

## 4.4 Sample Questions

Each of the **critical reasoning** questions is based on a short argument, a set of statements, or a plan of action. For each question, select the best answer of the choices given.

1. The sustained massive use of pesticides in farming has two effects that are especially pernicious. First, it often kills off the pests' natural enemies in the area. Second, it often unintentionally gives rise to insecticide-resistant pests, since those insects that survive a particular insecticide will be the ones most resistant to it, and they are the ones left to breed.

From the passage above, it can be properly inferred that the effectiveness of the sustained massive use of pesticides can be extended by doing which of the following, assuming that each is a realistic possibility?

- (A) Using only chemically stable insecticides
  - (B) Periodically switching the type of insecticide used
  - (C) Gradually increasing the quantities of pesticides used
  - (D) Leaving a few fields fallow every year
  - (E) Breeding higher-yielding varieties of crop plants
2. Which of the following, if true, most logically completes the argument below?

Manufacturers are now required to make all cigarette lighters child-resistant by equipping them with safety levers. But this change is unlikely to result in a significant reduction in the number of fires caused by children playing with lighters, because children given the opportunity can figure out how to work the safety levers and \_\_\_\_\_.

- (A) the addition of the safety levers has made lighters more expensive than they were before the requirement was instituted
  - (B) adults are more likely to leave child-resistant lighters than non-child-resistant lighters in places that are accessible to children
  - (C) many of the fires started by young children are quickly detected and extinguished by their parents
  - (D) unlike child-resistant lighters, lighters that are not child-resistant can be operated by children as young as two years old
  - (E) approximately 5,000 fires per year have been attributed to children playing with lighters before the safety levers were required
3. Which of the following most logically completes the passage?

A business analysis of the Appenian railroad system divided its long-distance

passenger routes into two categories: rural routes and interurban routes. The analysis found that, unlike the interurban routes, few rural routes carried a high enough passenger volume to be profitable. Closing unprofitable rural routes, however, will not necessarily enhance the profitability of the whole system, since \_\_\_\_\_.

(A) a large part of the passenger volume on interurban routes is accounted for by passengers who begin or end their journeys on rural routes

(B) within the last two decades several of the least used rural routes have been closed and their passenger services have been replaced by buses

(C) the rural routes were all originally constructed at least one hundred years ago, whereas some of the interurban routes were constructed recently for new high-speed express trains

(D) not all of Appenia's large cities are equally well served by interurban railroad services

(E) the greatest passenger volume, relative to the routes' capacity, is not on either category of long-distance routes but is on suburban commuter routes

4. A cost-effective solution to the problem of airport congestion is to provide high-speed ground transportation between major cities lying 200 to 500 miles apart. The successful implementation of this plan would cost far less than expanding existing airports and would also reduce the number of airplanes clogging both airports and airways.

Which of the following, if true, could proponents of the plan above most appropriately cite as a piece of evidence for the soundness of their plan?

(A) An effective high-speed ground-transportation system would require major repairs to many highways and mass-transit improvements.

(B) One-half of all departing flights in the nation's busiest airport head for a destination in a major city 225 miles away.

(C) The majority of travelers departing from rural airports are flying to destinations in cities over 600 miles away.

(D) Many new airports are being built in areas that are presently served by high-speed ground transportation systems.

(E) A large proportion of air travelers are vacationers who are taking long-distance flights.

5. In an attempt to promote the widespread use of paper rather than plastic, and thus reduce nonbiodegradable waste, the council of a small town plans to ban the sale of disposable plastic goods for which substitutes made of paper exist. The council argues that since most paper is entirely biodegradable, paper goods are environmentally preferable.

Which of the following, if true, indicates that the plan to ban the sale of disposable plastic goods is ill suited to the town council's environmental goals?

(A) Although biodegradable plastic goods are now available, members of the town council believe biodegradable paper goods to be safer for the environment.

(B) The paper factory at which most of the townspeople are employed plans to increase production of biodegradable paper goods.

(C) After other towns enacted similar bans on the sale of plastic goods, the environmental benefits were not discernible for several years.

(D) Since most townspeople prefer plastic goods to paper goods in many instances, they are likely to purchase them in neighboring towns where plastic goods are available for sale.

(E) Products other than those derived from wood pulp are often used in the manufacture of paper goods that are entirely biodegradable.

6. Since the mayor's publicity campaign for Greenville's bus service began six months ago, morning automobile traffic into the midtown area of the city has decreased 7 percent. During the same period, there has been an equivalent rise in the number of persons riding buses into the midtown area. Obviously, the mayor's publicity campaign has convinced many people to leave their cars at home and ride the bus to work.

Which of the following, if true, casts the most serious doubt on the conclusion drawn above?

(A) Fares for all bus routes in Greenville have risen an average of 5 percent during the past six months.

(B) The mayor of Greenville rides the bus to City Hall in the city's midtown area.

(C) Road reconstruction has greatly reduced the number of lanes available to commuters in major streets leading to the midtown area during the past six months.

(D) The number of buses entering the midtown area of Greenville during the morning hours is exactly the same now as it was one year ago.

(E) Surveys show that longtime bus riders are no more satisfied with the Greenville bus service than they were before the mayor's publicity campaign began.

7. Although Ackerburg's subway system is currently operating at a deficit, the transit authority will lower subway fares next year. The authority projects that the lower fares will result in a ten percent increase in the number of subway riders. Since the additional income from the larger ridership will more than offset the decrease due

to lower fares, the transit authority actually expects the fare reduction to reduce or eliminate the subway system's operating deficit for next year.

Which of the following, if true, provides the most support for the transit authority's expectation of reducing the subway system's operating deficit?

- (A) Throughout the years that the subway system has operated, fares have never before been reduced.
- (B) The planned fare reduction will not apply to students, who can already ride the subway for a reduced fare.
- (C) Next year, the transit authority will have to undertake several large-scale track maintenance projects.
- (D) The subway system can accommodate a ten percent increase in ridership without increasing the number of trains it runs each day.
- (E) The current subway fares in Ackerburg are higher than subway fares in other cities in the region.

8. People's television-viewing habits could be monitored by having television sets, when on, send out low-level electromagnetic waves that are reflected back to the sets. The reflected waves could then be analyzed to determine how many persons are within the viewing area of the sets. Critics fear adverse health effects of such a monitoring system, but a proponent responds, "The average dose of radiation is less than one chest x-ray. As they watch, viewers won't feel a thing."

Which of the following issues would it be most important to resolve in evaluating the dispute concerning the health effects of the proposed system?

- (A) Whether the proposed method of monitoring viewership can distinguish between people and pets
- (B) Whether radar speed monitors also operate on the principle of analyzing reflected waves of electromagnetic radiation
- (C) Whether the proposed system has been tried out in various areas of the country or in a single area only
- (D) What uses are foreseen for the viewership data
- (E) Whether the average dose that the proponent describes is a short-term dose or a lifetime cumulative dose

9. Patrick usually provides child care for six children. Parents leave their children at Patrick's house in the morning and pick them up after work. At the end of each workweek, the parents pay Patrick at an hourly rate for the child care provided that week. The weekly income Patrick receives is usually adequate but not always uniform, particularly in the winter, when children are likely to get sick and be unpredictably absent.

Which of the following plans, if put into effect, has the best prospect of making Patrick's weekly income both uniform and adequate?

- (A) Pool resources with a neighbor who provides child care under similar arrangements, so that the two of them cooperate in caring for twice as many children as Patrick currently does.
- (B) Replace payment by actual hours of child care provided with a fixed weekly fee based upon the number of hours of child care that Patrick would typically be expected to provide.
- (C) Hire a full-time helper and invest in facilities for providing child care to sick children.
- (D) Increase the hourly rate to a level that would provide adequate income even in a week when half of the children Patrick usually cares for are absent.
- (E) Increase the number of hours made available for child care each day, so that parents can leave their children in Patrick's care for a longer period each day at the current hourly rate.

10. A computer equipped with signature-recognition software, which restricts access to a computer to those people whose signatures are on file, identifies a person's signature by analyzing not only the form of the signature but also such characteristics as pen pressure and signing speed. Even the most adept forgers cannot duplicate all of the characteristics the program analyzes.

Which of the following can be logically concluded from the passage above?

- (A) The time it takes to record and analyze a signature makes the software impractical for everyday use.
- (B) Computers equipped with the software will soon be installed in most banks.
- (C) Nobody can gain access to a computer equipped with the software solely by virtue of skill at forging signatures.
- (D) Signature-recognition software has taken many years to develop and perfect.
- (E) In many cases even authorized users are denied legitimate access to computers equipped with the software.

11. Extinction is a process that can depend on a variety of ecological, geographical, and physiological variables. These variables affect different species of organisms in different ways, and should, therefore, yield a random pattern of extinctions. However, the fossil record shows that extinction occurs in a surprisingly definite pattern, with many species vanishing at the same time.

Which of the following, if true, forms the best basis for at least a partial

explanation of the patterned extinctions revealed by the fossil record?

- (A) Major episodes of extinction can result from widespread environmental disturbances that affect numerous different species.
- (B) Certain extinction episodes selectively affect organisms with particular sets of characteristics unique to their species.
- (C) Some species become extinct because of accumulated gradual changes in their local environments.
- (D) In geologically recent times, for which there is no fossil record, human intervention has changed the pattern of extinctions.
- (E) Species that are widely dispersed are the least likely to become extinct.

12. Shelby Industries manufactures and sells the same gauges as Jones Industries. Employee wages account for 40 percent of the cost of manufacturing gauges at both Shelby Industries and Jones Industries. Shelby Industries is seeking a competitive advantage over Jones Industries. Therefore, to promote this end, Shelby Industries should lower employee wages.

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

- (A) Because they make a small number of precision instruments, gauge manufacturers cannot receive volume discounts on raw materials.
- (B) Lowering wages would reduce the quality of employee work, and this reduced quality would lead to lowered sales.
- (C) Jones Industries has taken away 20 percent of Shelby Industries' business over the last year.
- (D) Shelby Industries pays its employees, on average, 10 percent more than does Jones Industries.
- (E) Many people who work for manufacturing plants live in areas in which the manufacturing plant they work for is the only industry.

13. In parts of South America, vitamin-A deficiency is a serious health problem, especially among children. In one region, agriculturists are attempting to improve nutrition by encouraging farmers to plant a new variety of sweet potato called SPK004 that is rich in betacarotene, which the body converts into vitamin A. The plan has good chances of success, since sweet potato is a staple of the region's diet and agriculture, and the varieties currently grown contain little beta-carotene.

Which of the following, if true, most strongly supports the prediction that the plan will succeed?

- (A) The growing conditions required by the varieties of sweet potato currently cultivated in the region are conditions in which SPK004 can flourish.

(B) The flesh of SPK004 differs from that of the currently cultivated sweet potatoes in color and texture, so traditional foods would look somewhat different when prepared from SPK004.

(C) There are no other varieties of sweet potato that are significantly richer in beta-carotene than SPK004 is.

(D) The varieties of sweet potato currently cultivated in the region contain some important nutrients that are lacking in SPK004.

(E) There are other vegetables currently grown in the region that contain more beta-carotene than the currently cultivated varieties of sweet potato do.

14. Which of the following most logically completes the argument?

The last members of a now-extinct species of a European wild deer called the giant deer lived in Ireland about 16,000 years ago. Prehistoric cave paintings in France depict this animal as having a large hump on its back. Fossils of this animal, however, do not show any hump. Nevertheless, there is no reason to conclude that the cave paintings are therefore inaccurate in this regard, since \_\_\_\_\_.

(A) some prehistoric cave paintings in France also depict other animals as having a hump

(B) fossils of the giant deer are much more common in Ireland than in France

(C) animal humps are composed of fatty tissue, which does not fossilize

(D) the cave paintings of the giant deer were painted well before 16,000 years ago

(E) only one currently existing species of deer has any anatomical feature that even remotely resembles a hump

15. High levels of fertilizer and pesticides, needed when farmers try to produce high yields of the same crop year after year, pollute water supplies. Experts therefore urge farmers to diversify their crops and to rotate their plantings yearly.

To receive governmental price-support benefits for a crop, farmers must have produced that same crop for the past several years.

The statements above, if true, best support which of the following conclusions?

(A) The rules for governmental support of farm prices work against efforts to reduce water pollution.

(B) The only solution to the problem of water pollution from fertilizers and pesticides is to take farmland out of production.

(C) Farmers can continue to make a profit by rotating diverse crops, thus

reducing costs for chemicals, but not by planting the same crop each year.

(D) New farming techniques will be developed to make it possible for farmers to reduce the application of fertilizers and pesticides.

(E) Governmental price supports for farm products are set at levels that are not high enough to allow farmers to get out of debt.

16. Ten years ago the number of taxpayers in Green County was slightly greater than the number of registered voters. The number of taxpayers has doubled over the last ten years, while the number of registered voters has increased, but at a lower rate than has the number of taxpayers.

Which of the following must be true in Greenspace County if the statements above are true?

(A) The number of taxpayers is now smaller than the number of registered voters.

(B) Everyone who is a registered voter is also a taxpayer.

(C) The proportion of registered voters to taxpayers has increased over the last ten years.

(D) The proportion of registered voters to taxpayers has decreased over the last ten years.

(E) The proportion of registered voters to taxpayers has remained unchanged over the last ten years.

17. The interview is an essential part of a successful hiring program because, with it, job applicants who have personalities that are unsuited to the requirements of the job will be eliminated from consideration.

The argument above logically depends on which of the following assumptions?

(A) A hiring program will be successful if it includes interviews.

(B) The interview is a more important part of a successful hiring program than is the development of a job description.

(C) Interviewers can accurately identify applicants whose personalities are unsuited to the requirements of the job.

(D) The only purpose of an interview is to evaluate whether job applicants' personalities are suited to the requirements of the job.

(E) The fit of job applicants' personalities to the requirements of the job was once the most important factor in making hiring decisions.

18. A major health insurance company in Lagolia pays for special procedures prescribed by physicians only if the procedure is first approved as "medically necessary" by a company-appointed review panel. The rule is intended to save the



company the money it might otherwise spend on medically unnecessary procedures. The company has recently announced that in order to reduce its costs, it will abandon this rule.

Which of the following, if true, provides the strongest justification for the company's decision?

- (A) Patients often register dissatisfaction with physicians who prescribe nothing for their ailments.
- (B) Physicians often prescribe special procedures that are helpful but not altogether necessary for the health of the patient.
- (C) The review process is expensive and practically always results in approval of the prescribed procedure.
- (D) The company's review process does not interfere with the prerogative of physicians, in cases where more than one effective procedure is available, to select the one they personally prefer.
- (E) The number of members of the company = appointed review panel who review a given procedure depends on the cost of the procedure.

19. To evaluate a plan to save money on office-space expenditures by having its employees work at home, XYZ Company asked volunteers from its staff to try the arrangement for six months. During this period, the productivity of these employees was as high as or higher than before.

Which of the following, if true, would argue most strongly against deciding, on the basis of the trial results, to implement the company's plan?

- (A) The employees who agreed to participate in the test of the plan were among the company's most self-motivated and independent workers.
- (B) The savings that would accrue from reduced office-space expenditures alone would be sufficient to justify the arrangement for the company, apart from any productivity increases.
- (C) Other companies that have achieved successful results from work-at-home plans have workforces that are substantially larger than that of XYZ.
- (D) The volunteers who worked at home were able to communicate with other employees as necessary for performing the work.
- (E) Minor changes in the way office work is organized at XYZ would yield increases in employee productivity similar to those achieved in the trial.

20. Consumer health advocate: Your candy company adds caffeine to your chocolate candy bars so that each one delivers a specified amount of caffeine. Since caffeine is highly addictive, this indicates that you intend to keep your customers addicted.

Candy manufacturer: Our manufacturing process results in there being less

caffeine in each chocolate candy bar than in the unprocessed cacao beans from which the chocolate is made.

The candy manufacturer's response is flawed as a refutation of the consumer health advocate's argument because it

- (A) fails to address the issue of whether the level of caffeine in the candy bars sold by the manufacturer is enough to keep people addicted
- (B) assumes without warrant that all unprocessed cacao beans contain a uniform amount of caffeine
- (C) does not specify exactly how caffeine is lost in the manufacturing process
- (D) treats the consumer health advocate's argument as though it were about each candy bar rather than about the manufacturer's candy in general
- (E) merely contradicts the consumer health advocate's conclusion without giving any reason to believe that the advocate's reasoning is unsound

21. Nutritionists are advising people to eat more fish, since the omega-3 fatty acids in fish help combat many diseases. If everyone took this advice, however, there would not be enough fish in oceans, rivers, and lakes to supply the demand; the oceans are already being overfished. The obvious method to ease the pressure on wild fish populations is for people to increase their consumption of farmed fish.

Which of the following, if true, raises the most serious doubt concerning the prospects for success of the solution proposed above?

- (A) Aquaculture, or fish farming, raises more fish in a given volume of water than are generally present in the wild.
- (B) Some fish farming, particularly of shrimp and other shellfish, takes place in enclosures in the ocean.
- (C) There are large expanses of ocean waters that do not contain enough nutrients to support substantial fish populations.
- (D) The feed for farmed ocean fish is largely made from small wild-caught fish, including the young of many popular food species.
- (E) Some of the species that are now farmed extensively were not commonly eaten when they were only available in the wild.

22. Crops can be traded on the futures market before they are harvested. If a poor corn harvest is predicted, prices of corn futures rise; if a bountiful corn harvest is predicted, prices of corn futures fall. This morning meteorologists are predicting much-needed rain for the corn-growing region starting tomorrow. Therefore, since adequate moisture is essential for the current crop's survival, prices of corn futures will fall sharply today.

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

- (A) Corn that does not receive adequate moisture during its critical pollination stage will not produce a bountiful harvest.
- (B) Futures prices for corn have been fluctuating more dramatically this season than last season.
- (C) The rain that meteorologists predicted for tomorrow is expected to extend well beyond the corn-growing region.
- (D) Agriculture experts announced today that a disease that has devastated some of the corn crop will spread widely before the end of the growing season.
- (E) Most people who trade in corn futures rarely take physical possession of the corn they trade.

23. Large national budget deficits do not cause large trade deficits. If they did, countries with the largest budget deficits would also have the largest trade deficits. In fact, when deficit figures are adjusted so that different countries are reliably comparable to each other, there is no such correlation.

If the statements above are all true, which of the following can properly be inferred on the basis of them?

- (A) Countries with large national budget deficits tend to restrict foreign trade.
- (B) Reliable comparisons of the deficit figures of one country with those of another are impossible.
- (C) Reducing a country's national budget deficit will not necessarily result in a lowering of any trade deficit that country may have.
- (D) When countries are ordered from largest to smallest in terms of population, the smallest countries generally have the smallest budget and trade deficits.
- (E) Countries with the largest trade deficits never have similarly large national budget deficits.

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

The more worried investors are about losing their money, the more they will demand a high potential return on their investment; great risks must be offset by the chance of great rewards. This principle is the fundamental one in determining interest rates, and it is illustrated by the fact that \_\_\_\_\_.

- (A) successful investors are distinguished by an ability to make very risky investments without worrying about their money

- (B) lenders receive higher interest rates on unsecured loans than on loans backed by collateral
- (C) in times of high inflation, the interest paid to depositors by banks can actually be below the rate of inflation
- (D) at any one time, a commercial bank will have a single rate of interest that it will expect all of its individual borrowers to pay
- (E) the potential return on investment in a new company is typically lower than the potential return on investment in a well-established company

25. It is often said that high rates of inflation tend to diminish people's incentive to save and invest. This view must be incorrect, however, because people generally saved and invested more of their income in the 1970's when inflation rates were high than they did in the 1980's when inflation rates were low.

Of the following, the best criticism of the argument above is that it overlooks the possibility that

- (A) all people do not respond in the same way to a given economic stimulus
- (B) certain factors operating in the 1980's but not in the 1970's diminished people's incentive to save and invest
- (C) the population was larger in the 1980's than it was in the 1970's
- (D) the proponents of the view cited would stand to gain if inflation rates become lower
- (E) a factor that affects people's savings behavior in a certain way could affect people's investment behavior quite differently

26. Company Alpha buys free-travel coupons from people who are awarded the coupons by Bravo Airlines for flying frequently on Bravo airplanes. The coupons are sold to people who pay less for the coupons than they would pay by purchasing tickets from Bravo. This marketing of coupons results in lost revenue for Bravo.

To discourage the buying and selling of free-travel coupons, it would be best for Bravo Airlines to restrict the

- (A) number of coupons that a person can be awarded in a particular year
- (B) use of the coupons to those who were awarded the coupons and members of their immediate families
- (C) days that the coupons can be used to Monday through Friday
- (D) amount of time that the coupons can be used after they are issued
- (E) number of routes on which travelers can use the coupons

27. A proposed ordinance requires the installation in new homes of sprinklers automatically triggered by the presence of a fire. However, a home builder argued

that because more than 90 percent of residential fires are extinguished by a household member, residential sprinklers would only marginally decrease property damage caused by residential fires.

Which of the following, if true, would most seriously weaken the home builder's argument?

- (A) Most individuals have no formal training in how to extinguish fires.
- (B) Since new homes are only a tiny percentage of available housing in the city, the new ordinance would be extremely narrow in scope.
- (C) The installation of smoke detectors in new residences costs significantly less than the installation of sprinklers.
- (D) In the city where the ordinance was proposed, the average time required by the fire department to respond to a fire was less than the national average.
- (E) The largest proportion of property damage that results from residential fires is caused by fires that start when no household member is present.

28. Which of the following most logically completes the argument below?

Within the earth's core, which is iron, pressure increases with depth. Because the temperature at which iron melts increases with pressure, the inner core is solid and the outer core is molten. Physicists can determine the melting temperature of iron at any given pressure and the pressure for any given depth in the earth. Therefore, the actual temperature at the boundary of the earth's outer and inner cores—the melting temperature of iron there—can be determined, since \_\_\_\_\_.

- (A) the depth beneath the earth's surface of the boundary between the outer and inner cores is known
- (B) some of the heat from the earth's core flows to the surface of the earth
- (C) pressures within the earth's outer core are much greater than pressures above the outer core
- (D) nowhere in the earth's core can the temperature be measured directly
- (E) the temperatures within the earth's inner core are higher than in the outer core

29. Which of the following most logically completes the reasoning?

Either food scarcity or excessive hunting can threaten a population of animals. If the group faces food scarcity, individuals in the group will reach reproductive maturity later than otherwise. If the group faces excessive hunting, individuals that reach reproductive maturity earlier will come to predominate. Therefore, it should be possible to determine whether prehistoric mastodons became extinct because of food scarcity or human hunting, since there are fossilized mastodon remains from

both before and after mastodon populations declined, and \_\_\_\_\_.

- (A) there are more fossilized mastodon remains from the period before mastodon populations began to decline than from after that period
- (B) the average age at which mastodons from a given period reached reproductive maturity can be established from their fossilized remains
- (C) it can be accurately estimated from fossilized remains when mastodons became extinct
- (D) it is not known when humans first began hunting mastodons
- (E) climate changes may have gradually reduced the food available to mastodons

30. Unlike the wholesale price of raw wool, the wholesale price of raw cotton has fallen considerably in the last year. Thus, although the retail price of cotton clothing at retail clothing stores has not yet fallen, it will inevitably fall.

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

- (A) The cost of processing raw cotton for cloth has increased during the last year.
- (B) The wholesale price of raw wool is typically higher than that of the same volume of raw cotton.
- (C) The operating costs of the average retail clothing store have remained constant during the last year.
- (D) Changes in retail prices always lag behind changes in wholesale prices.
- (E) The cost of harvesting raw cotton has increased in the last year.

31. A recent spate of launching and operating mishaps with television satellites led to a corresponding surge in claims against companies underwriting satellite insurance. As a result, insurance premiums shot up, making satellites more expensive to launch and operate. This, in turn, had added to the pressure to squeeze more performance out of currently operating satellites.

Which of the following, if true, taken together with the information above, best supports the conclusion that the cost of television satellites will continue to increase?

- (A) Since the risk to insurers of satellites is spread over relatively few units, insurance premiums are necessarily very high.
- (B) When satellites reach orbit and then fail, the causes of failure are generally impossible to pinpoint with confidence.
- (C) The greater the performance demands placed on satellites, the more frequently those satellites break down.

(D) Most satellites are produced in such small numbers that no economies of scale can be realized.

(E) Since many satellites are built by unwieldy international consortia, inefficiencies are inevitable.

32. If the airspace around centrally located airports were restricted to commercial airliners and only those private planes equipped with radar, most of the private-plane traffic would be forced to use outlying airfields. Such a reduction in the amount of private plane traffic would reduce the risk of midair collision around the centrally located airports.

The conclusion drawn in the first sentence depends on which of the following assumptions?

(A) Outlying airfields would be as convenient as centrally located airports for most pilots of private planes.

(B) Most outlying airfields are not equipped to handle commercial-airline traffic.

(C) Most private planes that use centrally located airports are not equipped with radar.

(D) Commercial airliners are at greater risk of becoming involved in midair collisions than are private planes.

