

- (A) Studies have shown that an increase in a city's police force does not necessarily reduce crime.
- (B) When one major city increased its police force by 19 percent last year, there were 40 percent more arrests and 13 percent more convictions.
- (C) If funding for the new police officers' salaries is approved, support for other city services will have to be reduced during the next fiscal year.
- (D) In most United States cities, not all arrests result in convictions, and not all convictions result in prison terms.
- (E) Middletown's ratio of police officers to citizens has reached a level at which an increase in the number of officers will have a deterrent effect on crime.
121. Northern Air has dozens of flights daily into and out of Belleville Airport, which is highly congested. Northern Air depends for its success on economy and quick turnaround and consequently is planning to replace its large planes with Skybuses, the novel aerodynamic design of which is extremely fuel efficient. The Skybus' fuel efficiency results in both lower fuel costs and reduced time spent refueling.
- Which of the following, if true, could present the most serious disadvantage for Northern Air in replacing its large planes with Skybuses?
- (A) The Skybus would enable Northern Air to schedule direct flights to destinations that currently require stops for refueling.
- (B) Aviation fuel is projected to decline in price over the next several years.
- (C) The fuel efficiency of the Skybus would enable Northern Air to eliminate refueling at some of its destinations, but several mechanics would lose their jobs.
- (D) None of Northern Air's competitors that use Belleville Airport are considering buying Skybuses.
- (E) The aerodynamic design of the Skybus causes turbulence behind it when taking off that forces other planes on the runway to delay their takeoffs.

122. The earliest Mayan pottery found at Colha, in Belize, is about 3,000 years old. Recently, however, 4,500-year-old stone agricultural implements were unearthed at Colha. These implements resemble Mayan stone implements of a much later period, also found at Colha. Moreover, the implements' designs are strikingly different from the designs of stone implements produced by other cultures known to have inhabited the area in prehistoric times. Therefore, there were surely Mayan settlements in Colha 4,500 years ago.

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

- (A) Ceramic ware is not known to have been used by the Mayan people to make agricultural implements.
- (B) Carbon dating of corn pollen in Colha indicates that agriculture began there around 4,500 years ago.
- (C) Archaeological evidence indicates that some of the oldest stone implements found at Colha were used to cut away vegetation after controlled burning of trees to open areas of swampland for cultivation.
- (D) Successor cultures at a given site often adopt the style of agricultural implements used by earlier inhabitants of the same site.
- (E) Many religious and social institutions of the Mayan people who inhabited Colha 3,000 years ago relied on a highly developed system of agricultural symbols.

123. Codex Berinensis, a Florentine copy of an ancient Roman medical treatise, is undated but contains clues to when it was produced. Its first 80 pages are by a single copyist, but the remaining 20 pages are by three different copyists, which indicates some significant disruption. Since a letter in handwriting identified as that of the fourth copyist mentions a plague that killed many people in Florence in 1148, Codex Berinensis was probably produced in that year.

Which of the following, if true, most strongly supports the hypothesis that Codex Berinensis was produced in 1148?

- (A) Other than Codex Berinensis, there are no known samples of the handwriting of the first three copyists.
- (B) According to the account by the fourth copyist, the plague went on for 10 months.
- (C) A scribe would be able to copy a page of text the size and style of Codex Berinensis in a day.
- (D) There was only one outbreak of plague in Florence in the 1100's.
- (E) The number of pages of Codex Berinensis produced by a single scribe becomes smaller with each successive change of copyist.

124. Outsourcing is the practice of obtaining from an independent supplier a product or service that a company has previously provided for itself. Since a company's chief objective is to realize the highest possible year-end profits, any product or service that can be obtained from an independent supplier for less than it would cost the company to provide the product or service on its own should be outsourced.

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

- (A) If a company decides to use independent suppliers for a product, it can generally exploit the vigorous competition arising among several firms that are interested in supplying that product.
- (B) Successful outsourcing requires a company to provide its suppliers with information about its products and plans that can fall into the hands of its competitors and give them a business advantage.
- (C) Certain tasks, such as processing a company's payroll, are commonly outsourced, whereas others, such as handling the company's core business, are not.
- (D) For a company to provide a product or service for itself as efficiently as an independent supplier can provide it, the managers involved need to be as expert in the area of that product or service as the people in charge of that product or service at an independent supplier are.
- (E) When a company decides to use an independent supplier for a product or service, the independent supplier sometimes hires members of the company's staff who formerly made the product or provided the service that the independent supplier now supplies.

8.5 Critical Reasoning Answer Key

- | | | | |
|-------|-------|-------|--------|
| 1. B | 32. C | 63. E | 94. C |
| 2. C | 33. E | 64. D | 95. E |
| 3. B | 34. C | 65. C | 96. D |
| 4. D | 35. C | 66. A | 97. D |
| 5. A | 36. C | 67. E | 98. E |
| 6. C | 37. A | 68. A | 99. C |
| 7. D | 38. B | 69. B | 100. E |
| 8. E | 39. B | 70. A | 101. D |
| 9. B | 40. A | 71. A | 102. C |
| 10. C | 41. E | 72. E | 103. B |
| 11. A | 42. D | 73. E | 104. C |
| 12. D | 43. B | 74. B | 105. E |
| 13. E | 44. E | 75. B | 106. D |
| 14. C | 45. D | 76. A | 107. A |
| 15. A | 46. C | 77. B | 108. C |
| 16. E | 47. D | 78. D | 109. D |
| 17. D | 48. A | 79. D | 110. A |
| 18. B | 49. A | 80. D | 111. E |
| 19. B | 50. C | 81. B | 112. E |
| 20. C | 51. B | 82. A | 113. C |
| 21. B | 52. C | 83. A | 114. D |
| 22. C | 53. B | 84. B | 115. D |
| 23. D | 54. B | 85. C | 116. B |
| 24. E | 55. D | 86. E | 117. C |
| 25. D | 56. B | 87. C | 118. D |
| 26. B | 57. A | 88. E | 119. E |
| 27. D | 58. A | 89. A | 120. E |
| 28. A | 59. D | 90. C | 121. E |
| 29. B | 60. C | 91. A | 122. D |
| 30. A | 61. E | 92. E | 123. D |
| 31. C | 62. D | 93. D | 124. B |

8.6 Critical Reasoning Answer Explanations

The following discussion is intended to familiarize you with the most efficient and effective approaches to critical reasoning questions. The particular questions in this chapter are generally representative of the kinds of critical reasoning questions you will encounter on the GMAT®. Remember that it is the problem solving strategy that is important, not the specific details of a particular question.

1. Some economists view the Kennedy–Johnson tax cut of 1964, which radically reduced corporate and individual taxes, as the impetus for the substantial prosperity enjoyed by the United States in the late 1960's and early 1970's.

Which of the following, if true, would most weaken the claim that the tax cut of 1964 was the impetus for economic prosperity?

- (A) Modernized, more productive factories were built in the late 1960's as a result of the funds made available by the tax cut.
- (B) Improved economic conditions in Western Europe and Japan resulted in substantially increased demand for United States manufactured goods in the late 1960's.
- (C) The tax cut of 1964 contained regulations concerning tax shelters that prompted investors to transfer their savings to more economically productive investments.
- (D) Personal income after taxes rose in the years following 1964.
- (E) In the late 1960's, unemployment was relatively low compared with the early 1960's.

Argument Evaluation

Situation Some economists claim that the Kennedy–Johnson tax cut of 1964 was responsible for the prosperity of the late 1960's and early 1970's.

Reasoning *Which point weakens the conclusion that the 1964 tax cut caused the later prosperity?* When two events occur close together in time, it is possible for one to be mistaken as the cause of the other; this could be the case with the economists' claim. The conclusion of this argument may be weakened by demonstrating another possible cause of the prosperity. If improved economic conditions among the international trading partners of the United States resulted in a significantly increased demand for United States manufactured goods in the late 1960's, the rise in demand would provide an alternative explanation for the prosperity and weaken the argument.

- A The modern, more productive factories made possible by the tax cut offer a reason in support of the conclusion, not against it.
- B **Correct.** This statement properly identifies a factor that weakens the argument by providing an alternative explanation.
- C The economically productive investments made possible by the tax cut provide an example that supports, rather than weakens, the conclusion.
- D The rise in personal income after 1964 suggests that the tax cut of 1964 was responsible for this increase.
- E The lower rate of unemployment in the late 1960's could be attributed to the corporate tax cuts of 1964.

The correct answer is B.

2. In order to increase profits during a prolonged slowdown in sales, the largest manufacturers of automobiles in the United States have instituted record-setting price increases on all their models. The manufacturers believe that this strategy will succeed, even though it is inconsistent with the normal relationship between price and demand.

The manufacturers' plan to increase profits relies on which of the following assumptions?

- (A) Automobile manufacturers will, of necessity, raise prices whenever they introduce a new model.
- (B) The smaller automobile manufacturers will continue to take away a large percentage of business from the largest manufacturers.
- (C) The increased profit made on cars sold will more than compensate for any decline in sales caused by the price increases.
- (D) New safety restraints that will soon become mandatory for all new cars will not be very costly for manufacturers to install.
- (E) Low financing and extended warranties will attract many price-conscious consumers.

