating system is the best available. Rather, it draws a conclusion about the existing performance-rating system based on specific data generated by the system.
- B. **Correct.** Assuming that the company's best-performing employees received high ratings enables the personnel director's conclusion to be logically drawn.
- C. This choice describes an association between ratings and satisfaction, rather than an association between performance and ratings, or between performance and satisfaction. The information given in the argument is compatible with the claim that all employees were at least somewhat satisfied with the system.
- D. This choice assumes that employees who are rated highly by a system will like that system, but that assumption is more general than anything assumed in the argument. This choice addresses employees' attitudes to a performance-rating system based on the ratings they receive under that system. However, it does not address any association between ratings, performance, and attitudes to the system.

- E. Employees' satisfaction with a performance-rating system might well play a role in motivating employees. However, the issue of motivation figures neither explicitly nor implicitly in the reasoning of the personnel director.

The correct answer is B.

CR00661.01

246. There are fundamentally two possible changes in an economy that will each cause inflation unless other compensating changes also occur. These changes are either reductions in the supply of goods and services or increases in demand. In a pre-banking economy the quantity of money available, and hence the level of demand, is equivalent to the quantity of gold available.

If the statements above are true, then it is also true that in a pre-banking economy

- A. any inflation is the result of reductions in the supply of goods and services
- B. if other factors in the economy are unchanged, increasing the quantity of gold available will lead to inflation
- C. if there is a reduction in the quantity of gold available, then, other things being equal, inflation must result
- D. the quantity of goods and services purchasable by a given amount of gold is constant
- E. whatever changes in demand occur, there will be compensating changes in the supply of goods and services

Argument Construction

This question asks us which of the statements is most strongly supported by the information in the argument. Given no other relevant changes, two factors can cause inflation: a reduction in market supply of goods and services or an increase in market demand. The argument also indicates that the total quantity of money available—or, in a pre-banking economy, the quantity of gold available—determines market demand. Therefore, in a pre-banking economy, an increase in the quantity of gold available will increase demand. In a situation where supply remains constant, this increases demand for this fixed supply, thereby raising prices. In other words, increasing the quantity of gold in a pre-banking economy will cause inflation.

- A. While this may be true in certain cases, it is not the argument made in the passage. The passage indicates that certain instances of inflation are caused by increased demand stimulated by an increase in available money (or gold).
- B. **Correct.** According to the information in the passage, if the quantity of available gold in a pre-banking economy increases while supply of goods and services remains unchanged, demand for goods and services will

increase relative to supply. This imbalance raises prices for the supply; that is, it causes inflation.

- C. This answer suggests the opposite of the information in the passage. While the information in the passage indicates that an increase in the quantity of available gold may cause inflation, this choice suggests that a reduction in the available amount of gold will cause inflation.
- D. This suggestion is contrary to the information in the passage: the passage suggests that in a pre-banking economy, the total available amount of gold determines the amount that a good or service will cost. This answer choice suggests that the total available amount of gold is irrelevant to the cost of given goods or services.
- E. The passage nowhere indicates that economies will compensate for changes in demand by changing available supply. This suggestion may or may not be true in real-world terms, but there is no information in the passage to support it.

The correct answer is B.

CR20661.01

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247. Clearbell Telephone provides slow-dialing (SD) service to customers for a low fee, and fast-dialing (FD) service to other customers who pay a somewhat higher fee. FD technology, however, is so efficient that it costs Clearbell substantially less per average call to provide than does SD. Nonetheless, accountants have calculated that Clearbell's profits would drop if it provided FD to all its customers at the current low-fee rate.

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Assume that installation costs for FD are insignificant if the customer already has SD service. Which of the following, if true about Clearbell, best explains the results of the accountants' calculation?

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A. The extra revenue collected from customers who pay the high fee is higher than the extra cost of providing SD to customers who pay the low fee.
- B. The low fee was increased by 6 percent last year, whereas the higher fee was not increased last year.
- C. Although 96 percent of customers regard FD service as reliable and more convenient than SD, fewer than 10 percent of them choose to pay the higher fee for FD service.
- D. The company's competitors generally provide business customers with FD service at low-fee rates.
- E. Profits rose slightly each month for the first three months after FD was first offered to customers, then fell slightly each month for the succeeding three months.

Argument Construction

The argument suggests that fast-dialing (FD) service costs Clearbell Telephone less to deliver per call than does slow-dialing (SD) service, which Clearbell delivers at a lower fee. There are no significant extra costs such as installation to switch to FD if a customer is already a user of SD. Nevertheless, accountants expect Clearbell's profits to decrease if the company were to provide the high-priced FD service at the lower SD rate. *Our goal here will be to find a reason for this apparent contradiction.*

- A. **Correct.** This answer provides a plausible reason for the contradiction. Ultimately, we do not know the amount of extra fee that FD customers pay relative to SD customers. If the higher FD fees make up a substantial portion of the company's revenues, then it is very possible that the proposed change would reduce revenues significantly enough to lower profits. Remember, the SD service actually costs more for Clearbell Telephone. Therefore, the balance to find is whether the current higher FD fees generate more revenue than the money saved by eliminating SD service and instead providing FD services at the low fee.
- B. This statement provides information about how Clearbell's current prices were set. However, it provides no information as to how the proposed changes might affect profits.
- C. This statement does not explain the results of the accountants' calculations. First, customers' preference is irrelevant to the accountants' results. Second, if we were to assume that 10 percent is a small figure, it is still possible that FD fees are great enough to offset the extra costs Clearbell incurs by providing SD service. Third, since the cost to Clearbell is less per call using FD service, Clearbell's profits may in fact increase if all customers were to be given FD service.
- D. This statement is outside the scope of the argument. First, practices of Clearbell's competitors have no bearing on the accountants' calculations. Second, we have no way to determine what the change in Clearbell's profits and its competitive position might be if Clearbell were to provide FD service at the low-fee rate to its business customers. Third, given the facts provided in the argument, it is entirely possible that Clearbell already gives preferential rates for FD service to its business customers.
- E. This information does not help explain the results of the accountants' calculations. Simply because the changes in profit and the introduction of FD service happened at roughly the same time, we cannot assume that one caused the other. That is, it is possible that these fluctuations in profit are due to normal, perhaps seasonal, fluctuations in profits. Therefore, these fluctuations would not necessarily negatively impact Clearbell's overall level of profitability.