(E) A reduction in the risk of midair collision would eventually lead to increases in commercial airline traffic.

33. Many office buildings designed to prevent outside air from entering have been shown to have elevated levels of various toxic substances circulating through the air inside, a phenomenon known as sick building syndrome. Yet the air in other office buildings does not have elevated levels of these substances, even though those buildings are the same age as the “sick” buildings and have similar designs and ventilation systems.

Which of the following, if true, most helps to explain why not all office buildings designed to prevent outside air from entering have air that contains elevated levels of toxic substances?

(A) Certain adhesives and drying agents used in particular types of furniture, carpets, and paint contribute the bulk of the toxic substances that circulate in the air of office buildings.

(B) Most office buildings with sick building syndrome were built between 1950 and 1990.

(C) Among buildings designed to prevent outside air from entering, houses are no less likely than office buildings to have air that contains elevated levels of toxic substances.

(D) The toxic substances that are found in the air of “sick” office buildings are substances that are found in at least small quantities in nearly every building.

(E) Office buildings with windows that can readily be opened are unlikely to suffer from sick building syndrome.

34. A discount retailer of basic household necessities employs thousands of people and pays most of them at the minimum wage rate. Yet following a federally mandated increase of the minimum wage rate that increased the retailer’s operating costs considerably, the retailer’s profits increased markedly.

Which of the following, if true, most helps to resolve the apparent paradox?

(A) Over half of the retailer’s operating costs consist of payroll expenditures; yet only a small percentage of those expenditures go to pay management salaries.

(B) The retailer’s customer base is made up primarily of people who earn, or who depend on the earnings of others who earn, the minimum wage.

(C) The retailer’s operating costs, other than wages, increased substantially after the increase in the minimum wage rate went into effect.

(D) When the increase in the minimum wage rate went into effect, the retailer also raised the wage rate for employees who had been earning just above minimum wage.

(E) The majority of the retailer’s employees work as cashiers, and most cashiers are paid the minimum wage.

35. Premature babies who receive regular massages are more active than premature babies who do not. Even when all the babies drink the same amount of milk, the massaged babies gain more weight than do the unmassaged babies. This is puzzling because a more active person generally requires a greater food intake to maintain or gain weight.

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

(A) Increased activity leads to increased levels of hunger, especially when food intake is not also increased.

(B) Massage increases premature babies’ curiosity about their environment, and curiosity leads to increased activity.

(C) Increased activity causes the intestines of premature babies to mature more quickly, enabling the babies to digest and absorb more of the nutrients in the milk they drink.

(D) Massage does not increase the growth rate of babies over one year old, if



the babies had not been previously massaged.

(E) Premature babies require a daily intake of nutrients that is significantly higher than that required by babies who were not born prematurely.

36. An eyeglass manufacturer tried to boost sales for the summer quarter by offering its distributors a special discount if their orders for that quarter exceeded those for last year's summer quarter by at least 20 percent. Many distributors qualified for this discount. Even with much merchandise discounted, sales increased enough to produce a healthy gain in net profits. The manufacturer plans to repeat this success by offering the same sort of discount for the fall quarter.

Which of the following, if true, most clearly points to a flaw in the manufacturer's plan to repeat the successful performance of the summer quarter?

(A) In general, a distributor's orders for the summer quarter are no higher than those for the spring quarter.

(B) Along with offering special discounts to qualifying distributors, the manufacturer increased newspaper and radio advertising in those distributors' sales areas.

(C) The distributors most likely to qualify for the manufacturer's special discount are those whose orders were unusually low a year earlier.

(D) The distributors who qualified for the manufacturer's special discount were free to decide how much of that discount to pass on to their own customers.

(E) The distributors' ordering more goods in the summer quarter left them overstocked for the fall quarter.

37. Vitacorp, a manufacturer, wishes to make its information booth at an industry convention more productive in terms of boosting sales. The booth offers information introducing the company's new products and services. To achieve the desired result, Vitacorp's marketing department will attempt to attract more people to the booth. The marketing director's first measure was to instruct each salesperson to call his or her five best customers and personally invite them to visit the booth.

Which of the following, if true, most strongly supports the prediction that the marketing director's first measure will contribute to meeting the goal of boosting sales?

(A) Vitacorp's salespeople routinely inform each important customer about new products and services as soon as the decision to launch them has been made.

(B) Many of Vitacorp's competitors have made plans for making their own information booths more productive in increasing sales.

(C) An information booth that is well attended tends to attract visitors who would not otherwise have attended the booth.

(D) Most of Vitacorp's best customers also have business dealings with Vitacorp's competitors.

(E) Vitacorp has fewer new products and services available this year than it had in previous years.

38. Budget constraints have made police officials consider reassigning a considerable number of officers from traffic enforcement to work on higher-priority, serious crimes. Reducing traffic enforcement for this reason would be counterproductive, however, in light of the tendency of criminals to use cars when engaged in the commission of serious crimes. An officer stopping a car for a traffic violation can make a search that turns up evidence of serious crime.

Which of the following, if true, most strengthens the argument given?

(A) An officer who stops a car containing evidence of the commission of a serious crime risks a violent confrontation, even if the vehicle was stopped only for a traffic violation.

(B) When the public becomes aware that traffic enforcement has lessened, it typically becomes lax in obeying traffic rules.

(C) Those willing to break the law to commit serious crimes are often in committing such crimes unwilling to observe what they regard as the lesser constraints of traffic law.

(D) The offenders committing serious crimes who would be caught because of traffic violations are not the same group of individuals as those who would be caught if the arresting officers were reassigned from traffic enforcement.

(E) The great majority of persons who are stopped by officers for traffic violations are not guilty of any serious crimes.

39. Pro-Tect Insurance Company has recently been paying out more on car-theft claims than it expected. Cars with special antitheft devices or alarm systems are much less likely to be stolen than are other cars. Consequently Pro-Tect, as part of an effort to reduce its annual payouts, will offer a discount to holders of car-theft policies if their cars have antitheft devices or alarm systems.

Which of the following, if true, provides the strongest indication that the plan is likely to achieve its goal?

(A) The decrease in the risk of car theft conferred by having a car alarm is greatest when only a few cars have such alarms.

(B) The number of policyholders who have filed a claim in the past year is higher for Pro-Tect than for other insurance companies.

(C) In one or two years, the discount that Pro-Tect is offering will amount to more than the cost of buying certain highly effective antitheft devices.

(D) Currently, Pro-Tect cannot legally raise the premiums it charges for a given amount of insurance against car theft.

(E) The amount Pro-Tect has been paying out on car-theft claims has been greater for some models of car than for others.

40. Start-up companies financed by venture capitalists have a much lower failure rate than companies financed by other means. Source of financing, therefore, must be a more important causative factor in the success of a start-up company than are such factors as the personal characteristics of the entrepreneur, the quality of strategic planning, or the management structure of the company.

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

(A) Venture capitalists tend to be more responsive than other sources of financing to changes in a start-up company's financial needs.

(B) The strategic planning of a start-up company is a less important factor in the long-term success of the company than are the personal characteristics of the entrepreneur.

(C) More than half of all new companies fail within five years.

(D) The management structures of start-up companies are generally less formal than the management structures of ongoing businesses.

(E) Venture capitalists base their decisions to fund start-up companies on such factors as the characteristics of the entrepreneur and quality of strategic planning of the company.

41. Art restorers who have been studying the factors that cause Renaissance oil paintings to deteriorate physically when subject to climatic changes have found that the oil paint used in these paintings actually adjusts to these changes well. The restorers therefore hypothesize that it is a layer of material called gesso, which is under the paint, that causes the deterioration.

Which of the following, if true, most strongly supports the restorers' hypothesis?

(A) Renaissance oil paintings with a thin layer of gesso are less likely to show deterioration in response to climatic changes than those with a thicker layer.

(B) Renaissance oil paintings are often painted on wooden panels, which swell when humidity increases and contract when it declines.

(C) Oil paint expands and contracts readily in response to changes in temperature, but it absorbs little water and so is little affected by changes in humidity.

(D) An especially hard and nonabsorbent type of gesso was the raw material for moldings on the frames of Renaissance oil paintings.

(E) Gesso layers applied by Renaissance painters typically consisted of a coarse base layer onto which several increasingly fine-grained layers were applied.

42. Automobile Dealer's Advertisement: The Highway Traffic Safety Institute reports that the PZ 1000 has the fewest injuries per accident of any car in its class. This shows that the PZ 1000 is one of the safest cars available today.

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

(A) The Highway Traffic Safety Institute report listed many cars in other classes that had more injuries per accident than did the PZ 1000.

(B) In recent years many more PZ 1000s have been sold than have any other kind of car in its class.

(C) Cars in the class to which the PZ 1000 belongs are more likely to be involved in accidents than are other types of cars.

(D) The difference between the number of injuries per accident for the PZ 1000 and that for other cars in its class is quite pronounced.

(E) The Highway Traffic Safety Institute issues reports only once a year.

43. Which of the following most logically completes the passage?

It is generally believed that people receiving frequent medical checkups are likely to need hospitalization less frequently than they would otherwise; after all, many things can be done following a checkup to prevent problems that, if ignored, might become acute and then require hospitalization. But for people with chronic illnesses, frequent medical checkups are likely to lead to more frequent hospitalization since \_\_\_\_\_.

(A) the recommended treatments for complications of many chronic illnesses involve hospitalization, even if those complications are detected while barely noticeable

(B) medical checkups sometimes do not reveal early symptoms of those chronic illnesses that are best treated in a hospital

(C) the average length of a hospital stay is the same for those who receive frequent checkups as for those who do not

(D) people with chronic illnesses generally receive medical checkups more frequently than people who are not chronically ill

(E) the average length of a hospital stay for people with a chronic illness tends to increase as the illness progresses

44. Two decades after the Emerald River Dam was built, none of the eight fish species native to the Emerald River was still reproducing adequately in the river below the dam. Since the dam reduced the annual range of water temperature in the river below the dam from 50 degrees to 6 degrees, scientists have hypothesized that sharply rising water temperatures must be involved in signaling the native species to begin the reproductive cycle.

Which of the following statements, if true, would most strengthen the scientists' hypothesis?

- (A) The native fish species were still able to reproduce only in side streams of the river below the dam where the annual temperature range remains approximately 50 degrees.
  - (B) Before the dam was built, the Emerald River annually overflowed its banks, creating backwaters that were critical breeding areas for the native species of fish.
  - (C) The lowest recorded temperature of the Emerald River before the dam was built was 34 degrees, whereas the lowest recorded temperature of the river after the dam was built has been 43 degrees.
  - (D) Nonnative species of fish, introduced into the Emerald River after the dam was built, have begun competing with the declining native fish species for food and space.
  - (E) Five of the fish species native to the Emerald River are not native to any other river in North America.
45. Dental researchers recently discovered that toothbrushes can become contaminated with bacteria that cause pneumonia and strep throat. They found that contamination usually occurs after toothbrushes have been used for four weeks. For that reason, people should replace their toothbrushes at least once a month.

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

- (A) The dental researchers could not discover why toothbrush contamination usually occurred only after toothbrushes had been used for four weeks.
- (B) The dental researchers failed to investigate contamination of toothbrushes by viruses, yeasts, and other pathogenic microorganisms.
- (C) The dental researchers found that among people who used toothbrushes contaminated with bacteria that cause pneumonia and strep throat, the incidence of these diseases was no higher than among people who used uncontaminated toothbrushes.
- (D) The dental researchers found that people who rinsed their toothbrushes

thoroughly in hot water after each use were as likely to have contaminated toothbrushes as were people who only rinsed their toothbrushes hurriedly in cold water after each use.

(E) The dental researchers found that, after six weeks of use, greater length of use of a toothbrush did not correlate with a higher number of bacteria being present.

46. Meat from chickens contaminated with salmonella bacteria can cause serious food poisoning. Capsaicin, the chemical that gives chili peppers their hot flavor, has antibacterial properties. Chickens do not have taste receptors for capsaicin and will readily eat feed laced with capsaicin. When chickens were fed such feed and then exposed to salmonella bacteria, relatively few of them became contaminated with salmonella.

In deciding whether the feed would be useful in raising salmonella-free chicken for retail sale, it would be most helpful to determine which of the following?

- (A) Whether feeding capsaicin to chickens affects the taste of their meat
- (B) Whether eating capsaicin reduces the risk of salmonella poisoning for humans
- (C) Whether chicken is more prone to salmonella contamination than other kinds of meat
- (D) Whether appropriate cooking of chicken contaminated with salmonella can always prevent food poisoning
- (E) Whether capsaicin can be obtained only from chili peppers

47. Laws requiring the use of headlights during daylight hours can prevent automobile collisions. However, since daylight visibility is worse in countries farther from the equator, any such laws would obviously be more effective in preventing collisions in those countries. In fact, the only countries that actually have such laws are farther from the equator than is the continental United States.

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

- (A) Drivers in the continental United States who used their headlights during the day would be just as likely to become involved in a collision as would drivers who did not use their headlights.
- (B) In many countries that are farther from the equator than is the continental United States, poor daylight visibility is the single most important factor in automobile collisions.
- (C) The proportion of automobile collisions that occur in the daytime is greater in the continental United States than in the countries that have daytime headlight laws.

(D) Fewer automobile collisions probably occur each year in countries that have daytime headlight laws than occur within the continental United States.

(E) Daytime headlight laws would probably do less to prevent automobile collisions in the continental United States than they do in the countries that have the laws.

48. In the past most airline companies minimized aircraft weight to minimize fuel costs. The safest airline seats were heavy, and airlines equipped their planes with few of these seats. This year the seat that has sold best to airlines has been the safest one—a clear indication that airlines are assigning a higher priority to safe seating than to minimizing fuel costs.

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

(A) Last year's best-selling airline seat was not the safest airline seat on the market.

(B) No airline company has announced that it would be making safe seating a higher priority this year.

(C) The price of fuel was higher this year than it had been in most of the years when the safest airline seats sold poorly.

(D) Because of increases in the cost of materials, all airline seats were more expensive to manufacture this year than in any previous year.

(E) Because of technological innovations, the safest airline seat on the market this year weighed less than most other airline seats on the market.

49. Division manager: I want to replace the Microton computers in my division with Vitech computers.

General manager: Why?

Division manager: It costs 28 percent less to train new staff on the Vitech.

General manager: But that is not a good enough reason. We can simply hire only people who already know how to use the Microton computer.

Which of the following, if true, most seriously undermines the general manager's objection to the replacement of Microton computers with Vitechs?

(A) Currently all employees in the company are required to attend workshops on how to use Microton computers in new applications.

(B) Once employees learn how to use a computer, they tend to change employers more readily than before.

(C) Experienced users of Microton computers command much higher salaries than do prospective employees who have no experience in the use of

computers.

(D) The average productivity of employees in the general manager's company is below the average productivity of employees of its competitors.

(E) The high costs of replacement parts make Vitech computers more expensive to maintain than Microton computers.

50. Which of the following most logically completes the argument below?

When mercury-vapor streetlights are used in areas inhabited by insect-eating bats, the bats feed almost exclusively around the lights, because the lights attract flying insects. In Greenville, the mercury-vapor streetlights are about to be replaced with energy-saving sodium streetlights, which do not attract insects. This change is likely to result in a drop in the population of insect-eating bats in Greenville, since \_\_\_\_\_.

(A) the bats do not begin to hunt until after sundown

(B) the bats are unlikely to feed on insects that do not fly

(C) the highway department will be able to replace mercury-vapor streetlights with sodium streetlights within a relatively short time and without disrupting the continuity of lighting at the locations of the streetlights

(D) in the absence of local concentrations of the flying insects on which bats feed, the bats expend much more energy on hunting for food, requiring much larger quantities of insects to sustain each bat

(E) bats use echolocation to catch insects and therefore gain no advantage from the fact that insects flying in the vicinity of streetlights are visible at night

51. There is a great deal of geographical variation in the frequency of many surgical procedures—up to tenfold variation per hundred thousand people between different areas in the numbers of hysterectomies, prostatectomies, and tonsillectomies.

To support a conclusion that much of the variation is due to unnecessary surgical procedures, it would be most important to establish which of the following?

(A) A local board of review at each hospital examines the records of every operation to determine whether the surgical procedure was necessary.

(B) The variation is unrelated to factors (other than the surgical procedures themselves) that influence the incidence of diseases for which surgery might be considered.

(C) There are several categories of surgical procedure (other than hysterectomies, prostatectomies, and tonsillectomies) that are often



performed unnecessarily.

(D) For certain surgical procedures, it is difficult to determine after the operation whether the procedures were necessary or whether alternative treatment would have succeeded.

(E) With respect to how often they are performed unnecessarily, hysterectomies, prostatectomies, and tonsillectomies are representative of surgical procedures in general.

52. Rats injected with morphine exhibit decreased activity of the immune system, the bodily system that fights off infections. These same rats exhibited heightened blood levels of corticosteroids, chemicals secreted by the adrenal glands. Since corticosteroids can interfere with immune-system activity, scientists hypothesized that the way morphine reduces immune responses in rats is by stimulating the adrenal glands to secrete additional corticosteroids into the bloodstream.

Which of the following experiments would yield the most useful results for evaluating the scientists' hypothesis?

(A) Injecting morphine into rats that already have heightened blood levels of corticosteroids and then observing their new blood levels of corticosteroids

(B) Testing the level of immune-system activity of rats, removing their adrenal glands, and then testing the rats' immune-system activity levels again

(C) Injecting rats with corticosteroids and then observing how many of the rats contracted infections

(D) Removing the adrenal glands of rats, injecting the rats with morphine, and then testing the level of the rats' immune-system responses

(E) Injecting rats with a drug that stimulates immune-system activity and then observing the level of corticosteroids in their bloodstreams

53. Curator: If our museum lends *Venus* to the Hart Institute for their show this spring, they will lend us their Rembrandt etchings for our print exhibition next fall. Having those etchings will increase attendance to the exhibition and hence increase revenue from our general admission fee.

Museum Administrator: But *Venus* is our biggest attraction. Moreover the Hart's show will run for twice as long as our exhibition. So on balance the number of patrons may decrease.

The point of the administrator's response to the curator is to question

(A) whether getting the Rembrandt etchings from the Hart Institute is likely to increase attendance at the print exhibition

(B) whether the Hart Institute's Rembrandt etchings will be appreciated by those patrons of the curator's museum for whom the museum's biggest attraction is *Venus*

(C) whether the number of patrons attracted by the Hart Institute's Rembrandt etchings will be larger than the number of patrons who do not come in the spring because *Venus* is on loan

(D) whether, if *Venus* is lent, the museum's revenue from general admission fees during the print exhibition will exceed its revenue from general admission fees during the Hart Institute's exhibition

(E) whether the Hart Institute or the curator's museum will have the greater financial gain from the proposed exchange of artworks

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

At a recent conference on environmental threats to the North Sea, most participating countries favored uniform controls on the quality of effluents, whether or not specific environmental damage could be attributed to a particular source of effluent. What must, of course, be shown, in order to avoid excessively restrictive controls, is that \_\_\_\_\_.

(A) any uniform controls that are adopted are likely to be implemented without delay

(B) any substance to be made subject to controls can actually cause environmental damage

(C) the countries favoring uniform controls are those generating the largest quantities of effluents

(D) all of any given pollutant that is to be controlled actually reaches the North Sea at present

(E) environmental damage already inflicted on the North Sea is reversible

55. On May first, in order to reduce the number of overdue books, a children's library instituted a policy of forgiving fines and giving bookmarks to children returning all of their overdue books. On July first there were twice as many overdue books as there had been on May first, although a record number of books had been returned during the interim.

Which of the following, if true, most helps to explain the apparent inconsistency in the results of the library's policy?

(A) The librarians did not keep accurate records of how many children took advantage of the grace period, and some of the children returning overdue books did not return all of their overdue books.

(B) Although the grace period enticed some children to return all of their

overdue books, it did not convince all of the children with overdue books to return all of their books.

(C) The bookmarks became popular among the children, so in order to collect the bookmarks, many children borrowed many more books than they usually did and kept them past their due date.

(D) The children were allowed to borrow a maximum of five books for a two-week period, and hence each child could keep a maximum of fifteen books beyond their due date within a two-month period.

(E) Although the library forgave overdue fines during the grace period, the amount previously charged the children was minimal; hence, the forgiveness of the fines did not provide enough incentive for them to return their overdue books.

56. Often patients with ankle fractures that are stable, and thus do not require surgery, are given follow-up x-rays because their orthopedists are concerned about possibly having misjudged the stability of the fracture. When a number of follow-up x-rays were reviewed, however, all the fractures that had initially been judged stable were found to have healed correctly. Therefore, it is a waste of money to order follow-up x-rays of ankle fractures initially judged stable.

Which of the following, if true, most strengthens the argument?

(A) Doctors who are general practitioners rather than orthopedists are less likely than orthopedists to judge the stability of an ankle fracture correctly.

(B) Many ankle injuries for which an initial x-ray is ordered are revealed by the x-ray not to involve any fracture of the ankle.

(C) X-rays of patients of many different orthopedists working in several hospitals were reviewed.

(D) The healing of ankle fractures that have been surgically repaired is always checked by means of a follow-up x-ray.

(E) Orthopedists routinely order follow-up x-rays for fractures of bones other than ankle bones.

57. Traditionally, decision making by managers that is reasoned step-by-step has been considered preferable to intuitive decision making. However, a recent study found that top managers used intuition significantly more than did most middle- or lower-level managers. This confirms the alternative view that intuition is actually more effective than careful, methodical reasoning.

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

(A) Methodical, step-by-step reasoning is inappropriate for making many real-life management decisions.

- (B) Top managers have the ability to use either intuitive reasoning or methodical, step-by-step reasoning in making decisions.
- (C) The decisions made by middle- and lower-level managers can be made as easily by using methodical reasoning as by using intuitive reasoning.
- (D) Top managers use intuitive reasoning in making the majority of their decisions.
- (E) Top managers are more effective at decision making than middle- or lower-level managers.

58. A company plans to develop a prototype weeding machine that uses cutting blades with optical sensors and microprocessors that distinguish weeds from crop plants by differences in shade of color. The inventor of the machine claims that it will reduce labor costs by virtually eliminating the need for manual weeding.

Which of the following is a consideration in favor of the company's implementing its plan to develop the prototype?

- (A) There is a considerable degree of variation in shade of color between weeds of different species.
- (B) The shade of color of some plants tends to change appreciably over the course of their growing season.
- (C) When crops are weeded manually, overall size and leaf shape are taken into account in distinguishing crop plants from weeds.
- (D) Selection and genetic manipulation allow plants of virtually any species to be economically bred to have a distinctive shade of color without altering their other characteristics.
- (E) Farm laborers who are responsible for the manual weeding of crops carry out other agricultural duties at times in the growing season when extensive weeding is not necessary.

59. A certain mayor has proposed a fee of five dollars per day on private vehicles entering the city, claiming that the fee will alleviate the city's traffic congestion. The mayor reasons that, since the fee will exceed the cost of round-trip bus fare from many nearby points, many people will switch from using their cars to using the bus.

Which of the following statements, if true, provides the best evidence that the mayor's reasoning is flawed?

- (A) Projected increases in the price of gasoline will increase the cost of taking a private vehicle into the city.
- (B) The cost of parking fees already makes it considerably more expensive for most people to take a private vehicle into the city than to take a bus.

- (C) Most of the people currently riding the bus do not own private vehicles.
- (D) Many commuters opposing the mayor's plan have indicated that they would rather endure traffic congestion than pay a five-dollar-per-day fee.
- (E) During the average workday, private vehicles owned and operated by people living within the city account for 20 percent of the city's traffic congestion.

60. Aroca City currently funds its public schools through taxes on property. **In place of this system, the city plans to introduce a sales tax of three percent on all retail sales in the city.** Critics protest that three percent of current retail sales falls short of the amount raised for schools by property taxes. The critics are correct on this point. **Nevertheless, implementing the plan will probably not reduce the money going to Aroca's schools.** Several large retailers have selected Aroca City as the site for huge new stores, and these are certain to draw large numbers of shoppers from neighboring municipalities, where sales are taxed at rates of six percent and more. In consequence, retail sales in Aroca City are bound to increase substantially.

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

- (A) The first presents a plan that the argument concludes is unlikely to achieve its goal; the second expresses that conclusion.
- (B) The first presents a plan that the argument concludes is unlikely to achieve its goal; the second presents evidence in support of that conclusion.
- (C) The first presents a plan that the argument contends is the best available; the second is a conclusion drawn by the argument to justify that contention.
- (D) The first presents a plan one of whose consequences is at issue in the argument; the second is the argument's conclusion about that consequence.
- (E) The first presents a plan that the argument seeks to defend against a certain criticism; the second is that criticism.

61. Tanco, a leather manufacturer, uses large quantities of common salt to preserve animal hides. New environmental regulations have significantly increased the cost of disposing of salt water that results from this use, and, in consequence, Tanco is considering a plan to use potassium chloride in place of common salt. Research has shown that Tanco could reprocess the by-product of potassium chloride use to yield a crop fertilizer, leaving a relatively small volume of waste for disposal.