Argument Construction

Situation The largest automobile manufacturers plan to increase prices on all models in order to increase profits during a sales slowdown.

Reasoning *What does the manufacturers' plan assume?* The manufacturers' plan reverses expectations: a slowdown in sales more typically results in decreased prices in order to encourage an increased number of sales. What could be the basis of the manufacturers' thinking that they should raise prices instead? The manufacturers have a goal of increased profits. They are not anticipating an increased number of sales from this plan, but rather a greater profit on the sales they do make.

- A The manufacturers' plan concerns existing models rather than new ones; price increases when new models are introduced are a different subject.
- B The manufacturers' plan does not address the percentage of business taken away from them by smaller manufacturers, so this point cannot be assumed.
- C **Correct.** This statement properly identifies the assumption on which the manufacturers' argument is based: the greater profit on the cars that are sold will make up for a lower number of sales.
- D New safety restraints are not a part of the manufacturers' plan, so their inexpensive installation is not assumed.
- E The manufacturers' plan is concerned only with generating a greater profit, not with attracting price-conscious consumers who are not likely to respond favorably to the price increases.

The correct answer is C.

3. "Life expectancy" is the average age at death of the entire live-born population. In the middle of the nineteenth century, life expectancy in North America was 40 years, whereas now it is nearly 80 years. Thus, in those days, people must have been considered old at an age that we now consider the prime of life.

Which of the following, if true, undermines the argument above?

- (A) In the middle of the nineteenth century, the population of North America was significantly smaller than it is today.
- (B) Most of the gains in life expectancy in the last 150 years have come from reductions in the number of infants who die in their first year of life.
- (C) Many of the people who live to an advanced age today do so only because of medical technology that was unknown in the nineteenth century.
- (D) The proportion of people who die in their seventies is significantly smaller today than is the proportion of people who die in their eighties.
- (E) More people in the middle of the nineteenth century engaged regularly in vigorous physical activity than do so today.

Argument Evaluation

Situation Life expectancy for mid-nineteenth-century North Americans was 40 years; now it is almost 80. What we think of as the prime of life must have been considered old in that earlier era.

Reasoning *What point weakens this argument?* The argument relies on the logic of having a great many more 80-year-old people in the population now than was the case 150 years ago. What would challenge this logic? The argument is built upon the *average age at death* and uses a definition of life expectancy that embraces the entire population of those born alive. What if, in the nineteenth century, the number of infants born alive but not surviving their first year was far higher than it is today? Then the *average age at time of death* could be significantly reduced by a very large number of infant deaths. On the basis of such information about infant mortality rates, it would not be fair to assume that what today is considered *the prime of life* was in that earlier time considered *old*.

- A The size of the population is irrelevant to the argument.
- B **Correct.** This statement properly identifies the factor that undermines the argument: it was falsely assumed that age for an entire population was simply extended when actually the average age at time of death was significantly raised when the number of infants dying in their first year was reduced.
- C This point supports rather than weakens the argument.
- D This point supports the argument.
- E The regular exercise of one of the two populations compared does not affect the argument.

The correct answer is B.

4. From June through August 1987, Premiere Airlines had the best on-time service of 10 United States airlines. From January through March 1988, Premiere Airlines had the worst on-time service of the 10 airlines. The on-time performance ranking of the other nine airlines relative to each other remained unchanged.

Which of the following, if true, would most contribute to an explanation of the facts above?

- (A) Although Premiere Airlines only revoked its policy of routinely holding flights for late passengers in the fall of 1987, the other nine airlines never had that policy.
- (B) Premiere Airlines reduced its business by 10 percent when it raised its rates in the fall of 1987 to compensate for rising gasoline costs.
- (C) Premiere Airlines bought five new planes in the fall of 1987 that proved to have fewer mechanical problems than the ones they replaced.
- (D) Premiere Airlines serves New England, which has heavy winter snowfalls, whereas the other airlines do most of their business in warmer regions of the country.
- (E) Although all 10 airlines strive to keep their flights on schedule, overcrowded airports increased flight delays for all 10 airlines in January 1988 as compared with June 1987.

Argument Construction

Situation Among a group of 10 airlines, one airline experienced the best on-time service in the summer months of one year and the worst on-time service in the winter months of the next year. The ranking of the other nine airlines remained the same during this entire time.

Reasoning *What point explains the change in on-time performance for one airline but not the others?* The two time periods are identified as June–August and January–March. What distinguishes these two periods? It is clear that two seasons are represented and, depending on the routes the airlines cover, two widely varying weather patterns. If Premiere Airlines is the only one of the 10 airlines that flies to parts of the country where heavy winter snowfalls frequently delay flights, then the seasonal change in the weather explains the change in its on-time performance while that of the other airlines remains the same.

- A If the airline no longer delayed flights to accommodate its late passengers, the on-time performance would improve rather than decline, and this would contradict the explanation.
- B The airline's loss of business is unrelated to its on-time performance.
- C Planes with fewer mechanical problems should have helped on-time performance, not hurt it.
- D **Correct.** This statement properly identifies the factor that supports the explanation for the airline's declining on-time performance: the regional weather-related delays specific to the routes it serves.
- E The rankings are relative, so factors explaining delays for all 10 airlines do not explain why one airline went from best to worst while the other nine stayed the same.

The correct answer is D.

5. Homeowners aged 40 to 50 are more likely to purchase ice cream and are more likely to purchase it in larger amounts than are members of any other demographic group. The popular belief that teenagers eat more ice cream than adults must, therefore, be false.

The argument is flawed primarily because the author ____.

- (A) fails to distinguish between purchasing and consuming
- (B) does not supply information about homeowners in age groups other than 40 to 50
- (C) depends on popular belief rather than on documented research findings
- (D) does not specify the precise amount of ice cream purchased by any demographic group
- (E) discusses ice cream rather than more nutritious and healthful foods

Argument Evaluation

Situation Adults must eat more ice cream than teenagers because adults buy more ice cream than teenagers do.

Reasoning *What is the primary flaw in this argument?* This straightforward argument is based on the faulty assumption that the buyers of the ice cream are also the eaters of the ice cream. The demographic group cited in the argument may indeed purchase more ice cream; it cannot be assumed that the members of this group also consume more of it.

- A **Correct.** This statement properly recognizes the flaw in the argument.
- B The conclusion cannot be reached on the basis of the information in the first sentence; supplying the purchasing habits of other age groups would not change this situation.
- C The first sentence appears to be based on documented research findings.
- D The conclusion is about who eats more ice cream, not who buys more; precise amounts are not necessary when the argument is based on a simple comparison of more than or less than.
- E The subject is ice cream, not nutrition, so this point is irrelevant.

The correct answer is A.

6. Not all life depends on energy from sunlight. Microbial life has been found in bedrock more than five kilometers below the surface of the Earth, and bacteria have been found on the deep ocean floor feeding on hydrogen and other gases rising from the interior of the Earth through vents in the ocean floor.

The statements above, if true, best support which of the following as a conclusion?

- (A) The location in the bedrock where microbial life was found was not near a system of volcanic vents through which hydrogen and other gases rose from the interior of the Earth.
- (B) Bacteria are able to exist at the molten center of the Earth.
- (C) A thorough survey of a planet's surface is insufficient to establish beyond a doubt that the planet contains no life.
- (D) Life probably exists on Sun-orbiting comets, which are cold agglomerations of space dust and frozen gases.
- (E) Finding bacterial remains in coal and oil would establish that the bacteria had been feeding on substances that had not been produced from the energy of sunlight.

Argument Construction

Situation Microbes found five kilometers below the surface of the Earth and bacteria found on the deep ocean floor are both evidence that not all life depends on sunlight.

Reasoning *What conclusion may be drawn from this statement?* Since the passage includes information about both microbes below Earth's surface and bacteria on the ocean floor, the conclusion must embrace both situations. The conclusion will not be a specific statement about either one or the other, but rather a general statement about both. What is true equally of the microbes and bacteria discussed here? They are both life forms that exist far below the surface of the Earth.

- A The conclusion must include both microbes and bacteria, not simply microbes.
- B The conclusion must include both microbes and bacteria, not simply bacteria.
- C **Correct.** This statement properly uses the existence of the microbes far below the land's surface and of the bacteria far below the ocean's surface to draw a general conclusion about the potential existence of life below the surface of a planet.
- D The passage provides no evidence about comets to lead to this conclusion.
- E The conclusion must include both microbes and bacteria, not simply bacteria.

The correct answer is C.

7. A company is considering changing its policy concerning daily working hours. Currently, this company requires all employees to arrive at work at 8 a.m. The proposed policy would permit each employee to decide when to arrive—from as early as 6 a.m. to as late as 11 a.m.

The adoption of this policy would be most likely to decrease employees' productivity if the employees' job functions required them to _____.