The correct answer is A.

248. Manufacturers sometimes discount the price of a product to retailers for a promotion period when the product is advertised to consumers. Such promotions often result in a dramatic increase in amount of product sold by the manufacturers to retailers. Nevertheless, the manufacturers could often make more profit by not holding the promotions.

Which of the following, if true, most strongly supports the claim above about the manufacturers' profit?

- A. The amount of discount generally offered by manufacturers to retailers is carefully calculated to represent the minimum needed to draw consumers' attention to the product.
- B. For many consumer products the period of advertising discounted prices to consumers is about a week, not sufficiently long for consumers to become used to the sale price.
- C. For products that are not newly introduced, the purpose of such promotions is to keep the products in the minds of consumers and to attract consumers who are currently using competing products.
- D. During such a promotion retailers tend to accumulate in their warehouses inventory bought at discount; they then sell much of it later at their regular price.
- E. If a manufacturer fails to offer such promotions but its competitor offers them, that competitor will tend to attract consumers away from the manufacturer's product.

Argument Evaluation

Which of the answer choices provides the strongest evidence for the claim that the manufacturers could indeed make more profit by not holding promotions?

To promote a product during a period when it is advertised to consumers, manufacturers sometimes sell the product to retailers at a discounted price. This often results in a large boost in manufacturers' sales to retailers. However, we are told that manufacturers could make more profit by not offering the promotions.

The manufacturers' total profits on the product increase during the period of reduced-price sales to retailers; note that the price reduction results in a *dramatic increase* in the volume of sales to retailers.

Nevertheless, it is possible that this temporary increase in sales volume would reduce future sales volume to retailers at non-discounted prices. In such a case, it would be more likely that the manufacturers' overall profits on the product would be reduced.

- A. It is reasonable for manufacturers to calculate the minimum needed to

draw attention to a product if they wished to minimize the costs of the product promotion. However, this information gives little if any support for the claim that manufacturers could make more profit by not discounting prices to retailers.

- B. The argument does not provide any information to suggest that the length of the promotion affects manufacturers' profits. According to the passage, many promotions last a short time, so consumers do not come to routinely expect a lower price on a product and thereby avoid purchasing it at the higher post-promotion price. However, this new information gives little if any support for the claim that manufacturers could make more profit by not discounting prices to retailers.
- C. This choice implies that the manufacturer would risk making less overall profit, not more, if these promotions were not held.
- D. **Correct.** The retailer profits by purchasing large volumes of the product at a manufacturer's discounted price and selling it to consumers at the higher post-promotion price. It follows that the increase in sales at the discount might in fact detract from non-discount sales. As noted above, this gives the strongest support for the claim about the manufacturers' profits.
- E. This suggests that sales promotions are essential for manufacturers to compete in relevant markets. However, it gives little if any support for the claim made about manufacturers' profits.

The correct answer is D.

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249. Advertisement: Today's customers expect high quality. Every advance in the quality of manufactured products raises customer expectations. The company that is satisfied with the current quality of its products will soon find that its customers are not. At MegaCorp, meeting or exceeding customer expectations is our goal.

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Which of the following must be true on the basis of the statements in the advertisement above?

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A. MegaCorp's competitors will succeed in attracting customers only if those competitors adopt MegaCorp's goal as their own.
- B. A company that does not correctly anticipate the expectations of its customers is certain to fail in advancing the quality of its products.
- C. MegaCorp's goal is possible to meet only if continuing advances in product quality are possible.
- D. If a company becomes satisfied with the quality of its products, then the quality of its products is sure to decline.

- E. MegaCorp's customers are currently satisfied with the quality of its products.

Argument Construction

This question requires us to identify a statement that can be inferred on the basis of the statements made in the advertisement.

The advertisement states that every improvement in the quality of manufactured products leads to increased expectations among customers, yet that MegaCorp has a goal of meeting or exceeding its customers' expectations. It follows that MegaCorp will continually be able to meet this goal only if it is possible for it to continue improving the quality of its products.

- A. The information in the advertisement provides support for the idea that customers are more likely to buy products that are of the highest available quality. However, there is nothing in the advertisement to indicate that the only way for any of MegaCorp's competitors to produce the highest quality product would be to adopt MegaCorp's goal.
- B. There is nothing in the advertisement to support this claim. A company could, for instance, improve the quality of a product in ways that are different from what customers expect.
- C. **Correct.** To meet or exceed ever-increasing demands for improved quality requires that continuing advances in product quality are in fact possible.
- D. The advertisement suggests that a company that is satisfied with the quality of its products can, at the very least, maintain the current quality of its products. There is nothing to suggest that the quality of these products will actually decline.
- E. The passage provides no evidence that MegaCorp has been successful at reaching its goal of meeting or exceeding customer expectations.

The correct answer is C.