In determining the impact on company profits of using potassium chloride in place of common salt, it would be important for Tanco to research all of the following EXCEPT:

- (A) What difference, if any, is there between the cost of the common salt needed to preserve a given quantity of animal hides and the cost of the potassium chloride needed to preserve the same quantity of hides?
- (B) To what extent is the equipment involved in preserving animal hides using common salt suitable for preserving animal hides using potassium chloride?
- (C) What environmental regulations, if any, constrain the disposal of the waste generated in reprocessing the by-product of potassium chloride?
- (D) How closely does leather that results when common salt is used to preserve hides resemble that which results when potassium chloride is used?
- (E) Are the chemical properties that make potassium chloride an effective means for preserving animal hides the same as those that make common salt an effective means for doing so?

62. Colorless diamonds can command high prices as gemstones. A type of less valuable diamonds can be treated to remove all color. Only sophisticated tests can distinguish such treated diamonds from naturally colorless ones. However, only 2 percent of diamonds mined are of the colored type that can be successfully treated, and many of those are of insufficient quality to make the treatment worthwhile. Surely, therefore, the vast majority of colorless diamonds sold by jewelers are naturally colorless.

A serious flaw in the reasoning of the argument is that

- (A) comparisons between the price diamonds command as gemstones and their value for other uses are omitted
- (B) information about the rarity of treated diamonds is not combined with information about the rarity of naturally colorless, gemstone diamonds
- (C) the possibility that colored diamonds might be used as gemstones, even without having been treated, is ignored
- (D) the currently available method for making colorless diamonds from colored ones is treated as though it were the only possible method for doing so
- (E) the difficulty that a customer of a jeweler would have in distinguishing a naturally colorless diamond from a treated one is not taken into account

63. Boreal owls range over a much larger area than do other owls of similar size. The reason for this behavior is probably that the small mammals on which owls feed are especially scarce in the forests where boreal owls live, and the relative scarcity of prey requires the owls to range more extensively to find sufficient food.

Which of the following, if true, most helps to confirm the explanation above?

- (A) Some boreal owls range over an area eight times larger than the area over which any other owl of similar size ranges.
- (B) Boreal owls range over larger areas in regions where food of the sort eaten by small mammals is sparse than they do in regions where such food is abundant.
- (C) After their young hatch, boreal owls must hunt more often than before in order to feed both themselves and their newly hatched young.
- (D) Sometimes individual boreal owls hunt near a single location for many weeks at a time and do not range farther than a few hundred yards.
- (E) The boreal owl requires less food, relative to its weight, than is required by members of other owl species.

64. Historian: Newton developed mathematical concepts and techniques that are fundamental to modern calculus. Leibniz developed closely analogous concepts and techniques. It has traditionally been thought that these discoveries were independent. Researchers have, however, recently discovered notes of Leibniz's that discuss one of Newton's books on mathematics. Several scholars have argued that since **the book includes a presentation of Newton's calculus concepts and techniques**, and since the notes were written before Leibniz's own development of calculus concepts and techniques, it is virtually certain that **the traditional view is false**. A more cautious conclusion than this is called for, however. Leibniz's notes are limited to early sections of Newton's book, sections that precede the ones in which Newton's calculus concepts and techniques are presented.

In the historian's reasoning, the two portions in **boldface** play which of the following roles?

- (A) The first is a claim that the historian rejects; the second is a position that that claim has been used to support.
  - (B) The first is evidence that has been used to support a conclusion about which the historian expresses reservations; the second is that conclusion.
  - (C) The first provides evidence in support of a position that the historian defends; the second is that position.
  - (D) The first and the second each provide evidence in support of a position that the historian defends.
  - (E) The first has been used in support of a position that the historian rejects; the second is a conclusion that the historian draws from that position.
65. Meteorite explosions in the Earth's atmosphere as large as the one that destroyed forests in Siberia, with approximately the force of a twelve-megaton nuclear blast,

occur about once a century. The response of highly automated systems controlled by complex computer programs to unexpected circumstances is unpredictable.

Which of the following conclusions can most properly be drawn, if the statements above are true, about a highly automated nuclear-missile defense system controlled by a complex computer program?

- (A) Within a century after its construction, the system would react inappropriately and might accidentally start a nuclear war.
- (B) The system would be destroyed if an explosion of a large meteorite occurred in the Earth's atmosphere.
- (C) It would be impossible for the system to distinguish the explosion of a large meteorite from the explosion of a nuclear weapon.
- (D) Whether the system would respond inappropriately to the explosion of a large meteorite would depend on the location of the blast.
- (E) It is not certain what the system's response to the explosion of a large meteorite would be, if its designers did not plan for such a contingency.

66. A milepost on the towpath read "21" on the side facing the hiker as she approached it and "23" on its back. She reasoned that the next milepost forward on the path would indicate that she was halfway between one end of the path and the other. However, the milepost one mile further on read "20" facing her and "24" behind.

Which of the following, if true, would explain the discrepancy described above?

- (A) The numbers on the next milepost had been reversed.
- (B) The numbers on the mileposts indicate kilometers, not miles.
- (C) The facing numbers indicate miles to the end of the path, not miles from the beginning.
- (D) A milepost was missing between the two the hiker encountered.
- (E) The mileposts had originally been put in place for the use of mountain bikers, not for hikers.

67. For over two centuries, no one had been able to make Damascus blades—blades with a distinctive serpentine surface pattern—but a contemporary sword maker may just have rediscovered how. Using iron with trace impurities that precisely matched those present in the iron used in historic Damascus blades, this contemporary sword maker seems to have finally hit on an intricate process by which he can produce a blade indistinguishable from a true Damascus blade.

Which of the following, if true, provides the strongest support for the hypothesis that trace impurities in the iron are essential for the production of Damascus blades?



(A) There are surface features of every Damascus blade—including the blades produced by the contemporary sword maker—that are unique to that blade.

(B) The iron with which the contemporary sword maker made Damascus blades came from a source of iron that was unknown two centuries ago.

(C) Almost all the tools used by the contemporary sword maker were updated versions of tools that were used by sword makers over two centuries ago.

(D) Production of Damascus blades by sword makers of the past ceased abruptly after those sword makers' original source of iron became exhausted.

(E) Although Damascus blades were renowned for maintaining a sharp edge, the blade made by the contemporary sword maker suggests that they may have maintained their edge less well than blades made using what is now the standard process for making blades.

68. Images from ground-based telescopes are invariably distorted by the Earth's atmosphere. Orbiting space telescopes, however, operating above Earth's atmosphere, should provide superbly detailed images. Therefore, ground-based telescopes will soon become obsolete for advanced astronomical research purposes.

Which of the following statements, if true, would cast the most doubt on the conclusion drawn above?

(A) An orbiting space telescope due to be launched this year is far behind schedule and over budget, whereas the largest ground-based telescope was both within budget and on schedule.

(B) Ground-based telescopes located on mountain summits are not subject to the kinds of atmospheric distortion which, at low altitudes, make stars appear to twinkle.

(C) By careful choice of observatory location, it is possible for large-aperture telescopes to avoid most of the kind of wind turbulence that can distort image quality.

(D) When large-aperture telescopes are located at high altitudes near the equator, they permit the best Earth-based observations of the center of the Milky Way Galaxy, a prime target of astronomical research.

(E) Detailed spectral analyses, upon which astronomers rely for determining the chemical composition and evolutionary history of stars, require telescopes with more light-gathering capacity than space telescopes can provide.

69. Generally scientists enter their field with the goal of doing important new research and accept as their colleagues those with similar motivation. Therefore, when any scientist wins renown as an expounder of science to general audiences, most other scientists conclude that this popularizer should no longer be regarded as a true colleague.

The explanation offered above for the low esteem in which scientific popularizers are held by research scientists assumes that

- (A) serious scientific research is not a solitary activity, but relies on active cooperation among a group of colleagues
  - (B) research scientists tend not to regard as colleagues those scientists whose renown they envy
  - (C) a scientist can become a famous popularizer without having completed any important research
  - (D) research scientists believe that those who are well known as popularizers of science are not motivated to do important new research
  - (E) no important new research can be accessible to or accurately assessed by those who are not themselves scientists
70. Which of the following most logically completes the argument?

Utrania was formerly a major petroleum exporter, but in recent decades economic stagnation and restrictive regulations inhibited investment in new oil fields. In consequence, Utranian oil exports dropped steadily as old fields became depleted. Utrania's currently improving economic situation, together with less restrictive regulations, will undoubtedly result in the rapid development of new fields. However, it would be premature to conclude that the rapid development of new fields will result in higher oil exports, because \_\_\_\_\_.

- (A) the price of oil is expected to remain relatively stable over the next several years
- (B) the improvement in the economic situation in Utrania is expected to result in a dramatic increase in the proportion of Utranians who own automobiles
- (C) most of the investment in new oil fields in Utrania is expected to come from foreign sources
- (D) new technology is available to recover oil from old oil fields formerly regarded as depleted
- (E) many of the new oil fields in Utrania are likely to be as productive as those that were developed during the period when Utrania was a major oil exporter

71. Which of the following, if true, most logically completes the argument?

Some dairy farmers in the province of Takandia want to give their cows a synthetic hormone that increases milk production. Many Takandians, however, do not want to buy milk from cows given the synthetic hormone. For this reason Takandia's legislature is considering a measure requiring milk from cows given the hormone to be labeled as such. Even if the measure is defeated, dairy farmers who use the hormone will probably lose customers, since \_\_\_\_\_.

- (A) it has not been proven that any trace of the synthetic hormone exists in the milk of cows given the hormone
- (B) some farmers in Takandia who plan to use the synthetic hormone will probably not do so if the measure were passed
- (C) milk from cows that have not been given the synthetic hormone can be labeled as such without any legislative action
- (D) the legislature's consideration of the bill has been widely publicized
- (E) milk that comes from cows given the synthetic hormone looks and tastes the same as milk from cows that have not received the hormone

72. In order to reduce dependence on imported oil, the government of Jalica has imposed minimum fuel-efficiency requirements on all new cars, beginning this year. The more fuel-efficient a car, the less pollution it produces per mile driven. As Jalicans replace their old cars with cars that meet the new requirements, annual pollution from car traffic is likely to decrease in Jalica.

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

- (A) In Jalica, domestically produced oil is more expensive than imported oil.
- (B) The Jalican government did not intend the new fuel-efficiency requirement to be a pollution-reduction measure.
- (C) Some pollution-control devices mandated in Jalica make cars less fuel-efficient than they would be without those devices.
- (D) The new regulation requires no change in the chemical formulation of fuel for cars in Jalica.
- (E) Jalicans who get cars that are more fuel-efficient tend to do more driving than before.

73. Plantings of cotton bioengineered to produce its own insecticide against bollworms, a major cause of crop failure, sustained little bollworm damage until this year. This year the plantings are being seriously damaged by bollworms. Bollworms, however, are not necessarily developing resistance to the cotton's insecticide. Bollworms breed on corn, and last year more corn than usual was planted throughout cotton-growing regions. So it is likely that the cotton is simply

being overwhelmed by corn-bred bollworms.

In evaluating the argument, which of the following would it be most useful to establish?

- (A) Whether corn could be bioengineered to produce the insecticide
- (B) Whether plantings of cotton that does not produce the insecticide are suffering unusually extensive damage from bollworms this year
- (C) Whether other crops that have been bioengineered to produce their own insecticide successfully resist the pests against which the insecticide was to protect them
- (D) Whether plantings of bioengineered cotton are frequently damaged by insect pests other than bollworms
- (E) Whether there are insecticides that can be used against bollworms that have developed resistance to the insecticide produced by the bioengineered cotton

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

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

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

75. Many gardeners believe that the variety of clematis vine that is most popular

among gardeners in North America is *jackmanii*. This belief is apparently correct since, of the one million clematis plants sold per year by the largest clematis nursery in North America, ten percent are *jackmanii*.

Which of the following is an assumption on which the argument depends?

- (A) The nursery sells more than ten different varieties of clematis.
  - (B) The largest clematis nursery in North America sells nothing but clematis plants.
  - (C) Some of the *jackmanii* sold by the nursery are sold to gardeners outside North America.
  - (D) Most North American gardeners grow clematis in their gardens.
  - (E) For all nurseries in North America that specialize in clematis, at least ten percent of the clematis plants they sell are *jackmanii*.
76. A compelling optical illusion called the illusion of velocity and size makes objects appear to be moving more slowly the larger the objects are. Therefore, a motorist's estimate of the time available for crossing a highway with a small car approaching is bound to be lower than it would be with a large truck approaching.
- The conclusion above would be more properly drawn if it were made clear that the
- (A) truck's speed is assumed to be lower than the car's
  - (B) truck's speed is assumed to be the same as the car's
  - (C) truck's speed is assumed to be higher than the car's
  - (D) motorist's estimate of time available is assumed to be more accurate with cars approaching than with trucks approaching
  - (E) motorist's estimate of time available is assumed to be more accurate with trucks approaching than with cars approaching
77. Country Y uses its scarce foreign-exchange reserves to buy scrap iron for recycling into steel. Although the steel thus produced earns more foreign exchange than it costs, that policy is foolish. Country Y's own territory has vast deposits of iron ore, which can be mined with minimal expenditure of foreign exchange.

Which of the following, if true, provides the strongest support for Country Y's policy of buying scrap iron abroad?

- (A) The price of scrap iron on international markets rose significantly in 1987.
- (B) Country Y's foreign-exchange reserves dropped significantly in 1987.
- (C) There is virtually no difference in quality between steel produced from scrap iron and that produced from iron ore.

(D) Scrap iron is now used in the production of roughly half the steel used in the world today, and experts predict that scrap iron will be used even more extensively in the future.

(E) Furnaces that process scrap iron can be built and operated in Country Y with substantially less foreign exchange than can furnaces that process iron ore.

78. Since 1990 the percentage of bacterial sinus infections in Aqadestan that are resistant to the antibiotic perxicillin has increased substantially. Bacteria can quickly develop resistance to an antibiotic when it is prescribed indiscriminately or when patients fail to take it as prescribed. Since perxicillin has not been indiscriminately prescribed, health officials hypothesize that the increase in perxicillin-resistant sinus infections is largely due to patients' failure to take this medication as prescribed.

Which of the following, if true of Aqadestan, provides most support for the health officials' hypothesis?

(A) Resistance to several other commonly prescribed antibiotics has not increased since 1990 in Aqadestan.

(B) A large number of Aqadestanis never seek medical help when they have a sinus infection.

(C) When it first became available, perxicillin was much more effective in treating bacterial sinus infections than any other antibiotic used for such infections at the time.

(D) Many patients who take perxicillin experience severe side effects within the first few days of their prescribed regimen.

(E) Aqadestani health clinics provide antibiotics to their patients at cost.

79. A product that represents a clear technological advance over competing products can generally command a high price. Because **technological advances tend to be quickly surpassed** and companies want to make large profits while they still can, **many companies charge the maximum possible price for such a product**. But large profits on the new product will give competitors a strong incentive to quickly match the new product's capabilities. Consequently, the strategy to maximize overall profit from a new product is to charge less than the greatest possible price.

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

(A) The first is a consideration raised to argue that a certain strategy is counterproductive; the second presents that strategy.

(B) The first is a consideration raised to support the strategy that the

argument recommends; the second presents that strategy.

(C) The first is a consideration raised to help explain the popularity of a certain strategy; the second presents that strategy.

(D) The first is an assumption, rejected by the argument, that has been used to justify a course of action; the second presents that course of action.

(E) The first is a consideration that has been used to justify adopting a certain strategy; the second presents the intended outcome of that strategy.

80. Gortland has long been narrowly self-sufficient in both grain and meat. However, as per capita income in Gortland has risen toward the world average, per capita consumption of meat has also risen toward the world average, and it takes several pounds of grain to produce one pound of meat. Therefore, since per capita income continues to rise, whereas domestic grain production will not increase, Gortland will soon have to import either grain or meat or both.

Which of the following is an assumption on which the argument depends?

(A) The total acreage devoted to grain production in Gortland will not decrease substantially.

(B) The population of Gortland has remained relatively constant during the country's years of growing prosperity.

(C) The per capita consumption of meat in Gortland is roughly the same across all income levels.

(D) In Gortland, neither meat nor grain is subject to government price controls.

(E) People in Gortland who increase their consumption of meat will not radically decrease their consumption of grain.

81. Which of the following most logically completes the passage?

The figures in portraits by the Spanish painter El Greco (1541–1614) are systematically elongated. In El Greco's time, the intentional distortion of human figures was unprecedented in European painting. Consequently, some critics have suggested that El Greco had an astigmatism, a type of visual impairment, that resulted in people appearing to him in the distorted way that is characteristic of his paintings. However, this suggestion cannot be the explanation, because \_\_\_\_\_.

(A) several twentieth-century artists have consciously adopted from El Greco's paintings the systematic elongation of the human form

(B) some people do have elongated bodies somewhat like those depicted in El Greco's portraits

(C) if El Greco had an astigmatism, then, relative to how people looked to him, the elongated figures in his paintings would have appeared to him to be

distorted

(D) even if El Greco had an astigmatism, there would have been no correction for it available in the period in which he lived

(E) there were non-European artists, even in El Greco's time, who included in their works human figures that were intentionally distorted

82. Political Advertisement:

Mayor Delmont's critics complain about the jobs that were lost in the city under Delmont's leadership. Yet the fact is that not only were more jobs created than were eliminated, but each year since Delmont took office the average pay for the new jobs created has been higher than that year's average pay for jobs citywide. So it stands to reason that throughout Delmont's tenure the average paycheck in this city has been getting steadily bigger.

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

(A) The unemployment rate in the city is higher today than it was when Mayor Delmont took office.

(B) The average pay for jobs in the city was at a ten-year low when Mayor Delmont took office.

(C) Each year during Mayor Delmont's tenure, the average pay for jobs that were eliminated has been higher than the average pay for jobs citywide.

(D) Most of the jobs eliminated during Mayor Delmont's tenure were in declining industries.

(E) The average pay for jobs in the city is currently lower than it is for jobs in the suburbs surrounding the city.

83. To prevent a newly built dam on the Chiff River from blocking the route of fish migrating to breeding grounds upstream, the dam includes a fish pass, a mechanism designed to allow fish through the dam. Before the construction of the dam and fish pass, several thousand fish a day swam upriver during spawning season. But in the first season after the project's completion, only 300 per day made the journey. Clearly, the fish pass is defective.

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

(A) Fish that have migrated to the upstream breeding grounds do not return down the Chiff River again.

(B) On other rivers in the region, the construction of dams with fish passes has led to only small decreases in the number of fish migrating upstream.

(C) The construction of the dam stirred up potentially toxic river sediments that were carried downstream.



(D) Populations of migratory fish in the Chiff River have been declining slightly over the last 20 years.

(E) During spawning season, the dam releases sufficient water for migratory fish below the dam to swim upstream.

## 4.5 Answer Key

1. B
2. B
3. A
4. B
5. D
6. C
7. D
8. E
9. B
10. C
11. A
12. B
13. A
14. C
15. A
16. D
17. C
18. C
19. A
20. A
21. D
22. D
23. C
24. B
25. B
26. B
27. E
28. A
29. B

30. A
31. C
32. C
33. A
34. B
35. C
36. E
37. C
38. C
39. C
40. E
41. A
42. C
43. A
44. A
45. C
46. A
47. E
48. E
49. C
50. D
51. B
52. D
53. C
54. B
55. C
56. C
57. E
58. D
59. B
60. D

51. E
52. B
53. B
54. B
55. E
56. C
57. D
58. E
59. D
60. B
61. C
62. E
63. B
64. D
65. A
66. B
67. E
68. D
69. C
70. E
71. C
72. C
73. C

4.6 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. The sustained massive use of pesticides in farming has two effects that are especially pernicious. First, it often kills off the pests’ natural enemies in the area. Second, it often unintentionally gives rise to insecticide-resistant pests, since those insects that survive a particular insecticide will be the ones most resistant to it, and they are the ones left to breed.

From the passage above, it can be properly inferred that the effectiveness of the sustained massive use of pesticides can be extended by doing which of the following, assuming that each is a realistic possibility?

- (A) Using only chemically stable insecticides
- (B) Periodically switching the type of insecticide used
- (C) Gradually increasing the quantities of pesticides used
- (D) Leaving a few fields fallow every year
- (E) Breeding higher-yielding varieties of crop plants

Evaluation of a Plan

Situation	Continued high-level pesticide use often kills off the targeted pests’ natural enemies. In addition, the pests that survive the application of the pesticide may become resistant to it, and these pesticide-resistant pests will continue breeding.
Reasoning	<i>What can be done to prolong the effectiveness of pesticide use?</i> It can be inferred that the ongoing use of a particular pesticide will not continue to be effective against the future generations of pests with an inherent resistance to that pesticide. What would be effective against these future generations? If farmers periodically change the particular pesticide they use, then pests resistant to one kind of pesticide might be killed by another. This would continue, with pests being killed off in cycles as the pesticides are changed. It is also possible that this rotation might allow some of the pests’ natural enemies to survive, at least until the next cycle.

A Not enough information about chemically stable insecticides is given to make a sound inference.

- B Correct.** This statement properly identifies an action that could extend the effectiveness of pesticide use.
- C Gradually increasing the amount of the pesticides being used will not help the situation since the pests are already resistant to it.
- D Continued use of pesticides is assumed as part of the argument. Since pesticides would be unnecessary for fallow fields, this suggestion is irrelevant.
- E Breeding higher-yielding varieties of crops does nothing to extend the effectiveness of the use of pesticides.

**The correct answer is B.**

2. Which of the following, if true, most logically completes the argument below?

- Manufacturers are now required to make all cigarette lighters child-resistant by equipping them with safety levers. But this change is unlikely to result in a significant reduction in the number of fires caused by children playing with lighters, because children given the opportunity can figure out how to work the safety levers and \_\_\_\_\_.
- (A) the addition of the safety levers has made lighters more expensive than they were before the requirement was instituted
- (B) adults are more likely to leave child-resistant lighters than non-child-resistant lighters in places that are accessible to children
- (C) many of the fires started by young children are quickly detected and extinguished by their parents
- (D) unlike child-resistant lighters, lighters that are not child-resistant can be operated by children as young as two years old
- (E) approximately 5,000 fires per year have been attributed to children playing with lighters before the safety levers were required.

**Argument Construction**

<b>Situation</b>	Manufacturers must equip all cigarette lighters with child-resistant safety levers, but children can figure out how to circumvent the safety levers and thereby often start fires.
<b>Reasoning</b>	<i>What point would most logically complete the argument? What would make it likely that the number of fires caused by children playing with lighters would remain the same? In order for children to start fires using lighters equipped with safety levers, they must be given the opportunity to figure out how the safety levers work and then to use them. They must, that is, have access to the lighters.</i>

A If safety-lever-equipped lighters are more expensive than lighters that are

not so equipped, fewer lighters might be sold. This would most likely afford children less access to lighters, thus giving them less opportunity to start fires with them.

**B Correct.** This statement properly identifies a point that logically completes the argument: it explains why children are likely to have access to lighters equipped with safety levers.

C The speed with which fires are extinguished does not have any bearing on the number of fires that are started.

D This provides a reason to believe that the number of fires started by children will most likely decrease, rather than stay the same: fewer children will be able to operate the lighters, and thus fewer fires are likely to be started.

E This information about how many fires were started by children before safety levers were required does not have any bearing on the question of how many fires are likely to be started by children now that the safety levers are required.

**The correct answer is B.**

3. Which of the following most logically completes the passage?

A business analysis of the Appenian railroad system divided its long-distance passenger routes into two categories: rural routes and interurban routes. The analysis found that, unlike the interurban routes, few rural routes carried a high enough passenger volume to be profitable. Closing unprofitable rural routes, however, will not necessarily enhance the profitability of the whole system, since \_\_\_\_\_.

- (A) a large part of the passenger volume on interurban routes is accounted for by passengers who begin or end their journeys on rural routes
- (B) within the last two decades several of the least used rural routes have been closed and their passenger services have been replaced by buses
- (C) the rural routes were all originally constructed at least one hundred years ago, whereas some of the interurban routes were constructed recently for new high-speed express trains
- (D) not all of Appenia’s large cities are equally well served by interurban railroad services
- (E) the greatest passenger volume, relative to the routes’ capacity, is not on either category of long-distance routes but is on suburban commuter routes

**Argument Construction**

<b>Situation</b>	In the Appenian railroad system, interurban routes generally carry
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	enough passengers to be profitable, but few rural routes do.
<b>Reasoning</b>	<i>What would suggest that closing unprofitable rural routes would not enhance the railroad system's profitability?</i> Any evidence that closing the unprofitable rural routes would indirectly reduce the profitability of other components of the railroad system would support the conclusion that closing those rural routes will not enhance the system's profitability. Thus, a statement providing such evidence would logically complete the passage.