- (A) work without interruption from other employees
- (B) consult at least once a day with employees from other companies
- (C) submit their work for a supervisor's eventual approval
- (D) interact frequently with each other throughout the entire workday
- (E) undertake projects that take several days to complete

Evaluation of a Plan

Situation A company considers changing all employees' starting time from 8 a.m. to individually flexible arrival hours, from 6 to 11 a.m.

Reasoning *When could this plan cause employees' productivity to decline?* Consider the job functions defined in the answer choices and determine which entails requirements that would most likely be in conflict with the proposed plan. If employees frequently need to collaborate with each other throughout the workday, then a plan that allows a five-hour range of start times could well decrease productivity. In this case it would be far more difficult for employees to coordinate their schedules so that they could work together as necessary.

- A Working without interruption would be likely to mean improved productivity.
- B The flexible hours would still leave plenty of time for daily consultations during the regular business hours of the workday.
- C *Eventual approval* indicates that the flexibility exists to permit employees' submissions at any time.
- D **Correct.** This statement properly identifies a situation in which the adoption of the policy would be likely to decrease employees' productivity.
- E Such projects would be accomplished just as easily on the proposed flexible schedule.

The correct answer is D.

8. The amount of time it takes for most of a worker's occupational knowledge and skills to become obsolete has been declining because of the introduction of advanced manufacturing technology (AMT). Given the rate at which AMT is currently being introduced in manufacturing, the average worker's old skills become obsolete and new skills are required within as little as five years.

Which of the following plans, if feasible, would allow a company to prepare most effectively for the rapid obsolescence of skills described above?

- (A) The company will develop a program to offer selected employees the opportunity to receive training six years after they were originally hired.
- (B) The company will increase its investment in AMT every year for a period of at least five years.
- (C) The company will periodically survey its employees to determine how the introduction of AMT has affected them.
- (D) Before the introduction of AMT, the company will institute an educational program to inform its employees of the probable consequences of the introduction of AMT.
- (E) The company will ensure that it can offer its employees any training necessary for meeting their job requirements.

Evaluation of a Plan

Situation The introduction of AMT is making workers' occupational skills obsolete within as little as five years.

Reasoning *Which plan will be most effective in the company's preparation for this expected obsolescence?* Consider the ramifications of each of the possible plans, and evaluate that plan's relative effectiveness in managing the negative impacts of having workers' skills go out of date so rapidly. It should be clear that the introduction of AMT must go hand-in-hand with an internal training program that will ensure a workforce that is adequately prepared to meet job requirements.

- A Under this plan, training is available only to *selected* employees and only after their skills have already become obsolete and thus problematic.
- B This plan only accelerates the problem and does not address the employees' skills.
- C Periodic surveys will not prevent employees' skills from becoming obsolete.
- D Having a knowledge of the consequences does not prevent those consequences; employees' skills will still become obsolete.
- E **Correct.** This statement properly identifies a plan that would effectively address the company's AMT-driven needs for employees trained in the most current occupational knowledge and skills.

The correct answer is E.

9. Mayor: In each of the past five years, the city has cut school funding and each time school officials complained that the cuts would force them to reduce expenditures for essential services. But each time, only expenditures for nonessential services were actually reduced. So school officials can implement further cuts without reducing any expenditures for essential services.

Which of the following, if true, most strongly supports the mayor's conclusion?

- (A) The city's schools have always provided essential services as efficiently as they have provided nonessential services.
- (B) Sufficient funds are currently available to allow the city's schools to provide some nonessential services.
- (C) Price estimates quoted to the city's schools for the provision of nonessential services have not increased substantially since the most recent school-funding cut.
- (D) Few influential city administrators support the funding of costly nonessential services in the city's schools.
- (E) The city's school officials rarely exaggerate the potential impact of threatened funding cuts.

Argument Evaluation

Situation A mayor contends that schools can absorb more funding cuts without reducing essential services because school officials had previously said that funding cuts would result in reduced expenditures for essential services, but then only expenditures for nonessential services had to be cut.

Reasoning *Which point supports the mayor's conclusion?* The mayor's conclusion seems to be based solely on the belief that history will repeat itself. What fact would substantiate the mayor's position? If funding is currently available for some nonessential services, then further cuts can be made in this kind of expenditure, while leaving expenditures for essential services untouched. The availability of such funds would strengthen the mayor's argument.

- A The efficiency of providing services, whether essential or not, is not the issue.
- B **Correct.** This statement properly identifies a point that supports the mayor's conclusion.
- C These price estimates are irrelevant since the argument is about expenditures for essential services.
- D The argument is about possible cuts in essential services, not in nonessential services.
- E This point weakens, rather than strengthens, the mayor's conclusion.

The correct answer is B.

10. Advertisement: For sinus pain, three out of four hospitals give their patients Novex. So when you want the most effective painkiller for sinus pain, Novex is the one to choose.
- Which of the following, if true, most seriously undermines the advertisement's argument?
- Some competing brands of painkillers are intended to reduce other kinds of pain in addition to sinus pain.
 - Many hospitals that do not usually use Novex will do so for those patients who cannot tolerate the drug the hospitals usually use.
 - Many drug manufacturers increase sales of their products to hospitals by selling these products to the hospitals at the lowest price the manufacturers can afford.
 - Unlike some competing brands of painkillers, Novex is available from pharmacies without a doctor's prescription.
 - In clinical trials Novex has been found to be more effective than competing brands of painkillers that have been on the market longer than Novex.

Argument Evaluation

Situation An advertisement claims that Novex is the most effective painkiller for sinus pain since three out of four hospitals use it for patients.

Reasoning *What point undermines the advertisement's claim?* The argument for Novex's effectiveness as a painkiller is based upon the hospitals' usage. Consider what might be driving the hospitals' choice of medications to administer. Three out of four hospitals might be giving their patients Novex not because it is the most effective painkiller for sinus pain, but because it is inexpensive. If this is the case, the argument is seriously undermined.

- Other kinds of pain are irrelevant to the argument since the claim is only about sinus pain.
- This point does not undermine the advertisement's claim.
- Correct.** This statement properly identifies a factor that could well undermine the advertisement's claim: the hospitals may be using this medication because it is the most cost effective for them.
- Novex's nonprescription formula is not relevant to the claim.
- This point strengthens, rather than weakens, the claim.

The correct answer is C.

11. A report that many apples contain a cancer-causing preservative called Alar apparently had little effect on consumers. Few consumers planned to change their apple-buying habits as a result of the report. Nonetheless, sales of apples in grocery stores fell sharply in March, a month after the report was issued.

Which of the following, if true, best explains the reason for the apparent discrepancy described above?

- (A) In March, many grocers removed apples from their shelves in order to demonstrate concern about their customers' health.
- (B) Because of a growing number of food-safety warnings, consumers in March were indifferent to such warnings.
- (C) The report was delivered on television and also appeared in newspapers.
- (D) The report did not mention that any other fruit contains Alar, although the preservative is used on other fruit.
- (E) Public health officials did not believe that apples posed a health threat because only minute traces of Alar were present in affected apples.

Argument Construction

Situation Despite a report on the cancer-causing agent Alar, which is used to preserve many apples, few consumers planned to stop buying apples. However, sales of apples fell sharply a month after the report.

Reasoning *How can this discrepancy be explained?* If consumers did not intentionally change their buying habits, then some other change must be responsible for the decline in apple sales. Why could purchases have decreased? If apples were not available to buy, then sales would obviously fall. The decision of many grocers to remove apples from their shelves in the month following the report would explain the discrepancy.

- A **Correct.** This statement properly identifies an explanation for the apparent discrepancy.
- B This point suggests that there would be no appreciable change in apple sales.
- C How consumers may have heard about the report is irrelevant to the discrepancy between their response and the decline in sales.
- D Whether or not they contain Alar, other fruits are not a part of the discussion; thus this point cannot explain the discrepancy.
- E The health officials' opinion, if indeed known to consumers, would likely lead to stable apple sales.

The correct answer is A.

12. Cable-television spokesperson: Subscriptions to cable television are a bargain in comparison to “free” television. Remember that “free” television is not really free. It is consumers, in the end, who pay for the costly advertising that supports “free” television.

Which of the following, if true, is most damaging to the position of the cable-television spokesperson?

- (A) Consumers who do not own television sets are less likely to be influenced in their purchasing decisions by television advertising than are consumers who own television sets.
- (B) Subscriptions to cable television include access to some public-television channels, which do not accept advertising.
- (C) For locations with poor television reception, cable television provides picture quality superior to that provided by free television.
- (D) There is as much advertising on many cable-television channels as there is on “free” television channels.
- (E) Cable-television subscribers can choose which channels they wish to receive, and the fees.

Argument Evaluation

Situation A cable-television spokesperson argues that cable fees are a bargain since so-called “free” television is actually paid for by consumers who underwrite the cost of advertising.

Reasoning *Which point weakens the spokesperson’s argument?* The spokesperson’s argument compares the bargain price of a subscription to cable television with the “price” of the costly advertising on “free” television. Consider what situation would undermine this comparison. What if cable television airs just as much advertising as “free” television in addition to the subscription fee? Then the cable subscriber is paying twice, and the spokesperson’s argument that cable television is a bargain in comparison to “free” television is weakened.