- A Correct.** This suggests that closing the rural routes could discourage many passengers from traveling on the profitable interurban routes as well, thus reducing the profitability of the railroad system as a whole.
- B Even if some of the least used rural routes have already been closed, it remains true that most of the remaining rural routes are too little used to be profitable.
- C Closing very old routes would be at least as likely to enhance the railroad system's profitability as closing newer routes would be.
- D Even if there is better railroad service to some large cities than others, closing unprofitable rural routes could still enhance the system's profitability.
- E Even if suburban routes are the most heavily used and profitable, closing underused, unprofitable rural routes could still enhance the system's profitability.

**The correct answer is A.**

4. A cost-effective solution to the problem of airport congestion is to provide high-speed ground transportation between major cities lying 200 to 500 miles apart. The successful implementation of this plan would cost far less than expanding existing airports and would also reduce the number of airplanes clogging both airports and airways.
- Which of the following, if true, could proponents of the plan above most appropriately cite as a piece of evidence for the soundness of their plan?
- (A) An effective high-speed ground-transportation system would require major repairs to many highways and mass-transit improvements.
- (B) One-half of all departing flights in the nation's busiest airport head for a destination in a major city 225 miles away.
- (C) The majority of travelers departing from rural airports are flying to destinations in cities over 600 miles away.
- (D) Many new airports are being built in areas that are presently served by high-speed ground-transportation systems.



(E) A large proportion of air travelers are vacationers who are taking long-distance flights.

Evaluation of a Plan

Situation	Providing high-speed ground transportation between cities 200 to 500 miles apart is a more cost-effective and efficient way to reduce airport congestion than expanding existing airports.
Reasoning	<i>What evidence supports the plan?</i> The transportation plan will work only if people are likely to use the high-speed ground transportation. If half the flights leaving the busiest airport fly to destinations within range (200–500 miles) of ground transportation, then many people might choose high-speed ground transportation over air travel. Then, fewer flights would be needed and airport congestion would decrease.

A Expensive repairs are an argument against, not for, ground transportation.

**B Correct.** This statement properly identifies evidence that supports the plan.

C Rural travelers are not included in this proposal, which addresses travel between major cities.

D New airports covering the same routes are a threat to the plan.

E The information that the airports are congested because of long-distance travelers, rather than those heading to destinations within 500 miles, argues against the proposal.

The correct answer is B.

5. In an attempt to promote the widespread use of paper rather than plastic, and thus reduce nonbiodegradable waste, the council of a small town plans to ban the sale of disposable plastic goods for which substitutes made of paper exist. The council argues that since most paper is entirely biodegradable, paper goods are environmentally preferable.

Which of the following, if true, indicates that the plan to ban the sale of disposable plastic goods is ill suited to the town council’s environmental goals?

- (A) Although biodegradable plastic goods are now available, members of the town council believe biodegradable paper goods to be safer for the environment.
- (B) The paper factory at which most of the townspeople are employed plans to increase production of biodegradable paper goods.
- (C) After other towns enacted similar bans on the sale of plastic goods, the environmental benefits were not discernible for several years.

(D) Since most townspeople prefer plastic goods to paper goods in many instances, they are likely to purchase them in neighboring towns where plastic goods are available for sale.

(E) Products other than those derived from wood pulp are often used in the manufacture of paper goods that are entirely biodegradable.

Evaluation of a Plan

Situation	A town council considers banning the sale of disposable plastic goods for which there are paper substitutes because paper is biodegradable and therefore environmentally preferable.
Reasoning	<i>What problem might there be in the council’s plan?</i> The plan is intended to reduce the amount of plastic used by the citizens of the town. The town council’s plan is, however, only as effective as the support it has from the town’s citizens. If the citizens prefer disposable plastic goods and if the goods are also readily available in neighboring towns, there is nothing to stop them from buying the plastic goods elsewhere if that is their preference.

- A The existence of biodegradable plastic does not make the town’s plan to ban disposable plastic goods unsuitable to its environmental goal, which is to reduce nonbiodegradable waste.
- B That the local factory will increase production of biodegradable paper goods makes it more likely that a sufficient amount of such products will be available for townspeople who wish to switch from disposable plastic goods, so this does not indicate that the council’s plan is ill suited for its goals.
- C Environmental benefits need not be immediate. Even though benefits were not perceived *for several years* after similar bans, the benefits did occur.
- D Correct.** This statement properly identifies the problem with the council’s plan.
- E The specific materials that go into making nonbiodegradable paper are not in question. This statement is irrelevant to the plan.

The correct answer is D.

6. Since the mayor’s publicity campaign for Greenville’s bus service began six months ago, morning automobile traffic into the midtown area of the city has decreased 7 percent. During the same period, there has been an equivalent rise in the number of persons riding buses into the midtown area. Obviously, the mayor’s publicity campaign has convinced many people to leave their cars at home and ride the bus to work.

Which of the following, if true, casts the most serious doubt on the conclusion

drawn above?

- (A) Fares for all bus routes in Greenville have risen an average of 5 percent during the past six months.
- (B) The mayor of Greenville rides the bus to City Hall in the city’s midtown area.
- (C) Road reconstruction has greatly reduced the number of lanes available to commuters in major streets leading to the midtown area during the past six months.
- (D) The number of buses entering the midtown area of Greenville during the morning hours is exactly the same now as it was one year ago.
- (E) Surveys show that longtime bus riders are no more satisfied with the Greenville bus service than they were before the mayor’s publicity campaign began.

Argument Evaluation

Situation	Traffic into midtown has decreased by 7 percent, and bus ridership has increased by an equivalent amount. The mayor’s publicity campaign is responsible for this change.
Reasoning	<i>What casts doubt on this conclusion?</i> Another reasonable explanation of what caused the decrease in automobile traffic and the increase in bus ridership would make this conclusion suspect. Road construction impeding access to midtown over the same period of time is a reasonable alternative explanation. The road construction projects would likely have discouraged people from driving to midtown; many of these people have probably taken the bus.

- A An increase in fares might be a reasonable explanation for a decrease in ridership, but not for an increase.
- B The mayor’s decision to ride the bus sets a good example for citizens, so this would tend to strengthen rather than weaken support for the conclusion.
- C **Correct.** This statement properly identifies an explanation that weakens support for the conclusion.
- D If more buses were running, then more seats would be available for people traveling into midtown. Ruling out this scenario helps strengthen, not weaken, support for the conclusion.
- E Passengers perceive bus service to be the same, so better service can be eliminated as a possible cause of the increased ridership.

The correct answer is C.

7. Although Ackerburg’s subway system is currently operating at a deficit, the transit authority will lower subway fares next year. The authority projects that the lower fares will result in a ten percent increase in the number of subway riders. Since the additional income from the larger ridership will more than offset the decrease due to lower fares, the transit authority actually expects the fare reduction to reduce or eliminate the subway system’s operating deficit for next year.

Which of the following, if true, provides the most support for the transit authority’s expectation of reducing the subway system’s operating deficit?

- (A) Throughout the years that the subway system has operated, fares have never before been reduced.
- (B) The planned fare reduction will not apply to students, who can already ride the subway for a reduced fare.
- (C) Next year, the transit authority will have to undertake several large-scale track maintenance projects.
- (D) The subway system can accommodate a ten percent increase in ridership without increasing the number of trains it runs each day.
- (E) The current subway fares in Ackerburg are higher than subway fares in other cities in the region.

**Argument Evaluation**

<b>Situation</b>	Ackerburg’s transit authority plans to lower subway fares, projecting that this will increase ridership by 10 percent and thereby reduce or eliminate the subway system’s operating deficit.
<b>Reasoning</b>	<i>What evidence would support the expectation that lowering subway fares will reduce the operating deficit?</i> The passage says the additional income from the projected increase in ridership will more than offset the decrease due to the lowered fares. The claim that lowering fares will reduce the operating deficit could be supported either by additional evidence that lowering the fares will increase ridership at least as much as projected or by evidence that the plan will not increase overall operating expenses.

- A The fact that fares have never been reduced provides no evidence about what would happen if they were reduced.
- B This suggests that the planned fare reduction would not affect revenue from student riders, but it does not suggest how it would affect revenue from all other riders.
- C These maintenance projects will probably increase the operating deficit, making it less likely that the fare reduction will reduce or eliminate that deficit.

**D Correct.** This indicates that the plan will not involve extra operating expenses for running trains and thus increases the likelihood that the plan will reduce the operating deficit.

E Ackerburg may differ from other cities in the region in ways that make the higher fares optimal for Ackerburg’s subway system.

**The correct answer is D.**

8. People’s television-viewing habits could be monitored by having television sets, when on, send out low-level electromagnetic waves that are reflected back to the sets. The reflected waves could then be analyzed to determine how many persons are within the viewing area of the sets. Critics fear adverse health effects of such a monitoring system, but a proponent responds, “The average dose of radiation is less than one chest x-ray. As they watch, viewers won’t feel a thing.”
- Which of the following issues would it be most important to resolve in evaluating the dispute concerning the health effects of the proposed system?
- (A) Whether the proposed method of monitoring viewership can distinguish between people and pets
  - (B) Whether radar speed monitors also operate on the principle of analyzing reflected waves of electromagnetic radiation
  - (C) Whether the proposed system has been tried out in various areas of the country or in a single area only
  - (D) What uses are foreseen for the viewership data
  - (E) Whether the average dose that the proponent describes is a short-term dose or a lifetime cumulative dose

**Evaluation of a Plan**

<b>Situation</b>	People’s television habits could be tracked using electromagnetic waves. Critics of this plan are concerned that the electromagnetic waves would prove detrimental to people’s health, but proponents say that viewers will feel nothing, for the average dose of radiation is less than one chest x-ray.
<b>Reasoning</b>	<i>What would it be most useful to know in order to resolve the dispute?</i> The dispute centers on the potential dangers of the radiation directed at those around the television. If the proponent’s claim is accurate, then presumably people have nothing to worry about. But there is a significant ambiguity in the proponent’s claim: what “ <i>average</i> ” is the proponent talking about? Over what length of time is this “ <i>average</i> ” dose of radiation administered by the television—a day, a year, a lifetime? Resolving this question would go a long way toward establishing whether the critics of the plan are

justified in their concerns.

A This speaks to whether the data obtained from the radiation plan will be useful to those who wish to monitor people's television habits, not to whether the monitoring system will produce adverse health effects.

B This is tangentially related to the dispute, for it could be said that if reflected waves of radiomagnetic radiation were in fact dangerous, radar speed monitors would never have been approved for use. But since no information is given about whether the amount of radiation to which people are exposed by radar speed monitors is comparable to the amount to which they would be exposed by the proposed television system, the information given would not help to resolve the dispute.

C It would be useful to know whether the health effects of the proposed system have been investigated through trials of the system. But merely knowing whether the system has been tried out in various areas of the country or in only a single area would not in itself help in determining how likely the system is to produce adverse health effects.

D The uses to which the viewership data will be put are unrelated to the question of whether the proposed system will have adverse health effects.

**E Correct.** This statement properly identifies an issue that, if resolved, would help to determine the health effects of the proposed system.

**The correct answer is E.**

9. Patrick usually provides child care for six children. Parents leave their children at Patrick's house in the morning and pick them up after work. At the end of each workweek, the parents pay Patrick at an hourly rate for the child care provided that week. The weekly income Patrick receives is usually adequate but not always uniform, particularly in the winter, when children are likely to get sick and be unpredictably absent.

Which of the following plans, if put into effect, has the best prospect of making Patrick's weekly income both uniform and adequate?

- (A) Pool resources with a neighbor who provides child care under similar arrangements, so that the two of them cooperate in caring for twice as many children as Patrick currently does.
- (B) Replace payment by actual hours of child care provided with a fixed weekly fee based upon the number of hours of child care that Patrick would typically be expected to provide.
- (C) Hire a full-time helper and invest in facilities for providing child care to sick children.
- (D) Increase the hourly rate to a level that would provide adequate income

even in a week when half of the children Patrick usually cares for are absent.

(E) Increase the number of hours made available for child care each day, so that parents can leave their children in Patrick’s care for a longer period each day at the current hourly rate.

Evaluation of a Plan

Situation	At the end of the workweek, Patrick is paid a certain amount for each hour of child care he has provided. Patrick usually receives adequate weekly income under this arrangement, but in the winter Patrick’s income fluctuates, because children are unpredictably absent due to illness.
Reasoning	<i>Which plan would be most likely to meet the two goals of uniform weekly income and adequate weekly income?</i> Patrick must find a way to ensure that his weekly income is both adequate—that is, not reduced significantly from current levels—and uniform—that is, not subject to seasonal or other fluctuations. A successful plan would thus most likely be one that does not increase Patrick’s costs. Further, the plan need not increase Patrick’s weekly income; it must merely ensure that that income is more reliable. It should therefore also provide some way to mitigate the unexpected loss of income from children’s absences.

A This plan might raise Patrick’s income slightly, because he and the neighbor might pay out less in costs if they pool their resources. But this plan would have no effect on the problem that unpredictable absences pose for Patrick’s weekly income.

**B Correct.** This statement properly identifies a plan that would most likely keep Patrick’s income adequate (he would probably receive approximately the same amount of money per child as he does now) and uniform (he would receive the money regardless of whether a child was present or absent).

C While this plan might somewhat mitigate the unpredictability in Patrick’s income that results from sick children’s absences—because parents would be less likely to keep sick children at home—it would increase Patrick’s costs. Paying a helper and investing in different facilities would reduce Patrick’s income and might thus result in that income being inadequate.

D Under this plan, if we assume that parents did not balk at the increase in Patrick’s hourly rate and find alternative child care, Patrick’s income would most likely be adequate. But this plan would not help make Patrick’s weekly income uniform. His income would continue to fluctuate when children are absent. Remember, there are two goals with regard to Patrick’s income:

adequacy and uniformity.

E This plan might increase Patrick’s income, in that he might be paid for more hours of child care each week. The goals here, however, are to make Patrick’s weekly income both adequate and uniform, and this plan does not address the issue of uniformity.

**The correct answer is B.**

10. A computer equipped with signature-recognition software, which restricts access to a computer to those people whose signatures are on file, identifies a person’s signature by analyzing not only the form of the signature but also such characteristics as pen pressure and signing speed. Even the most adept forgers cannot duplicate all of the characteristics the program analyzes.

Which of the following can be logically concluded from the passage above?

- (A) The time it takes to record and analyze a signature makes the software impractical for everyday use.
- (B) Computers equipped with the software will soon be installed in most banks.
- (C) Nobody can gain access to a computer equipped with the software solely by virtue of skill at forging signatures.
- (D) Signature-recognition software has taken many years to develop and perfect.
- (E) In many cases even authorized users are denied legitimate access to computers equipped with the software.

**Argument Construction**

<b>Situation</b>	Forgers cannot duplicate all the characteristics that signature-recognition software analyzes, including the form of a signature, pen pressure, and signing speed. Computers equipped with this software restrict access to those whose signatures are on file.
<b>Reasoning</b>	<i>What conclusion can be reached about computers equipped with this software?</i> The passage states that the software detects more characteristics in a signature than the most accomplished forger can possibly reproduce. Thus, skill at forging signatures is not enough to allow someone to gain access to a computer equipped with the software.

- A No information about the speed of the analysis is given, so no such conclusion can be drawn.
- B Although the software would likely be of benefit to banks, we cannot conclude that it will be installed in most banks because the passage doesn’t



rule out, e.g., that the software may be too costly or that there may be proprietary constraints.

**C Correct.** This statement properly identifies a conclusion that can be drawn from the passage.

D Although it seems reasonable to think that the software took a long time to develop, nothing in the passage justifies the claim that it took years.

E Nothing in the passage rules out the possibility that the software functions so well that authorized users will never be denied legitimate access to computers equipped with the software.

**The correct answer is C.**

11. Extinction is a process that can depend on a variety of ecological, geographical, and physiological variables. These variables affect different species of organisms in different ways, and should, therefore, yield a random pattern of extinctions. However, the fossil record shows that extinction occurs in a surprisingly definite pattern, with many species vanishing at the same time.

Which of the following, if true, forms the best basis for at least a partial explanation of the patterned extinctions revealed by the fossil record?

(A) Major episodes of extinction can result from widespread environmental disturbances that affect numerous different species.

(B) Certain extinction episodes selectively affect organisms with particular sets of characteristics unique to their species.

(C) Some species become extinct because of accumulated gradual changes in their local environments.

(D) In geologically recent times, for which there is no fossil record, human intervention has changed the pattern of extinctions.

(E) Species that are widely dispersed are the least likely to become extinct.

**Argument Construction**

<b>Situation</b>	The fossil record reveals that species become extinct in a surprisingly definite pattern, with multiple species vanishing simultaneously.
<b>Reasoning</b>	<i>Which point provides a basis for explaining the pattern?</i> The passage states that the process of extinction depends on so many variables—in the ecology and geography of the environment and in the physiology of the species—that the expected outcome would be a random pattern of extinctions. Yet a definite pattern is found instead. What could explain the disappearance of multiple species at the same time? If there were significant widespread changes in the environment, multiple species could be affected simultaneously,

	causing their extinction.
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- A Correct.** This statement properly identifies a basis for explaining the pattern of many species becoming extinct simultaneously.
- B This explanation of selective extinction does not explain how many species become extinct at the same time.
- C This explanation addresses only some species, not *many species*.
- D The passage is based on what the fossil record suggests; more recent times, having no fossil record, are outside the consideration of the passage.
- E Indicating which species are least likely to become extinct does not explain a pattern of simultaneous extinction of many species.

**The correct answer is A.**

12. Shelby Industries manufactures and sells the same gauges as Jones Industries. Employee wages account for 40 percent of the cost of manufacturing gauges at both Shelby Industries and Jones Industries. Shelby Industries is seeking a competitive advantage over Jones Industries. Therefore, to promote this end, Shelby Industries should lower employee wages.

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

- (A) Because they make a small number of precision instruments, gauge manufacturers cannot receive volume discounts on raw materials.
- (B) Lowering wages would reduce the quality of employee work, and this reduced quality would lead to lowered sales.
- (C) Jones Industries has taken away 20 percent of Shelby Industries’ business over the last year.
- (D) Shelby Industries pays its employees, on average, 10 percent more than does Jones Industries.
- (E) Many people who work for manufacturing plants live in areas in which the manufacturing plant they work for is the only industry.

**Evaluation of a Plan**

<b>Situation</b>	Two companies manufacture the same product, and employee wages at both companies account for the same percentage of the manufacturing cost. One company seeks a competitive edge by lowering employee wages.
<b>Reasoning</b>	<i>What point weakens the argument in favor of lowering wages?</i> The company anticipates that the result of lowering wages will be a competitive edge, presumably gained through offering its products at lower prices as the result of having lower production costs. If

evidence can be shown that lowering wages will not result in gaining a competitive advantage, the argument is weakened. If instead the result of lowered wages is lowered employee morale, and thus a lower quality of work and products, the declining quality could lead to a competitive disadvantage, lowering sales.
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A Because the company is unable to get lower costs on its raw materials, it is more likely to seek other ways of lowering its costs, such as reducing wages. This statement tends to support the argument.

**B Correct.** This statement properly identifies a factor that weakens the argument.

C The loss of business would only help explain why Shelby Industries is in need of a competitive edge; it indicates nothing about whether cutting employee wages is a good way to do so.

D Its relatively higher employee wages show only why the company might reduce wages; the support for the conclusion about gaining a competitive advantage is strengthened rather than weakened.

E We do not know whether this applies to either of the companies.

**The correct answer is B.**

13. In parts of South America, vitamin-A deficiency is a serious health problem, especially among children. In one region, agriculturists are attempting to improve nutrition by encouraging farmers to plant a new variety of sweet potato called SPK004 that is rich in beta-carotene, which the body converts into vitamin A. The plan has good chances of success, since sweet potato is a staple of the region's diet and agriculture, and the varieties currently grown contain little beta-carotene.

Which of the following, if true, most strongly supports the prediction that the plan will succeed?

(A) The growing conditions required by the varieties of sweet potato currently cultivated in the region are conditions in which SPK004 can flourish.

(B) The flesh of SPK004 differs from that of the currently cultivated sweet potatoes in color and texture, so traditional foods would look somewhat different when prepared from SPK004.

(C) There are no other varieties of sweet potato that are significantly richer in beta-carotene than SPK004 is.

(D) The varieties of sweet potato currently cultivated in the region contain some important nutrients that are lacking in SPK004.

(E) There are other vegetables currently grown in the region that contain

more beta-carotene than the currently cultivated varieties of sweet potato do.

Evaluation of a Plan

Situation	Agriculturists believe that if farmers in a particular South American region plant a new beta-carotene-rich variety of sweet potato, SPK004, the vitamin-A deficiency suffered in that region can be alleviated. Even though sweet potatoes are a staple of the region and the body can convert a sweet potato’s beta-carotene into vitamin A, the varieties currently grown there contain little beta-carotene.
Reasoning	<i>What would most support the success of the plan to improve nutrition by encouraging farmers to plant SPK004? What, that is, would make farmers respond positively to encouragement to plant SPK004? Farmers in the region would probably be inclined to substitute SPK004 for the varieties of sweet potato they currently grow if they could be assured that SPK004 would grow as well as those other varieties do. This would in turn most likely lead to SPK004 being substituted for current varieties of sweet potato in staple dishes, and thus to an improvement in nutrition in the region.</i>

**A Correct.** This statement properly identifies a factor that would support a prediction of the plan’s success.

B If dishes made with SPK004 look different than traditional sweet potato dishes in the region do, people might be less likely to eat those dishes; in such a situation, the plan’s success would be less likely, rather than more likely.

C It is SPK004’s beta-carotene content relative to the beta-carotene content of the sweet potatoes currently grown in the region that is relevant here, so it does not matter if there are other varieties of sweet potato that are richer in beta-carotene than SPK004 is.

D This suggests that switching from currently grown sweet potatoes to SPK004 could negatively affect nutrition in the region; this undermines, rather than supports, the prediction that the plan to improve nutrition will succeed.

E These other vegetables, despite their beta-carotene content being higher than that of the currently cultivated varieties of sweet potato, are clearly not sufficient to prevent a vitamin-A deficiency in the region. This information does nothing to support the prediction that encouraging farmers to plant SPK004 will help to meet those beta-carotene needs.

**The correct answer is A.**

14. Which of the following most logically completes the argument?

The last members of a now-extinct species of a European wild deer called the giant deer lived in Ireland about 16,000 years ago. Prehistoric cave paintings in France depict this animal as having a large hump on its back. Fossils of this animal, however, do not show any hump. Nevertheless, there is no reason to conclude that the cave paintings are therefore inaccurate in this regard, since \_\_\_\_\_.

- (A) some prehistoric cave paintings in France also depict other animals as having a hump
- (B) fossils of the giant deer are much more common in Ireland than in France
- (C) animal humps are composed of fatty tissue, which does not fossilize
- (D) the cave paintings of the giant deer were painted well before 16,000 years ago
- (E) only one currently existing species of deer has any anatomical feature that even remotely resembles a hump

Argument Construction

Situation	Representations found in prehistoric cave paintings in France of the now-extinct giant deer species—the last members of which lived in Ireland about 16,000 years ago—depict the deer as having a hump on its back. Fossils of the deer, however, do not feature a hump.
Reasoning	<i>What point would most logically complete the argument? That is, what would show that the cave paintings are not inaccurate even though fossils of the giant deer show no hump?</i> How could it be the case that the paintings show a hump while the fossils do not? One way in which this could be so is if the humps are not part of the fossils—that is, if there is some reason why a hump would not be preserved with the rest of an animal’s remains.

A We do not know whether these other cave paintings accurately depict the animals as having humps, so this provides no reason to think that the depictions of giant deer are accurate.

B Where giant deer fossils are found has no bearing on whether cave paintings of giant deer that show a hump on the animal’s back are inaccurate. It could be that this suggests that the painters responsible for the representations would not be very familiar with the species; if this were so, it would give some reason to conclude that the representations *were* inaccurate.

**C Correct.** This statement properly identifies a point that logically completes the argument. A hump would not be found as part of a giant deer’s fossilized remains if the humps were fatty tissue that would not be

fossilized.

D That the cave paintings were painted well before 16,000 years ago shows that they were executed before the giant deer became extinct, but this does not help to explain the discrepancy between the paintings’ depiction of a hump on the deer’s back and the fossil record’s lack of such a hump. It could be that even though the cave painters coexisted with the giant deer, they were not sufficiently familiar with them to depict them accurately.

E That currently existing species of deer lack humps, or even that one species does have a feature resembling a hump, has little bearing on whether cave paintings in France accurately depict the giant deer as having a hump.

**The correct answer is C.**

15. High levels of fertilizer and pesticides, needed when farmers try to produce high yields of the same crop year after year, pollute water supplies. Experts therefore urge farmers to diversify their crops and to rotate their plantings yearly.

To receive governmental price-support benefits for a crop, farmers must have produced that same crop for the past several years.