- A People who do not watch television are irrelevant to the argument.
- B The fact that cable television subscriptions include access to advertising-free public-television channels does not weaken the argument that “free” television is not free.
- C The picture quality of cable and free television are not at issue in this argument.
- D **Correct.** This statement properly identifies a factor that weakens the spokesperson’s argument: since the advertising on “free” television acts as a kind of fee, the presence of similar advertising on many cable channels is necessarily the same kind of hidden cost.
- E Consumer choice is not an issue in this argument.

The correct answer is D.

13. Wood smoke contains dangerous toxins that cause changes in human cells. Because wood smoke presents such a high health risk, legislation is needed to regulate the use of open-air fires and wood-burning stoves.

Which of the following, if true, provides the most support for the argument above?

- (A) The amount of dangerous toxins contained in wood smoke is much less than the amount contained in an equal volume of automobile exhaust.
- (B) Within the jurisdiction covered by the proposed legislation, most heating and cooking is done with oil or natural gas.
- (C) Smoke produced by coal-burning stoves is significantly more toxic than smoke from wood-burning stoves.
- (D) No significant beneficial effect on air quality would result if open-air fires were banned within the jurisdiction covered by the proposed legislation.
- (E) In valleys where wood is used as the primary heating fuel, the concentration of smoke results in poor air quality.

Argument Construction

Situation Wood smoke is hazardous, and restrictive legislation is needed.

Reasoning Which point supports the need for legislation? The argument for legislation is based on the position that wood smoke is hazardous to people's health. Any evidence of physical harm resulting from wood smoke supports the argument that legislation is needed. Undoubtedly, poor air quality caused by a high concentration of wood smoke presents just such a health risk.

- A This argument is about wood smoke, so comparisons with car exhaust are irrelevant.
- B This point suggests that wood smoke presents few dangers to people in the area, and so decreases the need for legislation.
- C This argument is about wood smoke, so comparisons with coal-burning stoves are irrelevant.
- D The lack of benefit from banning open-air fires is a point against the legislation.
- E **Correct.** This statement properly identifies a factor that supports the argument in favor of legislation.

The correct answer is E.

14. Within 20 years it will probably be possible to identify the genetic susceptibility an individual may have toward any particular disease. Eventually, effective strategies will be discovered to counteract each such susceptibility. Once these effective strategies are found, therefore, the people who follow them will never get sick.

The argument above is based on which of the following assumptions?

- (A) For every disease there is only one strategy that can prevent its occurrence.
- (B) In the future, genetics will be the only medical specialty of any importance.
- (C) All human sicknesses are in part the result of individuals' genetic susceptibilities.
- (D) All humans are genetically susceptible to some diseases.
- (E) People will follow medical advice when they are convinced that it is effective.

Argument Construction

Situation Once genetic susceptibilities to diseases are identified and strategies are developed to counteract these susceptibilities, people who follow the strategies will never get sick.

Reasoning *What assumption is this argument based on?* The argument states that people who follow the appropriate strategies for counteracting their genetic susceptibilities to disease will never get sick. How can it be that they would *never* get sick? The argument requires an assumption about the cause of all sickness. Every known disease of humans must correspond to some genetic susceptibilities. The argument thus follows that individuals get sick from those diseases to which they have genetic susceptibilities and that people will not suffer from any illnesses unless they have such susceptibilities.

- A The argument refers to *effective strategies*; the argument does not assume that there is only one strategy for each disease.
- B The number of medical specialties needed to discover and apply effective strategies is irrelevant to the argument.
- C **Correct.** This statement properly identifies the argument's necessary assumption.
- D While this statement may be true, it is not necessary to the argument.
- E The argument does not concern the circumstances in which people will follow medical advice.

The correct answer is C.

15. A researcher studying drug addicts found that, on average, they tend to manipulate other people a great deal more than nonaddicts do. The researcher concluded that people who frequently manipulate other people are likely to become addicts.

Which of the following, if true, most seriously weakens the researcher's conclusion?

- (A) After becoming addicted to drugs, drug addicts learn to manipulate other people as a way of obtaining drugs.
- (B) When they are imprisoned, drug addicts often use their ability to manipulate other people to obtain better living conditions.
- (C) Some nonaddicts manipulate other people more than some addicts do.
- (D) People who are likely to become addicts exhibit unusual behavior patterns other than frequent manipulation of other people.
- (E) The addicts that the researcher studied were often unsuccessful in obtaining what they wanted when they manipulated other people.

Argument Evaluation

Situation A researcher finds that drug addicts manipulate other people more than nonaddicts do and concludes that manipulative people are likely to become drug addicts.

Reasoning *What weakens the conclusion?* Consider how the researcher reached the conclusion. The researcher assumed that being manipulative precedes becoming a drug addict. What justification is given for this progression? What if the sequence is reversed and becoming a drug addict instead leads people to become manipulative? If it could be that being an addict makes people manipulative, the researcher's conclusion would be weakened.

- A **Correct.** This statement properly identifies information that weakens the researcher's conclusion.
- B Drug addicts' behavior in prison is not relevant to the argument.
- C The actions of nonaddicts are not relevant to an argument about addicts.
- D The argument concerns manipulative behavior, not other or unusual behavior patterns.
- E The success or failure of the subjects' manipulative behavior is not relevant to the conclusion.

The correct answer is A.

16. In Swartkans territory, archaeologists discovered charred bone fragments dating back one million years. Analysis of the fragments, which came from a variety of animals, showed that they had been heated to temperatures no higher than those produced in experimental campfires made from branches of white stinkwood, the most common tree around Swartkans.

Which of the following, if true, would, together with the information above, provide the best basis for the claim that the charred bone fragments are evidence of the use of fire by early hominids?

- (A) The white stinkwood tree is used for building material by the present-day inhabitants of Swartkans.
- (B) Forest fires can heat wood to a range of temperatures that occur in campfires.
- (C) The bone fragments were fitted together by the archaeologists to form the complete skeletons of several animals.
- (D) Apart from the Swartkans discovery, there is reliable evidence that early hominids used fire as many as 500,000 years ago.
- (E) The bone fragments were found in several distinct layers of limestone that contained primitive cutting tools known to have been used by early hominids.

Argument Evaluation

Situation Archaeologists analyzed charred bone fragments dating back to a million years ago and found that the fragments had been heated to the temperature of a campfire fueled by stinkwood. It is claimed that the fragments show that early hominids used fire.

Reasoning *Which additional piece of information would strengthen the argument?* The information that strengthens this argument will be about the subjects of the argument, not about tangential issues. In this case, the argument is about early hominids' use of fire. Any physical evidence that links the early hominids to the charred bone fragments strengthens the argument. If these bone fragments were found in conjunction with some other evidence of the presence of early hominids, then the evidence from the Swartkans location could be used to support the claim that early hominids used fire.

- A The present-day use of stinkwood is irrelevant to the argument that early hominids used fire.
- B If forest fires could have been responsible for the charring, the argument is weakened, not strengthened.
- C The fact that the charred bone fragments form some complete animal skeletons offers no support to the argument that early hominids used fire.
- D The fragments date back one million years, so evidence from 500,000 years ago is irrelevant.
- E **Correct.** This statement properly identifies evidence that links early hominids to these bone fragments and so strengthens the argument.

The correct answer is E.

17. A conservation group in the United States is trying to change the long-standing image of bats as frightening creatures. The group contends that bats are feared and persecuted solely because they are shy animals that are active only at night.

Which of the following, if true, would cast the most serious doubt on the accuracy of the group's contention?

- (A) Bats are steadily losing natural roosting places such as caves and hollow trees and are thus turning to more developed areas for roosting.
- (B) Bats are the chief consumers of nocturnal insects and thus can help make their hunting territory more pleasant for humans.
- (C) Bats are regarded as frightening creatures not only in the United States but also in Europe, Africa, and South America.
- (D) Raccoons and owls are shy and active only at night, yet they are not generally feared and persecuted.
- (E) People know more about the behavior of other greatly feared animal species, such as lions, alligators, and snakes, than they do about the behavior of bats.

Argument Evaluation

Situation A conservation group claims that bats are feared and persecuted only because they are shy, nocturnal animals.

Reasoning *What casts doubt on this claim?* If people fear bats only because these animals are shy and active at night, then other species that share those same attributes should be equally feared. Yet raccoons and owls, similarly shy and nocturnal, do not suffer from the same reputation.

- A The location of the bats' nests does not explain the cause of the fear.
- B The insect-eating habits of bats might be used in their defense, but this activity does not explain the fear of them.
- C Including other parts of the world increases the arena of fear; it does not cast doubt on the cause of it.
- D **Correct.** This statement properly identifies the fact that people do not fear shy, nocturnal raccoons and owls and shows that these attributes are not the reason people fear bats.
- E The knowledge of other species is irrelevant to the discussion of bats.

The correct answer is D.

18. Opponents of laws that require automobile drivers and passengers to wear seat belts argue that in a free society people have the right to take risks as long as the people do not harm others as a result of taking the risks. As a result, they conclude that it should be each person's decision whether or not to wear a seat belt.

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

- (A) Many new cars are built with seat belts that automatically fasten when someone sits in the front seat.
- (B) Automobile insurance rates for all automobile owners are higher because of the need to pay for the increased injuries or deaths of people not wearing seat belts.
- (C) Passengers in airplanes are required to wear seat belts during takeoffs and landings.
- (D) The rate of automobile fatalities in states that do not have mandatory seat-belt laws is greater than the rate of fatalities in states that do have such laws.
- (E) In automobile accidents, a greater number of passengers who do not wear seat belts are injured than are passengers who do wear seat belts.

Argument Evaluation

Situation Opponents of automobile seat-belt laws contend that all citizens of a free society should be able to take risks as long as their behavior does not harm others.

Reasoning *How would refusing to wear a seat belt harm anyone other than the person who does not use it?* Consider what detriments to others might be associated with drivers and passengers who take the risk of not wearing seat belts. If injuries and deaths increase when people do not wear seat belts, the automobile insurance rates for all car owners rise in order to pay for the costs incurred by those who do not wear seat belts.

- A The existence of automatic seat belts in some seats of some cars is coincidental; it is not relevant to the opponents' claim of their right to take risks.
- B **Correct.** This statement properly identifies a point that weakens the conclusion. All car owners must pay higher insurance premiums because some people refuse to wear seat belts. Thus, this refusal does in fact harm others.
- C The argument is about cars, not airplanes.
- D The higher number of fatalities does not weaken the conclusion.
- E The higher number of injuries does not weaken the conclusion.

The correct answer is B.

19. Which of the following best completes the passage below?

People buy prestige when they buy a premium product. They want to be associated with something special. Mass-marketing techniques and price-reduction strategies should not be used because _____.

- (A) affluent purchasers currently represent a shrinking portion of the population of all purchasers
- (B) continued sales depend directly on the maintenance of an aura of exclusivity
- (C) purchasers of premium products are concerned with the quality as well as with the price of the products
- (D) expansion of the market niche to include a broader spectrum of consumers will increase profits
- (E) manufacturing a premium brand is not necessarily more costly than manufacturing a standard brand of the same product

Argument Construction

Situation Consumers seek prestige when they buy premium products, that is to say, expensive, top-quality products. Mass-marketing techniques and price-reduction strategies are not appropriate tools to sell these products to consumers seeking to be associated with something special.

Reasoning *Why are these tools NOT appropriate for selling these products to this group of consumers?* Consider that these consumers want to feel that the premium product they are buying is out of the ordinary. Any strategy that makes the premium product seem more common or easier to own reduces that product's appeal to this group. By definition, mass-marketing techniques appeal to a huge number of people, rather than to a small, select group. Further, reducing prices lowers any associated prestige as well because the product becomes more broadly obtainable. These two techniques would not be appropriate because these consumers would lose the feeling that the product is special.

- A Mass-marketing strategies are not an appropriate match for a small, and currently dwindling, group of buyers; price reductions are not an appropriate match for consumers attracted to products by their high prices.
- B **Correct.** This statement properly identifies the point that continued sales depend on making the product seem special and difficult to obtain; mass-marketing techniques and price-reduction strategies would make the product seem quite ordinary and thus hurt sales.
- C It has not been established that these strategies would lower the products' quality, and so this offers no reason for avoiding the strategies.
- D This statement provides a reason why broader marketing should be employed, rather than supporting an argument that it should be avoided.
- E Manufacturing costs are not discussed and so are irrelevant.

The correct answer is B.

20. The number of people diagnosed as having a certain intestinal disease has dropped significantly in a rural county this year, as compared to last year. Health officials attribute this decrease entirely to improved sanitary conditions at water-treatment plants, which made for cleaner water this year and thus reduced the incidence of the disease.

Which of the following, if true, would most seriously weaken the health officials' explanation for the lower incidence of the disease?

- (A) Many new water-treatment plants have been built in the last five years in the rural county.
- (B) Bottled spring water has not been consumed in significantly different quantities by people diagnosed as having the intestinal disease, as compared to people who did not contract the disease.
- (C) Because of a new diagnostic technique, many people who until this year would have been diagnosed as having the intestinal disease are now correctly diagnosed as suffering from intestinal ulcers.
- (D) Because of medical advances this year, far fewer people who contract the intestinal disease will develop severe cases of the disease.
- (E) The water in the rural county was brought up to the sanitary standards of the water in neighboring counties 10 years ago.

Argument Evaluation

Situation Health officials claim that improved sanitary conditions at water-treatment plants have reduced the number of diagnosed cases of a specific intestinal disease.

Reasoning *What weakens the health officials' claim?* Any alternate explanation of the reduction in such diagnoses weakens their claim. It is possible that other, perhaps similar, problems had been mistakenly diagnosed, and the misdiagnoses contributed to the number of cases reported during the previous year. If a new diagnostic technique permits doctors to distinguish between two health conditions not recognized previously as distinct problems, then the reduction of cases may be due to more precise diagnoses rather than to better sanitary conditions. If the people with the other condition are now correctly diagnosed, the number mistakenly diagnosed with the intestinal disease goes down.

- A The number of plants built within the last five years is irrelevant to the question of the impact of improved sanitary conditions during the most recent one-year period.
- B Bottled water is here ruled out as an alternative explanation since almost equal quantities were consumed by those who caught the disease and those who did not.
- C **Correct.** This statement properly identifies a factor that weakens the officials' argument.
- D The number of cases of the disease is the issue, not the severity of the illness.
- E The neighboring counties may have had inadequate sanitary conditions as well, and, if so, the health officials' claim is not refuted.

The correct answer is C.

21. Rural households have more purchasing power than do urban or suburban households at the same income level, since some of the income urban and suburban households use for food and shelter can be used by rural households for other needs.

Which of the following inferences is best supported by the statement made above?

- (A) The average rural household includes more people than does the average urban or suburban household.
- (B) Rural households have lower food and housing costs than do either urban or suburban households.
- (C) Suburban households generally have more purchasing power than do either rural or urban households.
- (D) The median income of urban and suburban households is generally higher than that of rural households.
- (E) All three types of households spend more of their income on housing than on all other purchases combined.

Argument Construction

Situation Rural households have more purchasing power than urban and suburban households with the same income level. This is because they can put to other uses some of the money that urban and suburban households must spend on food and shelter.

Reasoning *What can be inferred from this information?* The passage attributes the higher purchasing power of rural households to their ability to spend some of the income that those other households must use for food and shelter. Therefore, rural households must have relatively lower food and shelter costs.

- A The passage gives no information about the number of people in the household, and so no inference about those numbers can be made.
- B **Correct.** This statement properly identifies an inference supported by the given information. Since rural households have more money left over after paying for food and shelter, their costs for these necessities must be less.
- C This statement contradicts the first two lines of the passage.
- D The passage discusses the three types of households only *at the same income level*.
- E No information is given about how expenditures are divided, so no inference can be drawn.

The correct answer is B.

22. In Asia, where palm trees are nonnative, the trees' flowers have traditionally been pollinated by hand, which has kept palm fruit productivity unnaturally low. When weevils known to be efficient pollinators of palm flowers were introduced into Asia in 1980, palm fruit productivity increased—by up to 50 percent in some areas—but then decreased sharply in 1984.

Which of the following statements, if true, would best explain the 1984 decrease in productivity?

- (A) Prices for palm fruit fell between 1980 and 1984 following the rise in production and a concurrent fall in demand.
- (B) Imported trees are often more productive than native trees because the imported ones have left behind their pests and diseases in their native lands.
- (C) Rapid increases in productivity tend to deplete trees of nutrients needed for the development of the fruit-producing female flowers.
- (D) The weevil population in Asia remained at approximately the same level between 1980 and 1984.
- (E) Prior to 1980 another species of insect pollinated the Asian palm trees, but not as efficiently as the species of weevil that was introduced in 1980.

Argument Construction

Situation In 1980, the introduction of weevils to pollinate palm trees in Asia resulted in increased palm fruit productivity. This productivity decreased sharply in 1984.

Reasoning *What explains the sudden decrease in 1984?* The palm trees had experienced a sudden burst of productivity beginning in 1980. What if an after-effect of that spurt was the cause? If that burst of productivity had used up the trees' nutrients, then the trees would be unable to produce the flowers that are pollinated in order to produce fruit. This sudden exhaustion of the trees' resources is the best explanation for the sudden decrease in productivity.

- A Falling prices and falling demand do not explain the falling productivity of the trees.
- B The lack of pests and diseases among imported trees does not explain the sharply decreased productivity.
- C **Correct.** This statement properly identifies a reason for sharply decreased productivity.
- D If the weevil population pollinating the trees remained the same, it is reasonable to think that productivity remained the same, so this does not explain the decrease.
- E A change that occurred before 1980 does not explain a change that occurred in 1984.

The correct answer is C.