- The statements above, if true, best support which of the following conclusions?
- (A) The rules for governmental support of farm prices work against efforts to reduce water pollution.
  - (B) The only solution to the problem of water pollution from fertilizers and pesticides is to take farmland out of production.
  - (C) Farmers can continue to make a profit by rotating diverse crops, thus reducing costs for chemicals, but not by planting the same crop each year.
  - (D) New farming techniques will be developed to make it possible for farmers to reduce the application of fertilizers and pesticides.
  - (E) Governmental price supports for farm products are set at levels that are not high enough to allow farmers to get out of debt.

**Argument Construction**

<b>Situation</b>	Farmers are urged to rotate crops annually because the chemicals they must use when continuing to produce the same crops pollute water supplies. On the other hand, farmers may receive federal price-support benefits only if they have been producing the same crop for the past several years.
<b>Reasoning</b>	<i>What conclusion can be drawn from this information?</i> Farmers wish to receive the price-support benefits offered by the government, so they grow the same crop for several years. In order to continue

	getting good yields, they use the high levels of chemicals necessary when the same crop is grown from year to year. The result is water pollution. The government’s rules for price-support benefits work against the efforts to reduce water pollution.
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- A Correct.** This statement properly identifies the conclusion supported by the evidence.
- B The experts cited in the passage believe that the rotation of crops is the solution, not the removal of farmland from production.
- C The conclusion that farmers cannot make a profit by producing the same crop year after year is not justified by the information given in the premises. The information given suggests that this conclusion would actually be false, since these farmers would benefit by price-support measures for such a crop.
- D No information in the passage supports a conclusion about farming techniques other than crop diversification and rotation, which are clearly existing farming techniques and not new or yet to be developed.
- E This conclusion is unwarranted because there is no information in the two statements about the levels of the price supports and of the farmers’ debts.

**The correct answer is A.**

16. Ten years ago the number of taxpayers in Greenspace County was slightly greater than the number of registered voters. The number of taxpayers has doubled over the last ten years, while the number of registered voters has increased, but at a lower rate than has the number of taxpayers.
- Which of the following must be true in Greenspace County if the statements above are true?
- (A) The number of taxpayers is now smaller than the number of registered voters.
  - (B) Everyone who is a registered voter is also a taxpayer.
  - (C) The proportion of registered voters to taxpayers has increased over the last ten years.
  - (D) The proportion of registered voters to taxpayers has decreased over the last ten years.
  - (E) The proportion of registered voters to taxpayers has remained unchanged over the last ten years.

**Argument Evaluation**

<b>Situation</b>	Ten years ago a county had slightly more taxpayers than registered
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	voters. Since then the number of taxpayers has doubled, while the number of registered voters has increased less.
<b>Reasoning</b>	<i>What can be deduced from the information about the changing numbers of taxpayers and registered voters?</i> There were already slightly more taxpayers than registered voters ten years ago, but since then the number of taxpayers has increased more than proportionately to the number of registered voters. It follows that there must still be more taxpayers than registered voters, that the absolute number of taxpayers must have increased more than the absolute number of registered voters has, and that the ratio of taxpayers to registered voters must have increased.

- A Since there were already more taxpayers than registered voters ten years ago, and since the number of taxpayers has increased more than the number of registered voters, there must still be more taxpayers than registered voters.
- B Although there are more taxpayers than registered voters overall, there could still be many individual registered voters who are not taxpayers.
- C Since the number of taxpayers has doubled while the number of registered voters has less than doubled, the proportion of registered voters to taxpayers must have decreased, not increased as this option claims.
- D Correct.** Since the number of taxpayers has doubled while the number of registered voters has less than doubled, the proportion of registered voters to taxpayers must have decreased.
- E Since the number of taxpayers has doubled while the number of registered voters has less than doubled, the proportion of registered voters to taxpayers must have decreased, not remained unchanged.

**The correct answer is D.**

17. The interview is an essential part of a successful hiring program because, with it, job applicants who have personalities that are unsuited to the requirements of the job will be eliminated from consideration. The argument above logically depends on which of the following assumptions?
- (A) A hiring program will be successful if it includes interviews.
- (B) The interview is a more important part of a successful hiring program than is the development of a job description.
- (C) Interviewers can accurately identify applicants whose personalities are unsuited to the requirements of the job.
- (D) The only purpose of an interview is to evaluate whether job applicants' personalities are suited to the requirements of the job.



(E) The fit of job applicants’ personalities to the requirements of the job was once the most important factor in making hiring decisions.

Argument Construction

Situation	The interview is a necessary part of hiring because candidates with unsuitable personalities are eliminated from consideration.
Reasoning	<i>What is being assumed in this argument?</i> The argument puts forth one reason that the interview is important: it eliminates candidates with unsuitable personalities. This presupposes that interviewers can, with a fair degree of accuracy, rule out those candidates whose personalities do not fit the needs of the job.

- A The argument does not go so far as to say that interviews guarantee a successful hiring program.
- B The argument does not prioritize the parts of a hiring program.
- C Correct.** This statement properly identifies the assumption underlying the argument.
- D The argument gives one reason that the interview is important, but it does not say it is the *only* reason.
- E This concerns past practices in hiring, and is irrelevant to the argument.

The correct answer is C.

18. A major health insurance company in Lagolia pays for special procedures prescribed by physicians only if the procedure is first approved as “medically necessary” by a company-appointed review panel. The rule is intended to save the company the money it might otherwise spend on medically unnecessary procedures. The company has recently announced that in order to reduce its costs, it will abandon this rule.
- Which of the following, if true, provides the strongest justification for the company’s decision?
- (A) Patients often register dissatisfaction with physicians who prescribe nothing for their ailments.
- (B) Physicians often prescribe special procedures that are helpful but not altogether necessary for the health of the patient.
- (C) The review process is expensive and practically always results in approval of the prescribed procedure.
- (D) The company’s review process does not interfere with the prerogative of physicians, in cases where more than one effective procedure is available, to select the one they personally prefer.

(E) The number of members of the company-appointed review panel who review a given procedure depends on the cost of the procedure.

Evaluation of a Plan

Situation	In order to cut costs, a major health insurance company is abandoning a rule stating that it will pay for special procedures only if the procedure is approved as medically necessary by a review panel.
Reasoning	<i>What piece of information would most help to justify the company's decision?</i> For the company to save money, it would need to be in some way cutting its costs by abandoning the rule. Under what circumstances might the rule cost, rather than save, the company money? The panel itself might be expensive to convene, for example. Further, the cost savings achieved by the panel might be minimal if the panel did not deny significant numbers of procedures.

A This suggests that patients might be pressuring their physicians to prescribe certain unnecessary procedures for their ailments, which in turn suggests that the panel is reviewing these procedures and denying them. But if so, then the panel is probably saving the insurance company money, so abandoning the panel's review would not reduce the company's costs.

B This suggests that certain procedures that are being prescribed by physicians are not medically necessary, which in turn suggests that the panel reviewing these procedures may be denying them. If this is the case, then the panel is probably saving the insurance company a significant amount of money, so abandoning the panel's review may well increase rather than decrease the company's costs.

**C Correct.** This statement properly identifies information that would help to justify the company's decision.

D Even if the panel does not interfere with physicians' choices when more than one medically effective procedure is available, the panel may still be denying pay for many procedures that are not medically necessary. In such cases the panel may be saving the insurance company money, and abandoning the review process would not reduce the company's costs.

E This suggests that the more expensive the procedure under review, the more expensive the panel itself is. Even so, if the panel denies payment for very expensive procedures, it may nonetheless save the company significantly more than the company has to pay to convene the panel, so abandoning the review process would not reduce the company's costs.

The correct answer is C.

19. To evaluate a plan to save money on office-space expenditures by having its

employees work at home, XYZ Company asked volunteers from its staff to try the arrangement for six months. During this period, the productivity of these employees was as high as or higher than before.

Which of the following, if true, would argue most strongly against deciding, on the basis of the trial results, to implement the company’s plan?

- (A) The employees who agreed to participate in the test of the plan were among the company’s most self-motivated and independent workers.
- (B) The savings that would accrue from reduced office-space expenditures alone would be sufficient to justify the arrangement for the company, apart from any productivity increases.
- (C) Other companies that have achieved successful results from work-at-home plans have workforces that are substantially larger than that of XYZ.
- (D) The volunteers who worked at home were able to communicate with other employees as necessary for performing the work.
- (E) Minor changes in the way office work is organized at XYZ would yield increases in employee productivity similar to those achieved in the trial.

Evaluation of a Plan

Situation	To save money on office space expenditures, a company considers having employees work at home. A six-month trial with employees who have volunteered to test the plan shows their productivity to be as high as or higher than before.
Reasoning	<i>Why would the trial results NOT provide a good reason to implement the plan?</i> Generalizing from a small sample to the group depends on having a sample that is representative. In this case, the employees who participated in the trial are not representative of all employees. The employees who volunteered for the trial may be the type of employees who would be most likely to work successfully at home. It would not be wise to base a generalization about all employees on this sample.

- A **Correct.** This statement properly identifies a flaw in the trial that is the basis for the plan.
- B This statement supports the implementation of the plan. Moreover, it is not based on the trial results, so it does not answer the question.
- C The passage gives no information about how company size might affect the implementation of the plan or the reliability of the trial results.
- D If anything, this would tend to support the plan.
- E The goal of the plan is to save money on office space, not to increase

productivity, so an alternative plan to increase productivity is irrelevant.

**The correct answer is A.**

20. Consumer health advocate: Your candy company adds caffeine to your chocolate candy bars so that each one delivers a specified amount of caffeine. Since caffeine is highly addictive, this indicates that you intend to keep your customers addicted.

Candy manufacturer: Our manufacturing process results in there being less caffeine in each chocolate candy bar than in the unprocessed cacao beans from which the chocolate is made.

The candy manufacturer’s response is flawed as a refutation of the consumer health advocate’s argument because it

- (A) fails to address the issue of whether the level of caffeine in the candy bars sold by the manufacturer is enough to keep people addicted
- (B) assumes without warrant that all unprocessed cacao beans contain a uniform amount of caffeine
- (C) does not specify exactly how caffeine is lost in the manufacturing process
- (D) treats the consumer health advocate’s argument as though it were about each candy bar rather than about the manufacturer’s candy in general
- (E) merely contradicts the consumer health advocate’s conclusion without giving any reason to believe that the advocate’s reasoning is unsound

**Argument Evaluation**

<b>Situation</b>	A candy manufacturer is accused of adding caffeine, an addictive substance, to its chocolate candy bars with the intent of keeping its customers addicted. The candy manufacturer responds to this accusation by saying that there is less caffeine in each chocolate candy bar than in the unprocessed cacao beans from which the chocolate is made.
<b>Reasoning</b>	<i>What is the flaw in the candy manufacturer’s response?</i> First consider whether the response indeed refutes the advocate’s charge. In actuality, instead of focusing on the details of the accusation—adding caffeine to its chocolate bars to keep customers addicted—the manufacturer substitutes an entirely different subject, the amount of caffeine in cacao beans. The manufacturer’s response is a diversion, not an answer.

**A Correct.** This statement properly identifies the flaw in the response. The candy manufacturer does not answer the question whether adding caffeine to candy bars is designed to make them addictive.

- B Even if the manufacturer did make this assumption, the information is not relevant to the accusation, which is not concerned with naturally occurring caffeine in cacao beans.
- C The precise amount of caffeine lost in the manufacturing process is not at issue.
- D The manufacturer does not treat the health advocate’s argument this way.
- E The manufacturer does not contradict the accusation, but rather avoids it.

**The correct answer is A.**

21. Nutritionists are advising people to eat more fish, since the omega-3 fatty acids in fish help combat many diseases. If everyone took this advice, however, there would not be enough fish in oceans, rivers, and lakes to supply the demand; the oceans are already being overfished. The obvious method to ease the pressure on wild fish populations is for people to increase their consumption of farmed fish.

Which of the following, if true, raises the most serious doubt concerning the prospects for success of the solution proposed above?

- A. Aquaculture, or fish farming, raises more fish in a given volume of water than are generally present in the wild.
- B. Some fish farming, particularly of shrimp and other shellfish, takes place in enclosures in the ocean.
- C. There are large expanses of ocean waters that do not contain enough nutrients to support substantial fish populations.
- D. The feed for farmed ocean fish is largely made from small wild-caught fish, including the young of many popular food species.
- E. Some of the species that are now farmed extensively were not commonly eaten when they were only available in the wild.

**Argument Evaluation**

<b>Situation</b>	Nutritionists advise people to eat fish for the omega-3 fatty acids, but there would not be enough fish to meet the demand if everyone followed this advice. Therefore, people should increase their consumption of farmed fish to ease pressure of wild fish populations.
<b>Reasoning</b>	<i>What evidence would suggest that increasing consumption of farmed fish would not ease pressure on wild fish populations?</i> Any evidence suggesting that significantly increasing consumption of farmed fish would diminish the habitat or food available for wild fish would also suggest that increasing consumption of farmed fish would not ease pressure on wild fish populations.

A Probably the less space fish farming requires, the less pressure it creates

- on wild fish habitats and populations, other things being equal.
- B Whether any fish farming takes place in enclosures in the ocean is not clearly relevant to whether it eases pressure on wild fish populations.
- C Substantial fish populations may thrive in other large expanses of ocean water that contain more nutrients, and in rivers and lakes.
- D Correct.** This suggests that increasing consumption of farmed fish would require increased use of wild fish as feed for farmed fish and therefore would not ease pressure on wild fish populations.
- E Even if some farmed fish are different species from the wild fish that are commonly eaten, increased consumption of the farmed fish could reduce demand for the wild fish and thereby ease pressure on wild fish populations.

**The correct answer is D.**

22. Crops can be traded on the futures market before they are harvested. If a poor corn harvest is predicted, prices of corn futures rise; if a bountiful corn harvest is predicted, prices of corn futures fall. This morning meteorologists are predicting much-needed rain for the corn-growing region starting tomorrow. Therefore, since adequate moisture is essential for the current crop’s survival, prices of corn futures will fall sharply today.

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

- (A) Corn that does not receive adequate moisture during its critical pollination stage will not produce a bountiful harvest.
- (B) Futures prices for corn have been fluctuating more dramatically this season than last season.
- (C) The rain that meteorologists predicted for tomorrow is expected to extend well beyond the corn-growing region.
- (D) Agriculture experts announced today that a disease that has devastated some of the corn crop will spread widely before the end of the growing season.
- (E) Most people who trade in corn futures rarely take physical possession of the corn they trade.

**Argument Evaluation**

<b>Situation</b>	Crop futures rise when a harvest is expected to be small and drop when a harvest is expected to be large. Today’s weather forecast for the corn-growing area predicts much-needed rain, so corn futures will fall today.
<b>Reasoning</b>	<i>What information weakens the argument that corn futures will fall?</i> The prediction that corn futures will drop sharply today is made

	solely on the basis of the forecast of rain, which would lead futures buyers to expect an abundant crop. However, if it becomes known that some harmful circumstance such as a devastating disease will severely affect the corn crop before the end of the growing season, this knowledge may lead buyers of futures to expect a smaller harvest, causing prices of futures to rise rather than fall.
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- A This statement tells at what exact point in the growing cycle rain is critical to a good harvest, but it gives no information about this year’s harvest.
- B This comparison of past price fluctuations does not affect what will happen to today’s corn futures on account of the predicted rain. The argument is not weakened.
- C The only rain that matters is the rain that affects the corn-growing region, not areas beyond it; this statement is irrelevant to the prediction.
- D Correct.** This statement properly identifies information that weakens the argument.
- E Physical possession of the corn is irrelevant to the price of corn futures.

**The correct answer is D.**

23. Large national budget deficits do not cause large trade deficits. If they did, countries with the largest budget deficits would also have the largest trade deficits. In fact, when deficit figures are adjusted so that different countries are reliably comparable to each other, there is no such correlation.

If the statements above are all true, which of the following can properly be inferred on the basis of them?

- (A) Countries with large national budget deficits tend to restrict foreign trade.
- (B) Reliable comparisons of the deficit figures of one country with those of another are impossible.
- (C) Reducing a country’s national budget deficit will not necessarily result in a lowering of any trade deficit that country may have.
- (D) When countries are ordered from largest to smallest in terms of population, the smallest countries generally have the smallest budget and trade deficits.
- (E) Countries with the largest trade deficits never have similarly large national budget deficits.

**Argument Construction**

<b>Situation</b>	No correlation is found between large national budget deficits and
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	large trade deficits.
<b>Reasoning</b>	<i>What inference can be drawn from this information?</i> Since the passage states that national budget deficits do not correlate with trade deficits, it is logical to anticipate an inference about the independent nature of the relationship between the two kinds of deficits. One possible inference is that reducing one deficit need not result in a reduction of the other.

- A This would receive some support if there were information indicating that there was a correlation between large budget deficits and small trade deficits, but no such information is given.
- B The passage states that reliable comparisons have been developed.
- C Correct.** This statement properly identifies an inference that can be drawn from the given information.
- D The passage gives no indication as to whether either type of deficit correlates in any way with the population size of a country.
- E Though there is no general correlation between the two kinds of deficits, it cannot be inferred that there are no countries in which both kinds of deficits are large.

**The correct answer is C.**

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

- The more worried investors are about losing their money, the more they will demand a high potential return on their investment; great risks must be offset by the chance of great rewards. This principle is the fundamental one in determining interest rates, and it is illustrated by the fact that
- (A) successful investors are distinguished by an ability to make very risky investments without worrying about their money
- (B) lenders receive higher interest rates on unsecured loans than on loans backed by collateral
- (C) in times of high inflation, the interest paid to depositors by banks can actually be below the rate of inflation
- (D) at any one time, a commercial bank will have a single rate of interest that it will expect all of its individual borrowers to pay
- (E) the potential return on investment in a new company is typically lower than the potential return on investment in a well-established company

**Argument Construction**

<b>Situation</b>	The principle of determining interest rates is related to the risk
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	involved in making the investment of a loan. Potentially greater rewards will lead lenders (investors) to accept greater risks.
<b>Reasoning</b>	<i>Which example illustrates the principle that greater risks should produce greater rewards?</i> The example must be about the relationship of risk to benefit. Lenders take a greater risk when loans are unsecured (not backed by collateral) because there is a chance they could lose their money entirely. The principle indicates that the lenders—who by definition are investors—would demand the reward of higher interest rates.

A The freedom from anxiety enjoyed by some investors is not relevant. While risky investments are mentioned, this statement does not mention their return.

**B Correct.** This statement properly identifies an example that shows that riskier loans—those not backed by collateral—receive the benefit of higher interest rates.

C This discussion of interest rates in times of inflation does not mention potential risk or potential benefit.

D A single rate of interest for all investments, no matter the level of risk, contradicts the principle and so cannot possibly be an example of it.

E New companies are generally riskier than established ones. A lower rate of return for such riskier new companies contradicts the principle.

**The correct answer is B.**

25. It is often said that high rates of inflation tend to diminish people’s incentive to save and invest. This view must be incorrect, however, because people generally saved and invested more of their income in the 1970’s when inflation rates were high than they did in the 1980’s when inflation rates were low.

Of the following, the best criticism of the argument above is that it overlooks the possibility that

- (A) all people do not respond in the same way to a given economic stimulus
- (B) certain factors operating in the 1980’s but not in the 1970’s diminished people’s incentive to save and invest
- (C) the population was larger in the 1980’s than it was in the 1970’s
- (D) the proponents of the view cited would stand to gain if inflation rates become lower
- (E) a factor that affects people’s savings behavior in a certain way could affect people’s investment behavior quite differently

**Argument Evaluation**

<b>Situation</b>	People generally saved and invested more in the 1970's when inflation was high than in the 1980s when inflation was low, despite the fact that it is commonly believed that high inflation discourages savings and investment.
<b>Reasoning</b>	<i>Why does the observation about savings, investment, and inflation rates in the 1970's and 1980's not justify the conclusion that high inflation does not generally diminish people's incentive to save and invest?</i> The argument observes that over the course of two decades there was a positive rather than a negative correlation between inflation on the one hand and savings and investment on the other. It infers from this that high rates of inflation do not tend to diminish people's incentive to save and invest. Is this inference justified? Note that the claim that this argument is trying to discredit is not that high rates of inflation always diminished people's incentive to save and invest. Rather, the claim is merely that high rates of inflation tend to do this. The argument overlooks the possibility that during the two decades in question other factors may have caused a positive correlation to briefly appear even if in general the correlation is negative.

A The argument is compatible with the hypothesis that some people respond to inflation by saving and investing more, while others do not.

**B Correct.** If these other factors, unrelated to the inflation rate, that operated in the 1980's but not the 1970's, created an even greater disincentive to savings and investment than high inflation rates provide, then those trends do not provide evidence about the general relationship among savings, investment, and inflation.

C The argument appears to concern savings and investment per capita, so total population size should be irrelevant. But increasing population would not explain declining total amounts of savings and investment, either.

D If anything, the possibility that the proponents' ulterior motives distorted their reasoning would help to support the argument's conclusion that the proponents' view is incorrect.

E The argument addresses this possibility by presenting evidence that inflation was positively correlated with both savings and investment during the 1970's and 1980's.

**The correct answer is B.**

26. Company Alpha buys free-travel coupons from people who are awarded the coupons by Bravo Airlines for flying frequently on Bravo airplanes. The coupons are sold to people who pay less for the coupons than they would pay by purchasing

tickets from Bravo. This marketing of coupons results in lost revenue for Bravo. To discourage the buying and selling of free-travel coupons, it would be best for Bravo Airlines to restrict the

- (A) number of coupons that a person can be awarded in a particular year
- (B) use of the coupons to those who were awarded the coupons and members of their immediate families
- (C) days that the coupons can be used to Monday through Friday
- (D) amount of time that the coupons can be used after they are issued
- (E) number of routes on which travelers can use the coupons

**Evaluation of a Plan**

<b>Situation</b>	A company that buys and sells travel coupons reduces the revenue of an airline. The airline wants to discourage the trade in coupons.
<b>Reasoning</b>	<i>How can the airline discourage its customers from selling their coupons?</i> Limiting the use of the coupons to those who earned them and their immediate families rewards passengers for flying the airline and encourages them to continue to do so while at the same time making the sale of the coupons useless.

- A Limiting the number of coupons awarded a year does nothing to discourage their resale.
- B Correct.** This statement properly identifies a limitation that makes the sale of coupons useless while maintaining the coupons’ value as a reward.
- C Limiting the time of use to weekdays does not discourage resale and makes the coupons less valuable to the airline’s customers.
- D Imposing a date by which the coupons must be used does not discourage resale and diminishes the coupons’ value as a reward.
- E Restricting the routes available does not discourage resale but does reduce the coupons’ value as a reward.

**The correct answer is B.**

- 27. A proposed ordinance requires the installation in new homes of sprinklers automatically triggered by the presence of a fire. However, a home builder argued that because more than 90 percent of residential fires are extinguished by a household member, residential sprinklers would only marginally decrease property damage caused by residential fires.  
  
Which of the following, if true, would most seriously weaken the home builder’s argument?

- (A) Most individuals have no formal training in how to extinguish fires.
- (B) Since new homes are only a tiny percentage of available housing in the city, the new ordinance would be extremely narrow in scope.
- (C) The installation of smoke detectors in new residences costs significantly less than the installation of sprinklers.
- (D) In the city where the ordinance was proposed, the average time required by the fire department to respond to a fire was less than the national average.
- (E) The largest proportion of property damage that results from residential fires is caused by fires that start when no household member is present.

Argument Evaluation

Situation	A home builder claims that requiring automatic sprinklers in new homes will not significantly decrease property damage from residential fires because more than 90 percent of home fires are put out by a household member.
Reasoning	<i>Which point weakens the argument?</i> The home builder’s argument implicitly recognizes that there are some residential fires that are not extinguished by household members. For instance, fires may occur when no one is home to put out the fire—a situation that automatic sprinklers would remedy. If such fires lead to considerable damage, then the home builder’s conclusion is not justified.

- A If more than 90 percent of residential fires are successfully extinguished by the individuals who live there, then no formal training appears to be necessary.
- B The small percentage of new homes supports the builder’s position; it does not weaken the argument.
- C The argument is about sprinkler systems, not smoke detection devices.
- D The argument is not about a comparison between fire departments and sprinkler systems.
- E Correct.** This statement properly identifies a weakness in the home builder’s argument by showing that the most damage occurs when no household member is present to put out the fire.

The correct answer is E.

28. Which of the following most logically completes the argument below?
- Within the earth’s core, which is iron, pressure increases with depth. Because the temperature at which iron melts increases with pressure, the inner core is solid and the outer core is molten. Physicists can determine the melting temperature of

iron at any given pressure and the pressure for any given depth in the earth. Therefore, the actual temperature at the boundary of the earth’s outer and inner cores—the melting temperature of iron there—can be determined, since \_\_\_\_\_.