23. With the emergence of biotechnology companies, it was feared that they would impose silence about proprietary results on their in-house researchers and their academic consultants. This constraint, in turn, would slow the development of biological science and engineering.

Which of the following, if true, would tend to weaken most seriously the prediction of scientific secrecy described above?

- (A) Biotechnological research funded by industry has reached some conclusions that are of major scientific importance.
- (B) When the results of scientific research are kept secret, independent researchers are unable to build on those results.
- (C) Since the research priorities of biotechnology companies are not the same as those of academic institutions, the financial support of research by such companies distorts the research agenda.
- (D) To enhance the companies' standing in the scientific community, the biotechnology companies encourage employees to publish their results, especially results that are important.
- (E) Biotechnology companies devote some of their research resources to problems that are of fundamental scientific importance and that are not expected to produce immediate practical applications.

Argument Evaluation

Situation Biotechnology companies may slow the development of biological science and engineering by imposing restrictions on what their scientists can say and share with others.

Reasoning *What point weakens the prediction?* If the biotechnology companies do not demand silence of their scientists, then the development of biological science and engineering could proceed as freely as it did before the emergence of the companies. By encouraging their employees to publish their results, the companies are promoting, not impeding, the development of biological science and engineering.

- A The importance of the findings does not affect the prediction.
- B The loss to independent researchers does not weaken the prediction.
- C The companies' priorities for research do not affect the prediction.
- D **Correct.** This statement properly identifies a situation that is the reverse of the predicted one.
- E The companies' typical policy of conducting some research without a practical application does not weaken the prediction.

The correct answer is D.

24. Guitar strings often go “dead”—become less responsive and bright in tone—after a few weeks of intense use. A researcher whose son is a classical guitarist hypothesized that dirt and oil, rather than changes in the material properties of the string, were responsible.

Which of the following investigations is most likely to yield significant information that would help evaluate the researcher’s hypothesis?

- (A) Determining whether a metal alloy is used to make the strings used by classical guitarists
- (B) Determining whether classical guitarists make their strings go dead faster than do folk guitarists
- (C) Determining whether identical lengths of string, of the same gauge, go dead at different rates when strung on various brands of guitars
- (D) Determining whether a dead string and a new string produce different qualities of sound
- (E) Determining whether smearing various substances on new guitar strings causes them to go dead

Evaluation of a Plan

Situation Dirt and oil are hypothesized to be the cause of lost tone and brightness in guitar strings, rather than changes in the material itself.

Reasoning Which investigation helps evaluate the hypothesis? The researcher needs to test the hypothesis directly. Smearing substances (such as dirt and oil) onto new strings and seeing whether they go dead is a direct test. If the strings do not lose their tone, the hypothesis is false. If they do go dead, the hypothesis is a likely explanation of the problem, although not necessarily the only explanation.

- A Not enough information is given about the metal alloy to evaluate its effect on the composition of the strings and their loss of tone after intense play.
- B The difference in the style of play is outside the scope of the hypothesis.
- C The difference in the brands of guitars is outside the scope of the hypothesis.
- D The difference between a new string and a dead string has already been established.
- E **Correct.** This statement properly identifies a procedure that is a direct test of the hypothesis.

The correct answer is E.

25. In recent years, many cabinetmakers have been winning acclaim as artists. But since furniture must be useful, cabinetmakers must exercise their craft with an eye to the practical utility of their product. For this reason, cabinetmaking is not art.

Which of the following is an assumption that supports drawing the conclusion above from the reason given for that conclusion?

- (A) Some furniture is made to be placed in museums, where it will not be used by anyone.
- (B) Some cabinetmakers are more concerned than others with the practical utility of the products they produce.
- (C) Cabinetmakers should be more concerned with the practical utility of their products than they currently are.
- (D) An object is not an art object if its maker pays attention to the object's practical utility.
- (E) Artists are not concerned with the monetary value of their products.

Argument Construction

Situation Cabinetmaking cannot be considered an art because furniture is made with an eye to its usefulness.

Reasoning *What assumption is made in the argument?* The argument makes a general statement about all cabinetmakers and all their furniture. The assumption must also be a general statement because it is not logical to reason from a particular statement about *some furniture* or *some cabinetmakers* to a general statement about all cabinetmaking. What excludes pieces of furniture from being considered works of art? The argument states only that their usefulness must be taken into account during their creation. Therefore, the operative assumption must be that an object created with its practical use in mind cannot be a work of art.

- A The destination of the object after its creation is not the issue.
- B The degree of consideration is not relevant; only the fact of any consideration is relevant.
- C The degree of consideration is not relevant; given the conclusion, any consideration of utility means the piece is not a work of art.
- D **Correct.** This statement properly identifies the underlying assumption that an object created with any consideration of usefulness is not a work of art.
- E Artists' interest or disinterest in the monetary value of their works has nothing to do with what objects are considered works of art.

The correct answer is D.

26. Male bowerbirds construct elaborately decorated nests, or bowers. Basing their judgment on the fact that different local populations of bowerbirds of the same species build bowers that exhibit different building and decorative styles, researchers have concluded that the bowerbirds' building styles are a culturally acquired, rather than a genetically transmitted, trait.

Which of the following, if true, would most strengthen the conclusion drawn by the researchers?

- (A) There are more common characteristics than there are differences among the bower-building styles of the local bowerbird population that has been studied most extensively.
- (B) Young male bowerbirds are inept at bower building and apparently spend years watching their elders before becoming accomplished in the local bower style.
- (C) The bowers of one species of bowerbird lack the towers and ornamentation characteristic of the bowers of most other species of bowerbird.
- (D) Bowerbirds are found only in New Guinea and Australia, where local populations of the birds apparently seldom have contact with one another.
- (E) It is well known that the song dialects of some songbirds are learned rather than transmitted genetically.

Argument Evaluation

Situation Male bowerbirds that are of the same species but living in different habitats build nests of widely varying styles. Researchers conclude that this nest-building behavior is culturally acquired rather than genetically transmitted.

Reasoning *What evidence strengthens the researchers' conclusion?* The researchers base their conclusion upon the different styles of nests, reasoning that the nests would all be similar if the bower-building behavior was only transmitted through the genes of the species. What would lend support to this reasoning? If young male bowerbirds have no inherent aptitude for nest building and must learn it over a period of years by watching older male bowerbirds, then the argument that bowerbirds acquire their nest-building preferences culturally rather than genetically is strengthened.

- A The greater number of similarities than differences in style in one population could be attributed to either cultural acquisition or genetic transmission, so the conclusion is not strengthened.
- B **Correct.** This statement properly identifies evidence that supports the researchers' conclusion that nest-building styles are culturally acquired.
- C The cited differences are among populations of the same species; differences among species are outside the scope of the conclusion.
- D Since no information is given about the nest-building styles of these populations (whether or not they are of the same species), the fact that they have little contact neither strengthens nor weakens the conclusion.
- E While this statement does offer an example of learned bird behavior, it does not strengthen the conclusion; the argument is about nest building, not about song dialects.

The correct answer is B.

27. A drug that is highly effective in treating many types of infection can, at present, be obtained only from the bark of the ibora, a tree that is quite rare in the wild. It takes the bark of 5,000 trees to make one kilogram of the drug. It follows, therefore, that continued production of the drug must inevitably lead to the ibora's extinction.

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

- (A) The drug made from ibora bark is dispensed to doctors from a central authority.
- (B) The drug made from ibora bark is expensive to produce.
- (C) The leaves of the ibora are used in a number of medical products.
- (D) The ibora can be propagated from cuttings and grown under cultivation.
- (E) The ibora generally grows in largely inaccessible places.

Argument Evaluation

Situation The extinction of the rare ibora tree is inevitable if production of an effective infection-fighting drug continues.

Reasoning *Which point weakens the argument?* The production of the drug requires such an enormous amount of bark that the continuing existence of the rare tree is in jeopardy. Why is this? The argument assumes that killing the trees in the wild is the only way to obtain the needed bark. Consider from what other sources this tree bark could be harvested. If cuttings from the wild trees could be used to breed and grow the trees as a renewable crop, then the cultivated trees could be used to manufacture the drug, and the majority of the trees in the wild could be left to flourish.

- A The method of drug's distribution does not affect the likely extinction of the tree because the bark has already been stripped from the tree for the drug's production.
- B The price of the drug does not affect the outcome for the tree because the production of the drug has already taken place.
- C Uses for other parts of the tree make its extinction more likely and strengthens the argument.
- D **Correct.** This statement properly identifies a factor that weakens the argument.
- E The argument assumes that production of the drug will continue, no matter how inaccessible the tree is.

The correct answer is D.

28. Many breakfast cereals are fortified with vitamin supplements. Some of these cereals provide 100 percent of the recommended daily requirement of vitamins. Nevertheless, a well-balanced breakfast, including a variety of foods, is a better source of those vitamins than are such fortified breakfast cereals alone.

Which of the following, if true, would most strongly support the position above?