(A) the depth beneath the earth’s surface of the boundary between the outer and inner cores is known

(B) some of the heat from the earth’s core flows to the surface of the earth

(C) pressures within the earth’s outer core are much greater than pressures above the outer core

(D) nowhere in the earth’s core can the temperature be measured directly

(E) the temperatures within the earth’s inner core are higher than in the outer core

**Argument Construction**

<b>Situation</b>	Pressure within the earth’s iron core increases with depth. Because the melting temperature of iron increases with pressure, the inner core is solid and the outer core molten. Physicists can determine iron’s melting temperature at any pressure and the pressure it is under at any depth.
<b>Reasoning</b>	<i>What further premise, combined with the information provided, would support the conclusion that physicists can determine the temperature at the boundary between the outer and inner cores?</i> Since physicists can determine iron’s melting temperature at any pressure and the pressure it is under at any depth, they must be able to determine its melting temperature at any depth. The temperature at the boundary between the inner and outer cores must exactly equal the melting temperature there, since that is the boundary between the molten and solid parts of the core. To determine the temperature at the boundary, therefore, it would suffice to know the depth of the boundary.

- A Correct.** If physicists know the depth of the boundary between the inner and outer cores, they can determine the temperature at the boundary.
- B The fact that *some heat* flows from the core to the surface is too vague to help in determining exact temperatures anywhere.
- C The difference in pressures between the outer core and the region above it is only vaguely described here and is not clearly relevant to the temperature at the boundary between the outer core and the inner core below it.
- D An absence of information would not be helpful in determining the temperature at the boundary between the outer and inner cores.

E This information is not sufficiently specific to show that the temperature at the boundary between the outer and inner cores can be determined.

The correct answer is A.

29. Which of the following most logically completes the reasoning?

Either food scarcity or excessive hunting can threaten a population of animals. If the group faces food scarcity, individuals in the group will reach reproductive maturity later than otherwise. If the group faces excessive hunting, individuals that reach reproductive maturity earlier will come to predominate. Therefore, it should be possible to determine whether prehistoric mastodons became extinct because of food scarcity or human hunting, since there are fossilized mastodon remains from both before and after mastodon populations declined, and \_\_\_\_\_.

- (A) there are more fossilized mastodon remains from the period before mastodon populations began to decline than from after that period
- (B) the average age at which mastodons from a given period reached reproductive maturity can be established from their fossilized remains
- (C) it can be accurately estimated from fossilized remains when mastodons became extinct
- (D) it is not known when humans first began hunting mastodons
- (E) climate changes may have gradually reduced the food available to mastodons

Argument Construction

Situation	In a population of animals, food scarcity causes later reproductive maturity; if that population is hunted excessively, earlier-maturing animals will be more numerous in the population.
Reasoning	<i>What point would most logically complete the argument?</i> For the information given to be of use in determining what caused mastodons’ extinction, mastodon fossils would need to indicate the age at which mastodons reached reproductive maturity, since that is what the argument suggests can indicate cause of extinction. If fossilized remains exist from before and after mastodon populations began to decline, and if the age at which those fossilized mastodons reached reproductive maturity can be determined, then we will have a good idea of what caused their extinction: if they reached reproductive maturity late, it was probably food scarcity, but if they matured earlier, it was most likely hunting.

A This fact only helps indicate that there was a decline; it tells us nothing about what caused the decline.

- B Correct.** This statement properly identifies a point that logically completes the argument: it explains how the fossilized mastodon remains could be used to help determine what caused mastodons’ extinction.
- C The point at which mastodons became extinct is not part of this argument, which is concerned with the cause of their extinction. The only way in which this could be relevant to the issue at hand is if mastodons became extinct before humans took up hunting mastodons—but the argument includes no information on whether this was so.
- D Not knowing when humans began hunting mastodons would have no effect on the argument, which is concerned with how mastodon fossils, combined with knowledge about how food scarcity and hunting affect mastodon reproductive maturity, can help determine how mastodons became extinct.
- E This fact only shows that food scarcity *may* have led to mastodon’s decline. It tells us nothing about whether fossilized remains can help determine whether it was food scarcity or human hunting that actually led to the decline.

**The correct answer is B.**

30. Unlike the wholesale price of raw wool, the wholesale price of raw cotton has fallen considerably in the last year. Thus, although the retail price of cotton clothing at retail clothing stores has not yet fallen, it will inevitably fall.
- Which of the following, if true, most seriously weakens the argument above?
- (A) The cost of processing raw cotton for cloth has increased during the last year.
  - (B) The wholesale price of raw wool is typically higher than that of the same volume of raw cotton.
  - (C) The operating costs of the average retail clothing store have remained constant during the last year.
  - (D) Changes in retail prices always lag behind changes in wholesale prices.
  - (E) The cost of harvesting raw cotton has increased in the last year.

**Argument Evaluation**

<b>Situation</b>	Since the wholesale price of raw cotton has fallen significantly, the retail price of cotton clothing in stores will inevitably fall.
<b>Reasoning</b>	<i>What point weakens this argument?</i> Consider carefully the difference between the two products for which costs are being compared: cotton and cloth. This argument assumes that lower wholesale prices for a raw product must necessarily result in lower

retail prices for a processed product. What other factors could have an impact on the final retail prices of cotton clothing? If any of the costs of transforming the raw product into a processed product increase, then the retail prices of cotton clothing will not necessarily fall.
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**A Correct.** This statement properly identifies a weakness in the argument.

B The relative prices of raw wool and raw cotton are irrelevant to price changes in raw cotton and processed cotton.

C One step between wholesale and retail prices is the operating cost of the retail store. If that operating cost has been constant rather than rising, it is possible that the retail prices could follow the lower wholesale prices. Thus the argument is not weakened.

D The argument notes that the wholesale price has fallen *in the last year* and that though the retail price *has not yet fallen, it will inevitably fall*. The argument has already taken the lag into account and is not weakened by this statement.

E Harvesting costs are part of the assumed increased price of raw cotton and do not affect current retail prices.

**The correct answer is A.**

31. A recent spate of launching and operating mishaps with television satellites led to a corresponding surge in claims against companies underwriting satellite insurance. As a result, insurance premiums shot up, making satellites more expensive to launch and operate. This, in turn, had added to the pressure to squeeze more performance out of currently operating satellites.

Which of the following, if true, taken together with the information above, best supports the conclusion that the cost of television satellites will continue to increase?

(A) Since the risk to insurers of satellites is spread over relatively few units, insurance premiums are necessarily very high.

(B) When satellites reach orbit and then fail, the causes of failure are generally impossible to pinpoint with confidence.

(C) The greater the performance demands placed on satellites, the more frequently those satellites break down.

(D) Most satellites are produced in such small numbers that no economies of scale can be realized.

(E) Since many satellites are built by unwieldy international consortia, inefficiencies are inevitable.



Argument Evaluation

<b>Situation</b>	A rise in the number of claims after a series of accidents has forced insurance companies to raise prices for coverage of television satellites. Consequently, new satellites are more expensive, and existing satellites must perform more. The cost of television satellites will continue to increase.
<b>Reasoning</b>	<i>Why might the cost continue to increase?</i> The passage says that the existing satellites are being asked to work harder than previously. If that increase in workload brings with it an increased number of breakdowns, growing satellite repair and replacement costs will add to the already increased cost of insurance premiums.

A The high rate of premiums is a given; nothing in this statement reflects why the costs would increase further.

B The difficulty of diagnosing the causes of satellite failure shows one reason the costs are high; it does not show why they are increasing.

**C Correct.** This statement properly identifies a factor that explains why costs will continue to increase.

D The small number of satellites shows one reason they are expensive; it does not explain why costs would continue to increase.

E The inefficiencies may partially account for initial high costs; nothing in this statement explains an increase in costs.

The correct answer is C.

32. If the airspace around centrally located airports were restricted to commercial airliners and only those private planes equipped with radar, most of the private-plane traffic would be forced to use outlying airfields. Such a reduction in the amount of private-plane traffic would reduce the risk of midair collision around the centrally located airports.

The conclusion drawn in the first sentence depends on which of the following assumptions?

(A) Outlying airfields would be as convenient as centrally located airports for most pilots of private planes.

(B) Most outlying airfields are not equipped to handle commercial-airline traffic.

(C) Most private planes that use centrally located airports are not equipped with radar.

(D) Commercial airliners are at greater risk of becoming involved in midair collisions than are private planes.

(E) A reduction in the risk of midair collision would eventually lead to increases in commercial airline traffic.

Argument Construction

Situation	Only commercial airliners and private planes with radar would be allowed to use the airspace around centrally located airports; most private-plane traffic would use outlying airfields instead. The result would be fewer midair collisions around centrally located airports.
Reasoning	<i>What assumption underlies the conclusion that most private planes would be forced to use outlying airfields?</i> The argument assumes that if the proposed restriction were put in place, most private-plane traffic would be rerouted to outlying airports. Because the restriction allows private planes that have radar to land at the centrally located airports, it must be assumed that the planes involved in most private-plane traffic at those airports are not equipped with radar.

- A Convenience is not at issue.
- B The capacity of outlying airfields to handle commercial airlines is outside the scope of the question.
- C Correct.** This statement properly identifies the assumption that most of these private planes lack radar and would no longer be allowed to land at the centrally located airports.
- D Private-plane traffic could be diverted to outlying airfields even if this statement were not true.
- E The future of commercial airline traffic is beyond the scope of the question.

The correct answer is C.

33. Many office buildings designed to prevent outside air from entering have been shown to have elevated levels of various toxic substances circulating through the air inside, a phenomenon known as sick building syndrome. Yet the air in other office buildings does not have elevated levels of these substances, even though those buildings are the same age as the “sick” buildings and have similar designs and ventilation systems.
- Which of the following, if true, most helps to explain why not all office buildings designed to prevent outside air from entering have air that contains elevated levels of toxic substances?
- (A) Certain adhesives and drying agents used in particular types of furniture, carpets, and paint contribute the bulk of the toxic substances that circulate in the air of office buildings.

- (B) Most office buildings with sick building syndrome were built between 1950 and 1990.
- (C) Among buildings designed to prevent outside air from entering, houses are no less likely than office buildings to have air that contains elevated levels of toxic substances.
- (D) The toxic substances that are found in the air of “sick” office buildings are substances that are found in at least small quantities in nearly every building.
- (E) Office buildings with windows that can readily be opened are unlikely to suffer from sick building syndrome.

Argument Evaluation

Situation	Many office buildings designed to prevent outside air from entering have elevated levels of toxic substances in their interior air, but other such buildings similar in age, design, and ventilation do not.
Reasoning	<i>What would help to explain the difference in air quality among buildings similar in age, design, and ventilation?</i> If office buildings are designed to prevent outside air from entering, toxic substances emitted into the interior air might not be ventilated out quickly, and thus might become more concentrated inside the building. But if such toxic substances are not emitted into a building’s interior air in the first place, they will not become concentrated there, even if the building is poorly ventilated. So any factor that suggests why toxic substances are emitted into the interior air of some buildings but not others of similar age and design would help to explain the difference in the buildings’ air quality.

- A Correct.** Some buildings may have these types of furniture, carpets, and paint, while other buildings similar in age, design, and ventilation do not.
- B Since all these buildings were built during the same period, this does not help to explain the difference in air quality among buildings similar in age.
- C The passage concerns air quality in office buildings only, not in houses.
- D This does not help to explain why these toxic substances are more concentrated in some office buildings than in others.
- E The passage concerns the differences in air quality only among office buildings that were designed to prevent outside air from entering.

The correct answer is A.

34. A discount retailer of basic household necessities employs thousands of people and pays most of them at the minimum wage rate. Yet following a federally mandated

increase of the minimum wage rate that increased the retailer’s operating costs considerably, the retailer’s profits increased markedly.

Which of the following, if true, most helps to resolve the apparent paradox?

- (A) Over half of the retailer’s operating costs consist of payroll expenditures; yet only a small percentage of those expenditures go to pay management salaries.
- (B) The retailer’s customer base is made up primarily of people who earn, or who depend on the earnings of others who earn, the minimum wage.
- (C) The retailer’s operating costs, other than wages, increased substantially after the increase in the minimum wage rate went into effect.
- (D) When the increase in the minimum wage rate went into effect, the retailer also raised the wage rate for employees who had been earning just above minimum wage.
- (E) The majority of the retailer’s employees work as cashiers, and most cashiers are paid the minimum wage.

Argument Evaluation

Situation	A discount retailer of household necessities pays the minimum wage to most of its employees. When the minimum wage rate went up, the retailer’s operating costs rose. However, its profits also rose.
Reasoning	<i>What information helps explain the paradoxical situation that the retailer’s profits rose even though its costs rose?</i> Consider the nature of the cost increase: wages have gone up. If the retailer’s customer base includes many people who earn minimum wage, their buying power has risen with the minimum wage and they can spend more. This would explain the rise in profits.

- A This statement helps explain the impact of the wage-rate increase on costs but does not explain how rising costs could lead to profits.
- B Correct.** This statement properly explains the surprising impact of the wage-rate increase on profits.
- C If the retailer’s other costs also rose, then the paradox of the retailer’s profits is even more mysterious.
- D Increasing other wages contributes to even higher operating costs; there is no information to explain how higher costs could lead to profits.
- E This detail about minimum-wage jobs does not explain how the retailer could be gaining profits when costs are rising.

The correct answer is B.

35. Premature babies who receive regular massages are more active than premature babies who do not. Even when all the babies drink the same amount of milk, the massaged babies gain more weight than do the unmassaged babies. This is puzzling because a more active person generally requires a greater food intake to maintain or gain weight.

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

- (A) Increased activity leads to increased levels of hunger, especially when food intake is not also increased.
- (B) Massage increases premature babies’ curiosity about their environment, and curiosity leads to increased activity.
- (C) Increased activity causes the intestines of premature babies to mature more quickly, enabling the babies to digest and absorb more of the nutrients in the milk they drink.
- (D) Massage does not increase the growth rate of babies over one year old, if the babies had not been previously massaged.
- (E) Premature babies require a daily intake of nutrients that is significantly higher than that required by babies who were not born prematurely.

**Argument Construction**

<b>Situation</b>	Premature babies who receive regular massages are more active and gain more weight than unmassaged premature babies do, even when they drink the same amount of milk.
<b>Reasoning</b>	<i>What would help to explain how the massaged babies could be more active than the unmassaged babies and yet still gain more weight without consuming more milk?</i> If the massaged babies are burning more calories than unmassaged babies through their extra activity, but are not consuming more calories in the form of milk, then how are they gaining more weight than the unmassaged babies? Possible explanations could cite factors suggesting how the massaged babies might not actually burn more calories despite their greater activity; how they might consume or absorb more calories even without consuming more milk; or how they might gain more weight without extra calorie intake.

- A Increased hunger without increased food intake would not help to explain why the massaged babies are gaining more weight.
- B This only helps to explain why the massaged babies are more active, not why they are gaining more weight without consuming more milk.
- C Correct.** This suggests that the increased activity of the massaged babies

could increase their calorie and nutrient intake from a given amount of milk, thereby explaining how they could gain extra weight without drinking more milk.

D This suggests that the apparent discrepancy is only present in premature babies under one year old, but it does not explain why that discrepancy exists.

E The passage does not compare premature babies to babies that were not born prematurely, but rather only compares premature babies that are massaged to premature babies that are not massaged.

**The correct answer is C.**

36. An eyeglass manufacturer tried to boost sales for the summer quarter by offering its distributors a special discount if their orders for that quarter exceeded those for last year’s summer quarter by at least 20 percent. Many distributors qualified for this discount. Even with much merchandise discounted, sales increased enough to produce a healthy gain in net profits. The manufacturer plans to repeat this success by offering the same sort of discount for the fall quarter.

Which of the following, if true, most clearly points to a flaw in the manufacturer’s plan to repeat the successful performance of the summer quarter?

- (A) In general, a distributor’s orders for the summer quarter are no higher than those for the spring quarter.
- (B) Along with offering special discounts to qualifying distributors, the manufacturer increased newspaper and radio advertising in those distributors’ sales areas.
- (C) The distributors most likely to qualify for the manufacturer’s special discount are those whose orders were unusually low a year earlier.
- (D) The distributors who qualified for the manufacturer’s special discount were free to decide how much of that discount to pass on to their own customers.
- (E) The distributors’ ordering more goods in the summer quarter left them overstocked for the fall quarter.

**Evaluation of a Plan**

<b>Situation</b>	A manufacturer successfully boosted sales and gained net profits for the summer quarter by giving distributors a discount if their orders exceeded the previous summer’s orders by 20 percent. The manufacturer plans to repeat the success by offering the discount again in the fall quarter.
<b>Reasoning</b>	<i>What is the flaw in the manufacturer’s plan?</i> The plan assumes that an action that succeeded once will work a second time. Why might

the plan not work this time? If the distributors increased their orders during the summer simply because they were eager to take advantage of the discount, the result may be that they are now overstocked for the fall quarter. If so, they will not need to place orders for more goods, and the plan of continuing the discount will have less chance of success now.

A This is irrelevant to the plan since relevant quarters—fall and summer—are not being compared.

B Increased advertising should continue to contribute to the plan's success.

C Even if the qualifying distributors reached only normal levels of sales, there may be other distributors who will qualify in the fall because they had low sales one year earlier.

D The distributors' freedom to decide how much of the discount to pass on to customers is equally true in both summer and fall quarters and should not affect the success of the plan.

**E Correct.** This statement properly identifies a flaw in the plan.

**The correct answer is E.**

37. Vitacorp, a manufacturer, wishes to make its information booth at an industry convention more productive in terms of boosting sales. The booth offers information introducing the company's new products and services. To achieve the desired result, Vitacorp's marketing department will attempt to attract more people to the booth. The marketing director's first measure was to instruct each salesperson to call his or her five best customers and personally invite them to visit the booth.

Which of the following, if true, most strongly supports the prediction that the marketing director's first measure will contribute to meeting the goal of boosting sales?

(A) Vitacorp's salespeople routinely inform each important customer about new products and services as soon as the decision to launch them has been made.

(B) Many of Vitacorp's competitors have made plans for making their own information booths more productive in increasing sales.

(C) An information booth that is well attended tends to attract visitors who would not otherwise have attended the booth.

(D) Most of Vitacorp's best customers also have business dealings with Vitacorp's competitors.

(E) Vitacorp has fewer new products and services available this year than it

had in previous years.

Evaluation of a Plan

Situation	A manufacturer wants increased sales from its information booth at an industry convention. To boost sales, the marketing department seeks to attract more people to the booth, and the marketing director tells the salespeople to invite their best customers to visit the booth.
Reasoning	<i>Which point best supports the marketing director’s plan?</i> First ask what would be a valid reason for inviting faithful customers to visit the booth. Such invitations should assure that the booth will generally be busy with visitors. If people are more attracted to a well-attended booth than to an empty one, then more potential customers are likely to visit the busy booth, and more visitors should produce more sales. The marketing director is operating on the principle that success breeds success. Making sure that the booth is well attended by Vitacorp’s current customers is likely to attract more potential customers and thus boost sales.

- A If the best customers already have all available new product and service information, they are unlikely to respond to the invitation to visit the booth; this point is a weakness in the plan.
- B Competitors’ efforts toward the same goal may hurt Vitacorp’s efforts, so this point does not support the plan.
- C Correct.** This statement properly identifies a point supporting the marketing director’s plan.
- D The plan simply aims to attract more visitors to Vitacorp’s booth to encourage more sales and does not address the fact that Vitacorp shares its customers with its competitors.
- E This information, if anything, would suggest that the plan would be less successful.

The correct answer is C.

38. Budget constraints have made police officials consider reassigning a considerable number of officers from traffic enforcement to work on higher-priority, serious crimes. Reducing traffic enforcement for this reason would be counterproductive, however, in light of the tendency of criminals to use cars when engaged in the commission of serious crimes. An officer stopping a car for a traffic violation can make a search that turns up evidence of serious crime.
- Which of the following, if true, most strengthens the argument given?
- (A) An officer who stops a car containing evidence of the commission of a serious crime risks a violent confrontation, even if the vehicle was stopped



- only for a traffic violation.
- (B) When the public becomes aware that traffic enforcement has lessened, it typically becomes lax in obeying traffic rules.
- (C) Those willing to break the law to commit serious crimes are often in committing such crimes unwilling to observe what they regard as the lesser constraints of traffic law.
- (D) The offenders committing serious crimes who would be caught because of traffic violations are not the same group of individuals as those who would be caught if the arresting officers were reassigned from traffic enforcement.
- (E) The great majority of persons who are stopped by officers for traffic violations are not guilty of any serious crimes.

Argument Construction

Situation	Budget constraints have made police officials consider reassigning many officers from traffic enforcement to work on serious crimes. But criminals often drive when committing serious crimes, and police who stop cars for traffic violations can find evidence of those crimes.
Reasoning	<i>What additional information, when combined with the argument provided, would suggest that it would be counterproductive to reassign officers from traffic enforcement to work on serious crimes?</i> The argument implicitly reasons that because officers working on traffic enforcement can turn up evidence of serious crimes by searching cars that commit traffic violations, reassigning those officers would hinder police efforts to prevent serious crime, even if the officers were reassigned to work directly on serious crime. The argument could be strengthened by information suggesting that traffic enforcement may increase the probability that evidence relating to serious crimes will be discovered.

- A If anything, this risk of violence might discourage traffic enforcement officers from stopping and searching as many cars, thus reducing their effectiveness at preventing serious crimes.
- B This suggests that reassigning officers from traffic enforcement to work on serious crimes would increase the number of unpunished minor traffic violations, not the number of unpunished serious crimes.
- C Correct.** This suggests that people committing serious crimes often commit traffic violations as well, increasing the likelihood that traffic enforcement officers will stop and search their cars and find evidence of those crimes.

- D The question at issue is not whether the same offenders would be caught if the officers were reassigned, but rather whether more or fewer offenders would be caught.
- E This weakens the argument by suggesting that most work by traffic enforcement officers is unrelated to preventing serious crimes.

**The correct answer is C.**

39. Pro-Tect Insurance Company has recently been paying out more on car-theft claims than it expected. Cars with special antitheft devices or alarm systems are much less likely to be stolen than are other cars. Consequently Pro-Tect, as part of an effort to reduce its annual payouts, will offer a discount to holders of car-theft policies if their cars have antitheft devices or alarm systems.

Which of the following, if true, provides the strongest indication that the plan is likely to achieve its goal?

- (A) The decrease in the risk of car theft conferred by having a car alarm is greatest when only a few cars have such alarms.
- (B) The number of policyholders who have filed a claim in the past year is higher for Pro-Tect than for other insurance companies.
- (C) In one or two years, the discount that Pro-Tect is offering will amount to more than the cost of buying certain highly effective antitheft devices.
- (D) Currently, Pro-Tect cannot legally raise the premiums it charges for a given amount of insurance against car theft.
- (E) The amount Pro-Tect has been paying out on car-theft claims has been greater for some models of car than for others.

**Evaluation of a Plan**

<b>Situation</b>	An insurance company is paying more money on car-theft claims than anticipated. To reduce these payments, the company is planning to offer discounts to customers whose cars have antitheft devices or alarm systems, because such cars are less likely to be stolen.
<b>Reasoning</b>	<i>What piece of information would indicate that the plan is likely to succeed?</i> Pro-Tect wishes to reduce its annual payouts, and one way for that to happen is for fewer cars insured by Pro-Tect to be stolen. To help accomplish this, Pro-Tect is offering discounts to policyholders whose cars are so equipped, because cars equipped with antitheft devices or alarm systems are less likely to be stolen than are cars without such devices. What would interfere with the success of Pro-Tect’s plan? Car owners would probably resist investing in antitheft devices or alarm systems if the cost of such systems is higher than the discount they will receive. So if Pro-Tect

	sets the discount at a level that makes installing antitheft devices seem like a bargain to car owners, the plan will most likely succeed.
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A Pro-Tect's plan is designed to increase the number of cars equipped with car alarms. If having more cars equipped with car alarms reduces those alarms' effectivity in preventing thefts, then Pro-Tect's plan is unlikely to achieve its goal.

B Pro-Tect's claims in relation to those of other insurance companies are not relevant to whether Pro-Tect's plan to reduce its own car-theft claims will achieve its goal.

**C Correct.** This statement suggests that Pro-Tect's plan will provide an effective incentive for car owners to install antitheft devices; this statement therefore properly identifies information that indicates the plan is likely to achieve its goal.

D Because Pro-Tect's plan does not involve raising the premiums it charges, restrictions on its ability to do so are irrelevant to whether that plan will achieve its goal.

E Pro-Tect's plan does not distinguish among different models of car, so this statement indicates nothing about whether the proposed plan will succeed.

**The correct answer is C.**

40. Start-up companies financed by venture capitalists have a much lower failure rate than companies financed by other means. Source of financing, therefore, must be a more important causative factor in the success of a start-up company than are such factors as the personal characteristics of the entrepreneur, the quality of strategic planning, or the management structure of the company.

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

(A) Venture capitalists tend to be more responsive than other sources of financing to changes in a start-up company's financial needs.

(B) The strategic planning of a start-up company is a less important factor in the long-term success of the company than are the personal characteristics of the entrepreneur.

(C) More than half of all new companies fail within five years.

(D) The management structures of start-up companies are generally less formal than the management structures of ongoing businesses.