- (A) In many foods, the natural combination of vitamins with other nutrients makes those vitamins more usable by the body than are vitamins added in vitamin supplements.
- (B) People who regularly eat cereals fortified with vitamin supplements sometimes neglect to eat the foods in which the vitamins occur naturally.
- (C) Foods often must be fortified with vitamin supplements because naturally occurring vitamins are removed during processing.
- (D) Unprocessed cereals are naturally high in several of the vitamins that are usually added to fortified breakfast cereals.
- (E) Cereals containing vitamin supplements are no harder to digest than similar cereals without added vitamins.

Argument Evaluation

Situation A well-balanced breakfast with a variety of foods is a better source of vitamins than a breakfast of cereal fortified with vitamin supplements.

Reasoning *What strengthens the argument in favor of a balanced breakfast as a better source of vitamins?*

The argument compares the vitamins naturally occurring in foods with those added to cereal. What would make the vitamins in foods superior in nutritional value to the vitamin supplements in fortified cereals? If the combination of vitamins with other nutrients in many foods allowed the body to better use those vitamins, a balanced breakfast would be the preferred source of the vitamins.

- A **Correct.** This statement properly identifies a factor that strengthens the argument.
- B This statement explains who might benefit from a well-balanced breakfast, but it does not support the conclusion in favor eating a variety of foods.
- C This statement shows why foods need to be fortified, but it does not support the conclusion that naturally occurring vitamins in foods are better.
- D This statement provides some information about unprocessed cereals, but it does not explain why the vitamins found in a balanced breakfast are superior to the vitamins in fortified cereals.
- E The ability of the body to digest fortified or unfortified cereals is outside the scope of the question.

The correct answer is A.

Questions 29–30 are based on the following:

In many corporations, employees are being replaced by automated equipment in order to save money. However, many workers who lose their jobs to automation will need government assistance to survive, and the same corporations that are laying people off will eventually pay for that assistance through increased taxes and unemployment insurance payments.

29. The author is arguing that ____.
- (A) higher taxes and unemployment insurance payments will discourage corporations from automating
 - (B) replacing people through automation to reduce production costs will result in increases of other costs to corporations
 - (C) many workers who lose their jobs to automation will have to be retrained for new jobs
 - (D) corporations that are laying people off will eventually rehire many of them
 - (E) corporations will not save money by automating because people will be needed to run the new machines

Argument Construction

Situation Corporations replace employees with automated equipment to save money, but, through increased taxes and unemployment insurance, those corporations must pay for the government-assistance programs the laid-off employees then need to survive.

Reasoning *What is the author's argument?* To restate the argument, look at the information in the passage. The first sentence says that corporations replace workers with automated equipment in order to save money. The author then states that these same corporations will have other new costs in the form of increased taxes and unemployment insurance payments because the laid-off workers will require government assistance.

- A The author says there will be costs to the corporations but does not go so far as to say these costs will discourage the corporations from automating.
- B **Correct.** This statement properly identifies the author's argument that, in their efforts to lower costs through automation, corporations will incur increases in other costs.
- C The author does not discuss the retraining of employees.
- D The author does not discuss the rehiring of employees.
- E The corporations would have anticipated the number of employees necessary to run the automated equipment when they initially determined that automation would save money.

The correct answer is B.

30. Which of the following, if true, most strengthens the author's argument?
- Many workers who have already lost their jobs to automation have been unable to find new jobs.
 - Many corporations that have failed to automate have seen their profits decline.
 - Taxes and unemployment insurance are paid also by corporations that are not automating.
 - Most of the new jobs created by automation pay less than the jobs eliminated by automation did.
 - The initial investment in machinery for automation is often greater than the short-term savings in labor costs.

Argument Evaluation

Situation Corporations replace employees with automated equipment to save money, but, through increased taxes and unemployment insurance, those corporations must pay for the government assistance programs the laid-off employees then need to survive. (The same as the previous item.)

Reasoning *What information strengthens the author's argument?* By stating that the need for government-assistance programs will rise, the author clearly assumes that the laid-off employees will not find work and will have to rely on such programs. If other workers who have lost jobs to automation have been unable to find work, then the argument is strengthened because it shows that the author's assumption has proven to be true.

- A **Correct.** This statement properly identifies a factor that strengthens the author's argument.
- B The argument is about the corporations that do automate, not about those that do not, and thus this statement is irrelevant.
- C The fact that such costs are paid and will be paid by all corporations, whether or not they automate, weakens the author's argument by suggesting that the increased costs resulting from automation will be spread over a wider group.
- D This statement repeats that the corporations will initially experience lowered costs for employee wages; it does not strengthen the argument.
- E The equipment costs that are incurred immediately upon automating are not relevant to the argument. In the passage, the author maintains that corporations *will eventually pay* for the costs of increased government assistance, and it is those long-term costs on which the argument is based.

The correct answer is A.

31. When a polygraph test is judged inconclusive, this is no reflection on the examinee. Rather, such a judgment means that the test has failed to show whether the examinee was truthful or untruthful. Nevertheless, employers will sometimes refuse to hire a job applicant because of an inconclusive polygraph test result.

Which of the following conclusions can most properly be drawn from the information above?

- (A) Most examinees with inconclusive polygraph test results are in fact untruthful.
- (B) Polygraph tests should not be used by employers in the consideration of job applicants.
- (C) An inconclusive polygraph test result is sometimes unfairly held against the examinee.
- (D) A polygraph test indicating that an examinee is untruthful can sometimes be mistaken.
- (E) Some employers have refused to consider the results of polygraph tests when evaluating job applicants.

Argument Construction

Situation Employers sometimes refuse to hire job applicants because of inconclusive polygraph tests, even though inconclusive tests reveal only the failure of the test itself to determine the truthfulness or untruthfulness of the person tested.

Reasoning *What conclusion can be drawn from this information?* Inconclusive tests do not reveal anything about the person tested; inconclusive tests reveal only the failure of the test. Nevertheless, employers may choose not to hire an applicant whose polygraph test has had an inconclusive result. It is reasonable to conclude that these employers unfairly treat the lack of firm test results as evidence of a flaw—not in the test, but in the applicant.

- A This statement makes a judgment that is explicitly contradicted in the passage, which states that an inconclusive test is no reflection on the examinee.
- B The argument does not support this sweeping conclusion about all uses of polygraph tests; the passage discusses only inconclusive polygraph test results.
- C Correct.** This statement properly identifies a conclusion that can reasonably be drawn from the given information.
- D The argument is concerned only with inconclusive tests, not cases when the polygraph test is mistaken.
- E Employers who do not consider polygraph tests are irrelevant to the discussion.

The correct answer is C.

32. The technological conservatism of bicycle manufacturers is a reflection of the kinds of demand they are trying to meet. The only cyclists seriously interested in innovation and willing to pay for it are bicycle racers. Therefore, innovation in bicycle technology is limited by what authorities will accept as standard for purposes of competition in bicycle races.

Which of the following is an assumption made in drawing the conclusion on the previous page?

- (A) The market for cheap, traditional bicycles cannot expand unless the market for high-performance competition bicycles expands.
- (B) High-performance bicycles are likely to be improved more as a result of technological innovations developed in small workshops than as a result of technological innovations developed in major manufacturing concerns.
- (C) Bicycle racers do not generate a strong demand for innovations that fall outside what is officially recognized as standard for purposes of competition.
- (D) The technological conservatism of bicycle manufacturers results primarily from their desire to manufacture a product that can be sold without being altered to suit different national markets.
- (E) The authorities who set standards for high-performance bicycle racing do not keep informed about innovative bicycle design.

Argument Construction

Situation Bicycle racers are the only consumers willing to pay for innovations in bicycle technology. Manufacturers therefore limit innovation to the standards established for competitive bicycle racing.

Reasoning *What is being assumed in this argument?* This argument implies a connection between what bicycle racers want and what bicycle manufacturers make. The passage states that only racers are interested in innovation and willing to pay for it. Bicycle manufacturers have determined it is not worthwhile to produce innovative bicycles that do not meet official standards. What is the implied interaction? It is reasonable to assume that racers must not be interested in buying models that, while innovative, do not meet official standards for racing; they will pay only for those innovations that are acceptable in competition.

- A The argument concerns innovation in bicycle technology. It is not about the entire market for all bicycles, so no assumption is made about traditional bicycles.
- B The passage does not discuss where the best innovations are likely to be created, so no assumption about small workshops versus large manufacturers is made.
- C **Correct.** This statement properly identifies the conclusion's underlying assumption that bicycle racers do not buy bicycles they cannot use for racing.
- D The passage does not discuss different national markets; no assumption can be made about them.
- E The passage does not indicate what the authorities do or do not know; this statement is extraneous to the passage and cannot be assumed.

The correct answer is C.

33. Robot satellites relay important communications and identify weather patterns. Because the satellites can be repaired only in orbit, astronauts are needed to repair them. Without repairs, the satellites would eventually malfunction. Therefore, space flights carrying astronauts must continue.