(E) Venture capitalists base their decisions to fund start-up companies on such factors as the characteristics of the entrepreneur and quality of strategic planning of the company.

**Argument Evaluation**

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<b>Situation</b>	When venture capitalists fund start-up companies, the failure rate is much lower than when the companies are funded by other means. The success of start-up companies, then, may be attributed more to their source of funding than to any other factor.
<b>Reasoning</b>	<i>What point weakens the argument?</i> The argument concludes that the source of funding is the single most important factor in determining the success of a start-up company. But what if the source of that funding, venture capitalists, considers other factors before making its investment? Venture capitalists may evaluate the characteristics of the entrepreneur as well as the company's strategic plan and management structure before deciding to fund the start-up company. If this is the case, then the most important causative factor in the success of the company cannot be said to be the source of the funding.

A The responsiveness of venture capitalists is a point in favor of the argument, not against it.

B This statement about the relative importance of strategic planning and the personality of the entrepreneur does not weaken the argument because it does not address the importance of these factors in relation to financial backing.

C The argument concerns only successful start-up companies, so high failure rates are irrelevant.

D The argument deals with the success rates of start-up companies based on their sources of funding. A comparison of start-up companies in general with ongoing businesses has no bearing on the argument.

**E Correct.** This statement properly identifies evidence that weakens the argument.

**The correct answer is E.**

41. Art restorers who have been studying the factors that cause Renaissance oil paintings to deteriorate physically when subject to climatic changes have found that the oil paint used in these paintings actually adjusts to these changes well. The restorers therefore hypothesize that it is a layer of material called gesso, which is under the paint, that causes the deterioration.

Which of the following, if true, most strongly supports the restorers' hypothesis?

- (A) Renaissance oil paintings with a thin layer of gesso are less likely to show deterioration in response to climatic changes than those with a thicker layer.
- (B) Renaissance oil paintings are often painted on wooden panels, which

- swell when humidity increases and contract when it declines.
- (C) Oil paint expands and contracts readily in response to changes in temperature, but it absorbs little water and so is little affected by changes in humidity.
- (D) An especially hard and nonabsorbent type of gesso was the raw material for moldings on the frames of Renaissance oil paintings.
- (E) Gesso layers applied by Renaissance painters typically consisted of a coarse base layer onto which several increasingly fine-grained layers were applied.

Argument Evaluation

Situation	Renaissance paintings are subject to deterioration due to changes in climate, but their actual paint is not a factor in this deterioration. Instead, restorers hypothesize, it is gesso, the material under the paint, that causes problems for the paintings.
Reasoning	<i>What would most strongly support the hypothesis that gesso is causing the deterioration?</i> An indication that gesso is affected by climatic changes would be most helpful in supporting the hypothesis. What could show that gesso is affected in this way? If the extent of a painting’s deterioration is directly related to the amount of gesso used under that painting, then the gesso clearly plays some part in that deterioration.

- A Correct.** This statement properly identifies a point supporting the hypothesis.
- B This suggests that another factor—the wood of the panels—has a role in the paintings’ deterioration. Thus it weakens the hypothesis that gesso causes the deterioration.
- C This merely reinforces given information, that the paint itself is not responsible for the paintings’ deterioration.
- D Because this gives no information about any connection between this especially hard and nonabsorbent type of gesso and the type of gesso used under the paint in Renaissance paintings, the properties and usage of the former type of gesso are irrelevant to the question of whether gesso is responsible for the paintings’ deterioration.
- E Because we are told nothing about whether this technique of gesso application increases or decreases the likelihood that gesso will be affected by climatic change, it does not support the restorers’ hypothesis.

The correct answer is A.

42. Automobile Dealer's Advertisement:

The Highway Traffic Safety Institute reports that the PZ 1000 has the fewest injuries per accident of any car in its class. This shows that the PZ 1000 is one of the safest cars available today.

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

- (A) The Highway Traffic Safety Institute report listed many cars in other classes that had more injuries per accident than did the PZ 1000.
- (B) In recent years many more PZ 1000s have been sold than have any other kind of car in its class.
- (C) Cars in the class to which the PZ 1000 belongs are more likely to be involved in accidents than are other types of cars.
- (D) The difference between the number of injuries per accident for the PZ 1000 and that for other cars in its class is quite pronounced.
- (E) The Highway Traffic Safety Institute issues reports only once a year.

Argument Evaluation

<b>Situation</b>	An advertisement claims that the PZ 1000 is one of the safest cars available; it bases this claim on the Highway Traffic Safety Institute's report that this model had the fewest injuries per accident of any car in its class.
<b>Reasoning</b>	<i>What point weakens the advertisement's claim?</i> Examine closely the difference between the report and the conclusion the advertisement draws from it. While the Highway Traffic Safety Institute compares the PZ 1000 to other cars <i>in its class</i> , the advertisement compares the PZ 1000 to <i>all cars available today</i> . What if the class of cars to which the PZ 1000 belongs is a more dangerous class of cars? In that case, while the PZ 1000 may be the safest car of a dangerous class, it cannot be said to be one of the safest cars available.

- A The higher incidence of injuries per accident in other classes of cars supports rather than weakens the advertisement's argument.
- B The fact that the PZ 1000 is the best selling car in its class might be explained by the fact that it is the safest car in its class, but if this has any effect on the argument at all, it would be to strengthen rather than weaken it.
- C Correct.** This statement properly identifies a weakness in the advertisement's argument.
- D This slightly strengthens, rather than weakens, the argument.

E The frequency of the reports is irrelevant to the advertisement’s claim.

**The correct answer is C.**

43. Which of the following most logically completes the passage?

It is generally believed that people receiving frequent medical checkups are likely to need hospitalization less frequently than they would otherwise; after all, many things can be done following a checkup to prevent problems that, if ignored, might become acute and then require hospitalization. But for people with chronic illnesses, frequent medical checkups are likely to lead to more frequent hospitalization since \_\_\_\_\_.

- (A) the recommended treatments for complications of many chronic illnesses involve hospitalization even if those complications are detected while barely noticeable
- (B) medical checkups sometimes do not reveal early symptoms of those chronic illnesses that are best treated in a hospital
- (C) the average length of a hospital stay is the same for those who receive frequent checkups as for those who do not
- (D) people with chronic illnesses generally receive medical checkups more frequently than people who are not chronically ill
- (E) the average length of a hospital stay for people with a chronic illness tends to increase as the illness progresses

**Argument Construction**

<b>Situation</b>	Actions taken after medical checkups can prevent problems that might otherwise become acute and require hospitalization. But for people with chronic illnesses, frequent medical checkups tend to lead to more frequent hospitalizations.
<b>Reasoning</b>	<i>What would help to explain why more frequent medical checkups tend to lead to more frequent hospitalizations for people with chronic illnesses?</i> The first sentence of the passage suggests that medical checkups should make hospitalization less frequent by catching medical problems before they become severe enough to require hospitalization. But if the medical problems that checkups typically catch in people with chronic illnesses already require hospitalization when they are caught, the checkups might result in such people being hospitalized more frequently rather than less frequently.

**A Correct.** This suggests that in people with chronic illnesses, checkups may more often result in treatments that require hospitalization than in treatments that could prevent hospitalization.

B The fact that occasionally a checkup fails to reveal early symptoms of a chronic illness best treated in a hospital does not indicate that frequent checkups of people with chronic illnesses would lead to more frequent hospitalization than less frequent checkups would.

C The question at issue concerns the frequency of hospitalization, not the average length of hospital stays.

D The question at issue is why people with chronic illnesses who have more frequent checkups tend to be hospitalized more frequently than other chronically ill people, not why they tend to be hospitalized more frequently than people who are not chronically ill.

E Again, the question at issue concerns the frequency of hospitalization, not the average length of hospital stays. In any case, we are not told whether people with chronic illnesses tend to have checkups more or less frequently as their illnesses progress.

**The correct answer is A.**

44. Two decades after the Emerald River Dam was built, none of the eight fish species native to the Emerald River was still reproducing adequately in the river below the dam. Since the dam reduced the annual range of water temperature in the river below the dam from 50 degrees to 6 degrees, scientists have hypothesized that sharply rising water temperatures must be involved in signaling the native species to begin the reproductive cycle.

Which of the following statements, if true, would most strengthen the scientists' hypothesis?

(A) The native fish species were still able to reproduce only in side streams of the river below the dam where the annual temperature range remains approximately 50 degrees.

(B) Before the dam was built, the Emerald River annually overflowed its banks, creating backwaters that were critical breeding areas for the native species of fish.

(C) The lowest recorded temperature of the Emerald River before the dam was built was 34 degrees, whereas the lowest recorded temperature of the river after the dam was built has been 43 degrees.

(D) Nonnative species of fish, introduced into the Emerald River after the dam was built, have begun competing with the declining native fish species for food and space.

(E) Five of the fish species native to the Emerald River are not native to any other river in North America.

**Argument Evaluation**

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<b>Situation</b>	The construction of a dam has significantly reduced the range of water temperatures in the river below the dam. Scientists have implicated this change in the failure of native fish species to reproduce adequately.
<b>Reasoning</b>	<i>What evidence would strengthen the hypothesis?</i> To test the hypothesis, scientists need to study the same fish in the same river, but with only one variable changed: the temperature range of the water. If the same species of fish successfully reproduce in water that retains the same temperature range that the river had had before the dam was built, then the scientists have likely found the cause of the problem.

**A Correct.** This statement properly identifies evidence that strengthens the scientists' hypothesis.

B The overflow's creation of breeding areas offers an alternative hypothesis; it rivals rather than strengthens the hypothesis about temperature range.

C These differences in lowest recorded temperatures are simply specific data points related to the proposed cause; they do nothing to support the hypothesis.

D The introduction of nonnative species competing for food and space is an additional variable, and thus offers an alternative hypothesis.

E The rareness of certain species points to the severity of the problem, not to its cause.

**The correct answer is A.**

45. Dental researchers recently discovered that toothbrushes can become contaminated with bacteria that cause pneumonia and strep throat. They found that contamination usually occurs after toothbrushes have been used for four weeks. For that reason, people should replace their toothbrushes at least once a month.

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

(A) The dental researchers could not discover why toothbrush contamination usually occurred only after toothbrushes had been used for four weeks.

(B) The dental researchers failed to investigate contamination of toothbrushes by viruses, yeasts, and other pathogenic microorganisms.

(C) The dental researchers found that among people who used toothbrushes contaminated with bacteria that cause pneumonia and strep throat, the incidence of these diseases was no higher than among people who used uncontaminated toothbrushes.

- (D) The dental researchers found that people who rinsed their toothbrushes thoroughly in hot water after each use were as likely to have contaminated toothbrushes as were people who only rinsed their toothbrushes hurriedly in cold water after each use.
- (E) The dental researchers found that, after six weeks of use, greater length of use of a toothbrush did not correlate with a higher number of bacteria being present.

**Argument Evaluation**

<b>Situation</b>	Researchers have found that, after four weeks of use, toothbrushes may become contaminated with disease bacteria. Therefore, toothbrushes should be replaced once a month.
<b>Reasoning</b>	<i>What information weakens the conclusion?</i> The passage concludes that contaminated toothbrushes should be replaced monthly. Clearly, the assumption underlying this conclusion is that such replacement is necessary because the bacterial contamination is potentially harmful to the user of the toothbrush. Do people actually become ill because of their use of contaminated toothbrushes? If a comparison of disease rates for people using uncontaminated toothbrushes and for people using contaminated toothbrushes shows no difference between the groups, then the assumption about the potential harm is proven wrong and support for the conclusion is thereby weakened.

- A The recommendation to change every four weeks is not weakened simply because researchers cannot explain why it takes that long for contamination to occur.
- B The failure to investigate other possible contaminants of toothbrushes does not weaken the recommendation.
- C Correct.** This statement properly identifies the information that weakens the conclusion: using contaminated toothbrushes is no more likely to result in disease than using uncontaminated ones, and thus changing toothbrushes every month is unnecessary.
- D Since even careful maintenance of toothbrushes does not reduce contamination, the recommendation is strengthened.
- E If the contamination still remains at six weeks, even if it is not worse, the recommendation based on the bacteria existing at four weeks is not weakened.

**The correct answer is C.**

46. Meat from chickens contaminated with salmonella bacteria can cause serious food poisoning. Capsaicin, the chemical that gives chili peppers their hot flavor, has

antibacterial properties. Chickens do not have taste receptors for capsaicin and will readily eat feed laced with capsaicin. When chickens were fed such feed and then exposed to salmonella bacteria, relatively few of them became contaminated with salmonella.

In deciding whether the feed would be useful in raising salmonella-free chicken for retail sale, it would be most helpful to determine which of the following?

- (A) Whether feeding capsaicin to chickens affects the taste of their meat
- (B) Whether eating capsaicin reduces the risk of salmonella poisoning for humans
- (C) Whether chicken is more prone to salmonella contamination than other kinds of meat
- (D) Whether appropriate cooking of chicken contaminated with salmonella can always prevent food poisoning
- (E) Whether capsaicin can be obtained only from chili peppers

Argument Evaluation

Situation	Chickens will readily eat feed laced with capsaicin, which appears to protect them from contamination with salmonella bacteria that can cause food poisoning.
Reasoning	<i>What information would help determine whether using the feed would be an effective strategy for raising salmonella-free chicken for retail sale?</i> In order for the strategy to be effective, it must be economically feasible for farmers to raise chickens using the feed, and there must be enough consumer demand for chickens raised this way. So any information about factors likely to affect either the economic feasibility of raising the chickens or consumer demand for them could be helpful in determining how useful the feed would be.

**A Correct.** If chicken producers tried to market meat from capsaicin-fed chickens without knowing whether the taste is affected, they would risk alienating consumers. Of course, if they found that the taste is affected, they would then need to do further investigations to determine how consumers would likely respond to the difference. If consumers did not like the taste, this could negatively affect demand for the chickens. In that case, using the feed would not be an effective way to raise chickens for retail sale.

B There are two ways this might be considered relevant. First, it might be thought that because capsaicin reduces the risk of salmonella poisoning in humans, it will also do so in chickens; but we already have good evidence of that in the argument. Second, it might be thought that, if the capsaicin does not produce chickens that are totally salmonella free, then if any capsaicin

remains in the chickens, it will help prevent any humans who consume the chicken from getting salmonella poisoning. But the relevant issue is whether the capsaicin will make the chickens salmonella free, not whether humans will be protected whether the chickens are salmonella free or not.

C The susceptibility of other types of meat to salmonella contamination would not affect the usefulness of the feed for preventing such contamination in chicken.

D Presumably many people do not cook contaminated chicken appropriately, so consumers could still benefit from salmonella-free chicken whether or not appropriate cooking methods could prevent food poisoning.

E Regardless of whether capsaicin can be obtained from other sources, chili peppers may be a perfectly viable source.

**The correct answer is A.**

47. Laws requiring the use of headlights during daylight hours can prevent automobile collisions. However, since daylight visibility is worse in countries farther from the equator, any such laws would obviously be more effective in preventing collisions in those countries. In fact, the only countries that actually have such laws are farther from the equator than is the continental United States.

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

- (A) Drivers in the continental United States who used their headlights during the day would be just as likely to become involved in a collision as would drivers who did not use their headlights.
- (B) In many countries that are farther from the equator than is the continental United States, poor daylight visibility is the single most important factor in automobile collisions.
- (C) The proportion of automobile collisions that occur in the daytime is greater in the continental United States than in the countries that have daytime headlight laws.
- (D) Fewer automobile collisions probably occur each year in countries that have daytime headlight laws than occur within the continental United States.
- (E) Daytime headlight laws would probably do less to prevent automobile collisions in the continental United States than they do in the countries that have the laws.

**Argument Construction**

<b>Situation</b>	Laws requiring the use of headlights during the daytime are more
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	effective at preventing car collisions in countries with lower daylight visibility, that is, in countries at greater distances from the equator. The only countries having these laws are those located farther from the equator than is the continental United States.
<b>Reasoning</b>	<i>What conclusion can be drawn from this information?</i> Countries with daytime headlight laws are all farther from the equator than is the continental United States. The location is significant because daytime visibility is worse in those countries than it is in the continental United States. How effective at preventing collisions would such laws be in the continental United States with its greater proximity to the equator? It is reasonable to conclude that such laws would be less effective at preventing collisions there than they are in the countries farther from the equator.

A Although daytime headlight use may be less effective in countries with more daylight, it cannot be concluded that U.S. drivers using daytime headlights would gain no benefit from them and would be just as likely to have collisions as those who do not use them.

B The passage offers no evidence for the conclusion that poor visibility is the *greatest* cause for collisions in these countries.

C Many factors besides use of headlights during daylight hours influence accident rates, and these factors may vary widely from one country to another. We are given no information about these other factors or about their relative impact in various countries.

D Without specific data, no conclusion can be drawn about the relative number of accidents that occur.

**E Correct.** This statement properly identifies a conclusion to be drawn from the given information.

**The correct answer is E.**

48. In the past most airline companies minimized aircraft weight to minimize fuel costs. The safest airline seats were heavy, and airlines equipped their planes with few of these seats. This year the seat that has sold best to airlines has been the safest one—a clear indication that airlines are assigning a higher priority to safe seating than to minimizing fuel costs.

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

- (A) Last year’s best-selling airline seat was not the safest airline seat on the market.
- (B) No airline company has announced that it would be making safe seating a higher priority this year.

- (C) The price of fuel was higher this year than it had been in most of the years when the safest airline seats sold poorly.
- (D) Because of increases in the cost of materials, all airline seats were more expensive to manufacture this year than in any previous year.
- (E) Because of technological innovations, the safest airline seat on the market this year weighed less than most other airline seats on the market.

Argument Evaluation

Situation	The safest airline seats were heavy, but since additional weight meant higher fuel costs, airlines had bought few of these seats. Because the best-selling seats this year are the safest ones, the airlines have clearly reset their priorities, choosing safe seating over minimizing fuel costs.
Reasoning	<i>What information weakens this argument?</i> Previously, the safest seats were heavy, so the airlines purchased lighter—and less safe—seats to minimize fuel costs. But if the safest seat this year is among the lightest, the airlines may simply be pursuing their previous priority of minimizing fuel costs by reducing weight.

- A The new information does little more than corroborate information already provided in the premises.
- B This weakens the argument only if the argument assumes that if such a change in priorities *had* occurred, it *would have* been announced. But this is not assumed.
- C This tends to strengthen rather than weaken the argument. In a time of high fuel costs, if an airline chooses the safest seat regardless of weight, that choice suggests that the airline is making safety a greater priority than fuel economy.
- D This information does not weaken the argument, since it suggests no reason for purchasing one type of seat as opposed to another.
- E Correct.** This statement disconfirms a critically important assumption made by the argument—namely that the currently safest seat would also be heavier than the less safe seats.

The correct answer is E.

49. Division manager: I want to replace the Microton computers in my division with Vitech computers.
- General manager: Why?
- Division manager: It costs 28 percent less to train new staff on the Vitech.
- General manager: But that is not a good enough reason. We can simply hire only

people who already know how to use the Microton computer.

Which of the following, if true, most seriously undermines the general manager’s objection to the replacement of Microton computers with Vitechs?

- (A) Currently all employees in the company are required to attend workshops on how to use Microton computers in new applications.
- (B) Once employees learn how to use a computer, they tend to change employers more readily than before.
- (C) Experienced users of Microton computers command much higher salaries than do prospective employees who have no experience in the use of computers.
- (D) The average productivity of employees in the general manager’s company is below the average productivity of the employees of its competitors.
- (E) The high costs of replacement parts make Vitech computers more expensive to maintain than Microton computers.

Argument Evaluation

Situation	A division manager wants to replace Microton computers with Vitech computers in order to reduce training costs for new staff. The general manager objects to this reasoning, arguing that the company can hire only those people who already know how to use the Microton computers.
Reasoning	<i>What point weakens the general manager’s argument?</i> The division manager’s preference for Vitech equipment is based on reduced training costs for newly hired staff. The general manager rejects this cost-reduction rationale and counters by suggesting a way to avoid these costs altogether. Both managers thus accept costs as the basis for making the decision between the two brands. Any evidence that overall costs would be higher when using the Microton computers weakens the general manager’s argument. If the costs associated with employing experienced Microton users are greater, then hiring exclusively from this pool and paying their <i>much higher</i> salaries may result in higher overall costs for the company than the costs for training new staff on the Vitechs.

A This information about Microton suggests that even staff who have Microton skills when hired would still have to be trained with all other staff in new applications. Does this undermine the general manager’s reply? No—because the information given about training costs by the division manager refers only to the costs of training newly hired staff.

B The information that computer-skilled staff move easily to a new job suggests that it might be possible to do what the general manager recommends. Obviously that does not undermine the general manager’s recommendation.

**C Correct.** This statement properly identifies evidence that undermines the general manager’s argument.

D Productivity at the company and at its competitors is not at issue.

E Only staff-related costs, not the cost of maintaining the computers, are being discussed in the argument.

**The correct answer is C.**

50. Which of the following most logically completes the argument below?

When mercury-vapor streetlights are used in areas inhabited by insect-eating bats, the bats feed almost exclusively around the lights, because the lights attract flying insects. In Greenville, the mercury-vapor streetlights are about to be replaced with energy-saving sodium streetlights, which do not attract insects. This change is likely to result in a drop in the population of insect-eating bats in Greenville, since \_\_\_\_\_.

- (A) the bats do not begin to hunt until after sundown
- (B) the bats are unlikely to feed on insects that do not fly
- (C) the highway department will be able to replace mercury-vapor streetlights with sodium streetlights within a relatively short time and without disrupting the continuity of lighting at the locations of the streetlights
- (D) in the absence of local concentrations of the flying insects on which bats feed, the bats expend much more energy on hunting for food, requiring much larger quantities of insects to sustain each bat
- (E) bats use echolocation to catch insects and therefore gain no advantage from the fact that insects flying in the vicinity of streetlights are visible at night

**Argument Construction**

<b>Situation</b>	In areas with mercury-vapor streetlights, any insect-eating bats feed almost exclusively around the lights, which attract flying insects. In Greenville, mercury-vapor streetlights will soon be replaced with sodium streetlights that do not attract insects.
<b>Reasoning</b>	<i>What evidence would suggest that the change in streetlights will reduce Greenville’s population of insect-eating bats?</i> Since the sodium streetlights will not attract flying insects, the bats will



probably stop focusing their feeding around Greenville's streetlights after the lights are changed. A statement providing evidence that this will make it harder for the bats to get enough food to sustain themselves would support the conclusion that the change is likely to reduce Greenville's bat population and thus would logically complete the argument.

A Insect-eating bats existed long before streetlights did, so they can probably find insects away from streetlights even if they hunt only after sundown.

B Greenville will almost certainly still have flying insects for the bats to eat after the change, even if those insects no longer gather around the streetlights.

C If anything, such a smooth transition would be less likely to disturb the bats and therefore less likely to reduce their population.

**D Correct.** Since there will be no local concentrations of flying insects around Greenville streetlights after the change, the bats will most likely have more trouble getting enough to eat, and that their local population will therefore fall.

E The advantage that the bats gain from mercury-vapor streetlights comes from the high concentration of insects. The fact that the bats get no additional advantage from the insects' visibility tells us nothing about what affect the change to a different type of light might have.

**The correct answer is D.**

51. There is a great deal of geographical variation in the frequency of many surgical procedures—up to tenfold variation per hundred thousand people between different areas in the numbers of hysterectomies, prostatectomies, and tonsillectomies.

To support a conclusion that much of the variation is due to unnecessary surgical procedures, it would be most important to establish which of the following?

(A) A local board of review at each hospital examines the records of every operation to determine whether the surgical procedure was necessary.

(B) The variation is unrelated to factors (other than the surgical procedures themselves) that influence the incidence of diseases for which surgery might be considered.

(C) There are several categories of surgical procedure (other than hysterectomies, prostatectomies, and tonsillectomies) that are often performed unnecessarily.

(D) For certain surgical procedures, it is difficult to determine after the operation whether the procedures were necessary or whether alternative

treatment would have succeeded.

(E) With respect to how often they are performed unnecessarily, hysterectomies, prostatectomies, and tonsillectomies are representative of surgical procedures in general.

Argument Construction

Situation	The frequency of certain surgical procedures, e.g., hysterectomies, prostatectomies, and tonsillectomies, varies dramatically by geographical region. It may be possible to conclude that the disparity is to a large extent the result of the performance of unnecessary surgeries.
Reasoning	<i>What additional information must be true for this conclusion to hold?</i> Is it possible that different factors in different regions might reasonably account for the variation? Diseases or medical conditions for which these surgical procedures are appropriate might be more common in one geographical area than another. Unless the possibility of such geographical variations in the incidence of pertinent medical conditions is ruled out, it would be risky to conclude that the variation is attributable to unnecessary surgical procedures.

A This statement undermines such a conclusion since it cites a process in place for preventing or reducing unnecessary procedures.

**B Correct.** This statement suggests the geographical variation is not due to variations in incidence of certain diseases—and by eliminating this possibility, it helps to support the claim that unnecessary surgeries are being performed in some places.