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

- (A) Satellites falling from orbit because of malfunctions burn up in the atmosphere.
- (B) Although satellites are indispensable in the identification of weather patterns, weather forecasters also make some use of computer projections to identify weather patterns.
- (C) The government, responding to public pressure, has decided to cut the budget for space flights and put more money into social welfare programs.
- (D) Repair of satellites requires heavy equipment, which adds to the amount of fuel needed to lift a spaceship carrying astronauts into orbit.
- (E) Technical obsolescence of robot satellites makes repairing them more costly and less practical than sending new, improved satellites into orbit.

Argument Evaluation

Situation Space flights carrying astronauts must continue so that the astronauts can repair robot satellites in orbit.

Reasoning *What information would most weaken the argument?* It is argued that satellite repairs are needed to avoid potential malfunctions and that astronauts are needed to perform the repairs. Information that challenges either of these needs weakens the argument. High-technology equipment may quickly become obsolescent. A less expensive and more practical solution to the problem of repairing obsolescent satellites is to launch new, improved satellites. This suggestion of a better alternative weakens the argument considerably.

- A Malfunction can destroy the satellite; this statement lends some support to the argument to continue space flights to avoid satellite malfunctions.
- B Since satellites are judged to be *indispensable*, this statement suggests that their repair continues to be necessary.
- C While budget cuts for space flights provide a context for the argument in favor of continuing flights, this statement does not weaken the argument.
- D Increased fuel costs do not weaken the argument that space flights are needed to maintain the satellites.
- E **Correct.** This statement properly identifies a factor that weakens the argument.

The correct answer is E.

34. A company's two divisions performed with remarkable consistency over the past three years: in each of those years, the pharmaceuticals division has accounted for roughly 20 percent of dollar sales and 40 percent of profits, and the chemicals division for the balance.

Regarding the past three years, which of the following can properly be inferred from the statement above?

- (A) Total dollar sales for each of the company's divisions have remained roughly constant.
- (B) The pharmaceuticals division has faced stiffer competition in its markets than has the chemicals division.
- (C) The chemicals division has realized lower profits per dollar of sales than has the pharmaceuticals division.
- (D) The product mix offered by each of the company's divisions has remained unchanged.
- (E) Highly profitable products accounted for a higher percentage of the chemicals division's sales than of the pharmaceuticals division's.

Argument Construction

Situation For three years, the pharmaceutical division of a company has accounted for 20 percent of the dollar sales and 40 percent of the profits, and the chemicals division for the balance.

Reasoning *What can be inferred from these numbers?* If the pharmaceuticals division made 40 percent of the company's profits on 20 percent of the company's dollar sales, then the chemicals division made 60 percent of the profits on 80 percent of the sales. Comparing these percentages makes it clear that the pharmaceuticals division makes more profit per dollar of sales than the chemicals division does.

- A The information is about percentages, not total dollars.
- B There is no information about the competition faced by either division; the higher profit margin for the pharmaceuticals division would suggest, if anything, less intense competition in its markets.
- C **Correct.** This statement properly identifies an inference that can be drawn from the given information.
- D Since there is no information about the product mix, no inference about it is possible.
- E The passage does not distinguish between highly profitable products and other products, so this inference cannot be drawn from the information.

The correct answer is C.

35. 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.

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

- (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

Situation An advertisement for MegaCorp observes that every advance in quality raises customer expectations; it is not enough for a company to be satisfied with current quality.

Reasoning: *What conclusion can be based on the assertions in the advertisement?* Meeting or exceeding customer expectations is MegaCorp's goal. Since advances in quality are said to increase expectations, those advances must continue. Therefore, the advertisement assumes there exists a continually increasing level of product quality to which the company can aspire.

- A The ad provides no information about MegaCorp's competitors so no conclusion about them is possible.
- B The ad says that customers' expectations come from the quality of the product itself, not from how MegaCorp anticipates those expectations.
- C **Correct.** This statement properly identifies a conclusion that can be drawn from the advertisement's argument.
- D While the ad implies that a company should not be satisfied with current quality, it does not go so far as to say that such an attitude causes quality to decline.
- E MegaCorp states its goal, but there is no evidence that it currently meets that goal.

The correct answer is C.

36. Many companies now have employee assistance programs that enable employees, free of charge, to improve their physical fitness, reduce stress, and learn ways to stop smoking. These programs increase worker productivity, reduce absenteeism, and lessen insurance costs for employee health care. Therefore, these programs benefit the company as well as the employee.

Which of the following, if true, most significantly strengthens the conclusion above?

- (A) Physical fitness programs are often the most popular services offered to employees.
- (B) Studies have shown that training in stress management is not effective for many people.
- (C) Regular exercise reduces people's risk of heart disease and provides them with increased energy.
- (D) Physical injuries sometimes result from entering a strenuous physical fitness program too quickly.
- (E) Employee assistance programs require companies to hire people to supervise the various programs offered.

Argument Evaluation

Situation Employee assistance programs benefit the company as well as the employees.

Reasoning *What evidence shows that the programs do benefit both the company and the employees?* The argument already points out several benefits for the company, but the conclusion maintains that there are positive results for the employees as well. The existence of such benefits to employees needs to be substantiated. If regular exercise lowers their risk for some serious diseases, employees can indeed benefit from their participation in these programs. Furthermore, increased employee energy benefits the employees as well as the company.

- A The popularity of physical fitness programs does not explain how employee assistance programs benefit both company and employee.
- B Evidence that the stress management program is ineffective weakens the argument rather than strengthens it.
- C **Correct.** This statement properly identifies evidence that strengthens the conclusion.
- D Injuries benefit neither the company nor the employees.
- E The need to hire supervisors is an increased cost for the company, not a benefit.

The correct answer is C.

Questions 37–38 are based on the following:

Companies O and P each have the same number of employees who work the same number of hours per week. According to records maintained by each company, the employees of Company O had fewer job-related accidents last year than did the employees of Company P. Therefore, employees of Company O are less likely to have job-related accidents than are employees of Company P.

37. Which of the following, if true, would most strengthen the conclusion above?
- (A) Company P manufactures products that are more hazardous for workers to produce than does Company O.
 - (B) Company P holds more safety inspections than does Company O.
 - (C) Company P maintains a more modern infirmary than does Company O.
 - (D) Company O paid more for new job-related medical claims than did Company P.
 - (E) Company P provides more types of health-care benefits than does Company O.

Argument Evaluation

Situation Two companies have the same number of employees working the same number of hours a week, but one company's employees reportedly had fewer job-related accidents last year and so are likely to have fewer job-related accidents in general.

Reasoning *What point would most strengthen this argument?* The argument generalizes from the number of last year's job-related accidents at the two companies to a continuing reduced likelihood of such accidents at the one company. Specific information that suggests that the one company is inherently a safer place than the other would support the generalized argument. If one company's employees must work on a product that is more hazardous to make, then it is reasonable to conclude that they will continue to suffer more job-related accidents than the employees at the other company. Since the product is not going to change, it is likely that the proportion of accidents will not either.

- A **Correct.** This statement properly identifies specific information that strengthens the conclusion.
- B A greater attention to safety does not lead to the conclusion that there will be a greater number of accidents.
- C Having a modern infirmary does not cause more or fewer accidents; it simply provides a place for accident victims to receive care.
- D The greater amount paid for job-related medical claims may indicate that, although the accidents were fewer, they were more serious, but it does not strengthen the argument about the occurrence of the accidents.
- E One company's superior health-care benefits are irrelevant to the likelihood of accidents.

The correct answer is A.

38. Which of the following, if true, would most weaken the conclusion above?

- (A) The employees of Company P lost more time at work due to job-related accidents than did the employees of Company O.
- (B) Company P considered more types of accidents to be job-related than did Company O.
- (C) The employees of Company P were sick more often than were the employees of Company O.
- (D) Several employees of Company O each had more than one job-related accident.
- (E) The majority of job-related accidents at Company O involved a single machine.

Argument Evaluation

Situation Two companies have the same number of employees working the same number of hours a week, but one company's employees reportedly had fewer job-related accidents last year and so are likely to have fewer job-related accidents in general. (The same as the previous item.)

Reasoning *What point would most weaken the argument?* The passage concludes that one company is safer than the other because it reported fewer job-related accidents than the other did. Since the argument relies on the comparison of one company's reported accidents to the other company's reported accidents, any information that suggests their reporting was done differently would undermine both the argument's comparison and the conclusion. Differences in the way the companies reported the accidents would make the accident rates difficult to compare directly. Since the company reporting the greater number of job-related accidents also considers more types of accidents to be job-related, the basis of the comparison is weakened and so is the argument.

- A The greater amount of time lost at work by the employees of the company with the greater number of job-related accidents is to be expected; the argument is not affected.
- B **Correct.** This statement properly identifies the fact that the company reporting the greater number of accidents used a broader definition. Thus, the basis of the comparison is faulty, and the conclusion is weakened.
- C Illness is not the same as a job-related accident, so more reports of illness are irrelevant to a comparison of accidents.
- D This statement is consistent with Company O's reporting that fewer of its employees had job-related accidents; it does not undermine the conclusion.
- E Identifying one major cause of job-related accidents at Company O does not weaken the conclusion that the company is likely to have fewer accidents than Company P.

The correct answer is B.