C The argument is concerned only with hysterectomies, prostatectomies, and tonsillectomies; other surgical procedures are irrelevant.

D This information indicates that there is a fuzzy line dividing necessary from unnecessary surgeries—but this would apply in every place, not just in some; so it provides no support for the intended conclusion.

E The argument involves only the three kinds of surgery cited in the passage, so this statement is irrelevant to the conclusion.

The correct answer is B.

52. Rats injected with morphine exhibit decreased activity of the immune system, the bodily system that fights off infections. These same rats exhibited heightened blood levels of corticosteroids, chemicals secreted by the adrenal glands. Since corticosteroids can interfere with immune-system activity, scientists hypothesized that the way morphine reduces immune responses in rats is by stimulating the

adrenal glands to secrete additional corticosteroids into the bloodstream.

Which of the following experiments would yield the most useful results for evaluating the scientists’ hypothesis?

- (A) Injecting morphine into rats that already have heightened blood levels of corticosteroids and then observing their new blood levels of corticosteroids
- (B) Testing the level of immune-system activity of rats, removing their adrenal glands, and then testing the rats’ immune-system activity levels again
- (C) Injecting rats with corticosteroids and then observing how many of the rats contracted infections
- (D) Removing the adrenal glands of rats, injecting the rats with morphine, and then testing the level of the rats’ immune-system responses
- (E) Injecting rats with a drug that stimulates immune-system activity and then observing the level of corticosteroids in their bloodstreams

Argument Evaluation

Situation	Rats injected with morphine exhibit decreased immune-system activity and increased levels of corticosteroids, which are secreted by the adrenal glands and can interfere with immune-system activity.
Reasoning	<i>What further experiment would help determine whether morphine reduces immune responses in rats by stimulating the adrenal glands to release more corticosteroids?</i> Contrary to the scientists’ hypothesis, the experimental results might have occurred because the morphine injections directly reduced immune-system activity. Or the injections might have blocked some mechanism that reduces corticosteroid levels in the blood, even if the morphine did not stimulate the adrenal glands to produce more corticosteroids. To evaluate whether the scientists’ hypothesis is more plausible than these rival hypotheses, it would be helpful to know whether similar experimental results would occur after morphine injections even if adrenal gland activity did not change.

- A Morphine could stimulate the adrenal glands of rats with normal corticosteroid levels to produce more corticosteroids, whether or not it does so in rats whose corticosteroid levels are already heightened.
- B Such an experiment would not involve morphine and thus would not help to determine how morphine affects immune-system activity in rats.
- C Whether or not rats contract infections may not reliably indicate their levels of immune-system activity.

**D Correct.** If the immune system responses decreased after the morphine injections in this experiment, the hypothesis that it was by stimulation of the adrenal glands that morphine reduced immune-system activity would be undermined. But if no decrease in immune-system responses occurred, the hypothesis would be confirmed.

E Even if the mechanism by which a drug other than morphine increases immune-system activity were discovered, this discovery would not necessarily reveal the mechanism by which morphine reduces immune-system activity.

**The correct answer is D.**

53. Curator: If our museum lends *Venus* to the Hart Institute for their show this spring, they will lend us their Rembrandt etchings for our print exhibition next fall. Having those etchings will increase attendance to the exhibition and hence increase revenue from our general admission fee.

Museum Administrator: But *Venus* is our biggest attraction. Moreover the Hart’s show will run for twice as long as our exhibition. So on balance the number of patrons may decrease.

The point of the administrator’s response to the curator is to question

- (A) whether getting the Rembrandt etchings from the Hart Institute is likely to increase attendance at the print exhibition
- (B) whether the Hart Institute’s Rembrandt etchings will be appreciated by those patrons of the curator’s museum for whom the museum’s biggest attraction is *Venus*
- (C) whether the number of patrons attracted by the Hart Institute’s Rembrandt etchings will be larger than the number of patrons who do not come in the spring because *Venus* is on loan
- (D) whether, if *Venus* is lent, the museum’s revenue from general admission fees during the print exhibition will exceed its revenue from general admission fees during the Hart Institute’s exhibition
- (E) whether the Hart Institute or the curator’s museum will have the greater financial gain from the proposed exchange of artworks

**Argument Construction**

<b>Situation</b>	A curator and a museum administrator debate whether lending a particular artwork to the Hart Institute in exchange for a loan of some of the Hart Institute’s artworks would increase or decrease attendance and revenue at the museum.
<b>Reasoning</b>	<i>Which of the curator’s explicit or implicit claims is the museum administrator questioning?</i> The administrator’s statements that

*Venus* is the museum's biggest attraction and that the Hart Institute's show will run twice as long as the museum's exhibition do not directly conflict with any statement or assumption made by the curator. However, the administrator's conclusion is that on balance the number of patrons at the museum may decrease if the curator's proposal is followed. This conclusion calls into question the curator's claim that the proposal will increase revenue from the general admission fee, since that claim presupposes that on balance the proposal will increase the number of visitors to the museum. (The context suggests that the administrator is using the term *patrons* to mean visitors rather than donors.)

A The administrator does not dispute that the Rembrandt etchings would probably increase attendance at the print exhibition but rather suggests that this increase would be exceeded by the loss of visitors to the museum while the Hart Institute borrows *Venus*.

B Neither the curator nor the administrator comments on whether the patrons attracted to the Rembrandt etchings would be the same people attracted to *Venus*.

**C Correct.** The curator implicitly infers that the former number will be larger than the latter, whereas the administrator questions this by asserting that the latter number may be larger than the former.

D The administrator does not question whether the revenue during the print exhibition will exceed the revenue during the Hart Institute's exhibition, but rather whether it will exceed the loss of revenue during the Hart Institute's exhibition.

E Neither the curator nor the administrator comments on whether the museum would gain more or less from the exchange than the Hart Institute would.

**The correct answer is C.**

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

At a recent conference on environmental threats to the North Sea, most participating countries favored uniform controls on the quality of effluents, whether or not specific environmental damage could be attributed to a particular source of effluent. What must, of course, be shown, in order to avoid excessively restrictive controls, is that \_\_\_\_\_.

(A) any uniform controls that are adopted are likely to be implemented without delay

(B) any substance to be made subject to controls can actually cause environmental damage

- (C) the countries favoring uniform controls are those generating the largest quantities of effluents
- (D) all of any given pollutant that is to be controlled actually reaches the North Sea at present
- (E) environmental damage already inflicted on the North Sea is reversible

**Argument Construction**

<b>Situation</b>	In the face of environmental threats to the North Sea, restrictions on effluents are considered.
<b>Reasoning</b>	<i>How can excessively restrictive controls be avoided?</i> To prevent pollutants from entering the North Sea, countries decide to control the quality of effluents. They need to control only those effluents that cause environmental damage. There is no need to restrict harmless effluents.

- A The immediacy of adopting controls does not prevent the controls from being overly restrictive.
- B Correct.** This statement properly identifies the fact that controls on harmless effluents would be excessively restrictive and so should be avoided.
- C Avoiding unnecessary restrictions involves analyzing the quality of the effluents, not the composition of the countries favoring the restrictions.
- D It is not necessary to prove that all of a pollutant reaches the North Sea. It is necessary to prove only that some of it does.
- E The environmental damage that has already been caused is outside the scope of the restrictions. Finding that the damage is reversible will do nothing to prevent unnecessary restrictions.

**The correct answer is B.**

55. On May first, in order to reduce the number of overdue books, a children’s library instituted a policy of forgiving fines and giving bookmarks to children returning all of their overdue books. On July first there were twice as many overdue books as there had been on May first, although a record number of books had been returned during the interim.
- Which of the following, if true, most helps to explain the apparent inconsistency in the results of the library’s policy?
- (A) The librarians did not keep accurate records of how many children took advantage of the grace period, and some of the children returning overdue books did not return all of their overdue books.
  - (B) Although the grace period enticed some children to return all of their

overdue books, it did not convince all of the children with overdue books to return all of their books.

(C) The bookmarks became popular among the children, so in order to collect the bookmarks, many children borrowed many more books than they usually did and kept them past their due date.

(D) The children were allowed to borrow a maximum of five books for a two-week period, and hence each child could keep a maximum of fifteen books beyond their due date within a two-month period.

(E) Although the library forgave overdue fines during the grace period, the amount previously charged the children was minimal; hence, the forgiveness of the fines did not provide enough incentive for them to return their overdue books.

Argument Construction

Situation	After a library started forgiving fines and giving bookmarks to children who returned all their overdue books, the number of books returned greatly increased, but so did the number of overdue books.
Reasoning	<i>Why might the policy have simultaneously increased the number of overdue books and the number of books being returned?</i> In order to increase both these numbers, the policy must have resulted in more books being checked out, kept past their due dates, and then returned. But why would the policy have promoted that behavior? One possibility is that it rewarded the behavior. The policy involved giving children bookmarks as rewards for returning overdue books, while removing the fines that penalized the children for doing so. If the children liked the bookmarks, they might have tried to get more of them by deliberately checking books out in order to keep them past their due dates before returning them to get the bookmarks.

A Failing to keep accurate records of the number of children would not clearly increase the number of books being returned. And the policy change did not apply to children who returned only some of their overdue books.

B This suggests that the policy had limited effects, but does not help to explain why it had apparently inconsistent effects.

**C Correct.** This explains how the policy gave the children a motive to check out and return more books while also allowing them to keep more of the books past the due dates.

D This restriction would have limited the number of overdue books and thus would not help to explain why that number increased.

E This suggests that the policy had little effect but does not help to explain

why it had apparently inconsistent effects.

**The correct answer is C.**

56. Often patients with ankle fractures that are stable, and thus do not require surgery, are given follow-up x-rays because their orthopedists are concerned about possibly having misjudged the stability of the fracture. When a number of follow-up x-rays were reviewed, however, all the fractures that had initially been judged stable were found to have healed correctly. Therefore, it is a waste of money to order follow-up x-rays of ankle fractures initially judged stable.

Which of the following, if true, most strengthens the argument?

- (A) Doctors who are general practitioners rather than orthopedists are less likely than orthopedists to judge the stability of an ankle fracture correctly.
- (B) Many ankle injuries for which an initial x-ray is ordered are revealed by the x-ray not to involve any fracture of the ankle.
- (C) X-rays of patients of many different orthopedists working in several hospitals were reviewed.
- (D) The healing of ankle fractures that have been surgically repaired is always checked by means of a follow-up x-ray.
- (E) Orthopedists routinely order follow-up x-rays for fractures of bones other than ankle bones.

**Argument Evaluation**

<b>Situation</b>	Often patients with ankle fractures that their orthopedists have judged not to require surgery are given follow-up x-rays to check whether the fracture healed correctly. An examination of a sample of those x-rays found that the ankle had, in each case, healed properly.
<b>Reasoning</b>	<i>The question is which of the options, if true, would most strengthen the argument.</i> The argument is based on data concerning follow-up x-rays, each of which revealed no problem with the orthopedist’s initial judgment that the ankle fracture was stable (and would heal without surgery). This invites the question whether the follow-up x-rays are really needed. The argument concludes that they are a waste of money. But was the x-ray data truly representative of orthopedists generally? After all, some orthopedists—perhaps more experienced, better-trained, or employed at a facility with better staff or facilities—may be much better than others at judging ankle fractures. If we add the information that the data for the conclusion comes from many orthopedists working at many different hospitals, we have greater assurance that the x-ray data is representative, and the argument will be made much stronger.



- A Neither the study nor the conclusion that is drawn from it concerns general practitioners, so this point is irrelevant.
- B Naturally many ankle injuries do not involve fractures—x-rays may sometimes be used to determine this—but the argument concerns only cases where there have been ankle fractures.
- C Correct.** This shows that the sample of x-ray data examined was probably sufficiently representative of cases of ankle fracture judged to be stable by orthopedists.
- D The argument does not concern cases of ankle fracture that have been surgically repaired.
- E The argument concerns only x-rays of ankles. From the information given here, we cannot infer that orthopedists are generally wasteful in routinely ordering follow-up x-rays.

**The correct answer is C.**

57. Traditionally, decision making by managers that is reasoned step-by-step has been considered preferable to intuitive decision making. However, a recent study found that top managers used intuition significantly more than did most middle- or lower-level managers. This confirms the alternative view that intuition is actually more effective than careful, methodical reasoning.

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

- (A) Methodical, step-by-step reasoning is inappropriate for making many real-life management decisions.
- (B) Top managers have the ability to use either intuitive reasoning or methodical, step-by-step reasoning in making decisions.
- (C) The decisions made by middle- and lower-level managers can be made as easily by using methodical reasoning as by using intuitive reasoning.
- (D) Top managers use intuitive reasoning in making the majority of their decisions.
- (E) Top managers are more effective at decision making than middle- or lower-level managers.

**Argument Construction**

<b>Situation</b>	Intuition, used significantly more by top managers than by middle- or lower-level managers, is found to be more effective than step-by-step reasoning in making decisions.
<b>Reasoning</b>	<i>What assumption does the argument make?</i> The study shows that top managers use intuition more in decision making than the other

managers do. The conclusion is then drawn that intuition is more effective. But the stated premises on their own provide inadequate support for the conclusion, so it is reasonable to think that the argument must be based on an unstated assumption, such as the assumption that top managers, when employing intuitive decision making, make more effective decisions than middle- and lower-level managers. Without some such assumption, the argument fails.

A While the argument is consistent with this idea, the inappropriateness of step-by-step reasoning is not assumed.

B Top managers' ability to switch decision methods does not help to show that one method is better than the other.

C The effectiveness of decision-making methods, not the ease with which the methods are applied, is the subject of the argument.

D The argument would not necessarily fail if something incompatible with this statement were assumed—for example, if it were assumed that top managers use intuition only in *half* of their decisions. Thus this statement does not have to be assumed. Moreover, even if this statement were to be added as an assumption to the stated premises, the support for the conclusion would still be inadequate unless some additional assumption were made.

**E Correct.** This is the best choice for the missing assumption. Without some such assumption, the argument would fail.

**The correct answer is E.**

58. A company plans to develop a prototype weeding machine that uses cutting blades with optical sensors and microprocessors that distinguish weeds from crop plants by differences in shade of color. The inventor of the machine claims that it will reduce labor costs by virtually eliminating the need for manual weeding.

Which of the following is a consideration in favor of the company's implementing its plan to develop the prototype?

(A) There is a considerable degree of variation in shade of color between weeds of different species.

(B) The shade of color of some plants tends to change appreciably over the course of their growing season.

(C) When crops are weeded manually, overall size and leaf shape are taken into account in distinguishing crop plants from weeds.

(D) Selection and genetic manipulation allow plants of virtually any species to be economically bred to have a distinctive shade of color without altering their other characteristics.

(E) Farm laborers who are responsible for the manual weeding of crops carry out other agricultural duties at times in the growing season when extensive weeding is not necessary.

Evaluation of a Plan

Situation	A company plans to develop an automated weeding machine that would distinguish weeds from crop plants by differences in shade of color. It is supposed to reduce labor costs by eliminating the need for manual weeding.
Reasoning	<i>Which option describes a consideration that would favor the company’s plan?</i> The passage supports the plan by claiming that the machine would reduce labor costs by virtually eliminating weeding by hand. The correct option will be one that adds to this support. Labor costs will be reduced only if the machine works well. The machine relies on shade of color to distinguish between weeds and crop plants. If crop plants can be bred to have distinctive color without sacrificing other qualities, it would be more likely that the machine could be used effectively.

A Greater variation among weed plants would make it more difficult for the machine to distinguish between weeds and crop plants, and this would make it less likely that the machine would be effective.

B This option tends to disfavor the effectiveness of the machine. The more changeable the colors of the plants to be distinguished, the more complex the task of distinguishing between weeds and crop plants based on their color.

C This option tends to disfavor the likely benefits of the machine because it indicates that manual weeding distinguishes weeds from crop plants by using criteria that the machine does not take into account. If the machine does not distinguish weeds from crop plants as accurately and reliably as manual weeding does, then the machine is less apt to make manual weeding unnecessary.

**D Correct.** Making crop plants easily distinguishable from weeds would facilitate the effective use of the weeding machine.

E This does not favor the company’s implementing the plan to develop the machine. There would still be tasks other than weeding that would require hiring staff. Thus there would still be labor costs even if the need for manual weeding were eliminated.

The correct answer is D.

59. A certain mayor has proposed a fee of five dollars per day on private vehicles entering the city, claiming that the fee will alleviate the city’s traffic congestion.

The mayor reasons that, since the fee will exceed the cost of round-trip bus fare from many nearby points, many people will switch from using their cars to using the bus.

Which of the following statements, if true, provides the best evidence that the mayor’s reasoning is flawed?

- (A) Projected increases in the price of gasoline will increase the cost of taking a private vehicle into the city.
- (B) The cost of parking fees already makes it considerably more expensive for most people to take a private vehicle into the city than to take a bus.
- (C) Most of the people currently riding the bus do not own private vehicles.
- (D) Many commuters opposing the mayor’s plan have indicated that they would rather endure traffic congestion than pay a five-dollar-per-day fee.
- (E) During the average workday, private vehicles owned and operated by people living within the city account for 20 percent of the city’s traffic congestion.

Evaluation of a Plan

Situation	In order to alleviate traffic congestion, the mayor proposes a five-dollar daily fee on private vehicles entering the city. Since the fee is more than the round-trip bus fare, the mayor believes many drivers will switch to buses.
Reasoning	<i>What flaw exists in the mayor’s reasoning?</i> The mayor apparently believes that saving money is the decisive issue for drivers. If, however, drivers are already paying considerably more in parking fees than they would in fares as bus commuters, then saving money is not the primary reason they are choosing to drive their cars rather than take the bus. This suggests that drivers may not change their behavior simply to save money.

A This statement does not indicate whether the increased cost will dissuade people from taking private vehicles into the city, and therefore does not indicate whether the mayor’s reasoning is flawed.

**B Correct.** This statement properly identifies a flaw in the mayor’s reasoning.

C Current bus riders are not relevant to the mayor’s plan, which anticipates only that people currently driving private vehicles into the city will become bus riders.

D Many drivers may continue to commute in their private vehicles, but others might switch to buses. The mayor’s plan does not anticipate a switch

by all drivers.

E The 20 percent figure shows that most congestion is caused by vehicles entering from outside the city; this does not point out a weakness in the mayor’s plan.

The correct answer is B.

60. Aroca City currently funds its public schools through taxes on property. **In place of this system, the city plans to introduce a sales tax of three percent on all retail sales in the city.** Critics protest that 3 percent of current retail sales falls short of the amount raised for schools by property taxes. The critics are correct on this point. **Nevertheless, implementing the plan will probably not reduce the money going to Aroca’s schools.** Several large retailers have selected Aroca City as the site for huge new stores, and these are certain to draw large numbers of shoppers from neighboring municipalities, where sales are taxed at rates of six percent and more. In consequence, retail sales in Aroca City are bound to increase substantially.

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

- (A) The first presents a plan that the argument concludes is unlikely to achieve its goal; the second expresses that conclusion.
- (B) The first presents a plan that the argument concludes is unlikely to achieve its goal; the second presents evidence in support of that conclusion.
- (C) The first presents a plan that the argument contends is the best available; the second is a conclusion drawn by the argument to justify that contention.
- (D) The first presents a plan one of whose consequences is at issue in the argument; the second is the argument’s conclusion about that consequence.
- (E) The first presents a plan that the argument seeks to defend against a certain criticism; the second is that criticism.

Argument Evaluation

Situation	Aroca City plans to switch the source of its public school funding from property taxes to a new local sales tax.
Reasoning	<i>What argumentative roles do the two portions in boldface play in the passage?</i> The first boldface portion simply describes the city’s plan. The next two sentences in the passage describe an observation some critics have made in objecting to the plan and say that the observation is correct. But then the second boldface portion rejects the critics’ implicit conclusion that the plan will reduce school funding. The final two sentences in the passage present reasons to

accept the statement in the second boldface portion, so they are premises supporting it as a conclusion.

A The argument concludes that the plan is unlikely to reduce funding for the schools. The passage does not mention the plan's goal, but presumably that goal is not to reduce school funding.

B The second boldface portion presents the argument's conclusion, not evidence to support the conclusion. The passage does not mention the plan's goal, but presumably that goal is not to reduce school funding.

C The passage does not say whether the plan is better than any other possible school funding plans.

**D Correct.** The plan's likely effect on the amount of school funding is at issue in the argument, whose conclusion is that the plan probably will not reduce that funding.

E The second boldface portion does not criticize the plan, but rather rejects a criticism of the plan by stating that the plan will probably not reduce school funding.

**The correct answer is D.**

61. Tanco, a leather manufacturer, uses large quantities of common salt to preserve animal hides. New environmental regulations have significantly increased the cost of disposing of salt water that results from this use, and, in consequence, Tanco is considering a plan to use potassium chloride in place of common salt. Research has shown that Tanco could reprocess the by-product of potassium chloride use to yield a crop fertilizer, leaving a relatively small volume of waste for disposal.

In determining the impact on company profits of using potassium chloride in place of common salt, it would be important for Tanco to research all of the following EXCEPT:

- (A) What difference, if any, is there between the cost of the common salt needed to preserve a given quantity of animal hides and the cost of the potassium chloride needed to preserve the same quantity of hides?
- (B) To what extent is the equipment involved in preserving animal hides using common salt suitable for preserving animal hides using potassium chloride?
- (C) What environmental regulations, if any, constrain the disposal of the waste generated in reprocessing the by-product of potassium chloride?
- (D) How closely does leather that results when common salt is used to preserve hides resemble that which results when potassium chloride is used?

(E) Are the chemical properties that make potassium chloride an effective means for preserving animal hides the same as those that make common salt an effective means for doing so?

Evaluation of a Plan

Situation	New environmental regulations will increase the costs of disposing of the salt water that results from the use of large amounts of common salt in leather manufacturing. The manufacturer is considering switching from common salt to potassium chloride, because the by-product of the latter could be reprocessed to yield a crop fertilizer, with little waste left over to be disposed.
Reasoning	<i>In order to determine whether it would be profitable to switch from using common salt to using potassium chloride, which of the five questions does the manufacturer NOT need to answer?</i> The chemical properties making potassium chloride an effective means of preserving animal hides might be quite different from those that make common salt effective, but there is no particular reason for thinking that this would impact the profitability of switching to potassium chloride. The relevant effects on the preserved hides might be the same even if the properties that brought about those effects were quite different. Thus, without more information than is provided in the passage, this question is irrelevant.

A The savings in waste disposal costs that would be gained by switching to potassium chloride could be cancelled out if the cost of potassium chloride needed far exceeded that for common salt.

B If switching to potassium chloride would force the manufacturer to replace the equipment it uses for preserving hides, then it might be less profitable to switch.

C Even though there is said to be relatively little waste associated with using potassium chloride in the process, if the costs of this disposal are very high due to environmental regulations, it might be less profitable to switch.

D If the leather that results from the use of potassium chloride looks substantially different from that which results when common salt has been used, then the leather might be less attractive to consumers, which would adversely affect the economics of switching to potassium chloride.

**E Correct.** Note that the question as stated here presupposes that potassium chloride and salt are both effective means for preserving animal hides—so it does not raise any issue as to whether potassium chloride is adequately effective or as effective as salt (clearly, an issue of effectiveness *would* be relevant to profitability).

**The correct answer is E.**

62. Colorless diamonds can command high prices as gemstones. A type of less valuable diamonds can be treated to remove all color. Only sophisticated tests can distinguish such treated diamonds from naturally colorless ones. However, only 2 percent of diamonds mined are of the colored type that can be successfully treated, and many of those are of insufficient quality to make the treatment worthwhile. Surely, therefore, the vast majority of colorless diamonds sold by jewelers are naturally colorless.

A serious flaw in the reasoning of the argument is that

- (A) comparisons between the price diamonds command as gemstones and their value for other uses are omitted
- (B) information about the rarity of treated diamonds is not combined with information about the rarity of naturally colorless, gemstone diamonds
- (C) the possibility that colored diamonds might be used as gemstones, even without having been treated, is ignored
- (D) the currently available method for making colorless diamonds from colored ones is treated as though it were the only possible method for doing so
- (E) the difficulty that a customer of a jeweler would have in distinguishing a naturally colorless diamond from a treated one is not taken into account

**Argument Evaluation**

<b>Situation</b>	Colored diamonds of a type that comprises 2 percent of all mined diamonds can be treated so that they are not easily distinguishable from more valuable, naturally colorless diamonds, but many are too low in quality for the treatment to be worthwhile.
<b>Reasoning</b>	<i>Why do the argument’s premises not justify the conclusion that the vast majority of colorless diamonds sold by jewelers are naturally colorless?</i> Since the type of colored diamonds that can be treated make up only 2 percent of all mined diamonds, and many diamonds of that type are too low in quality for treatment to be worthwhile, the vast majority of mined diamonds must not be treated to have their color removed. However, we are not told what proportion of all mined diamonds are naturally colorless. Naturally colorless diamonds may be far rarer even than the uncommon diamonds that have been treated to have their color removed. Thus, for all we can tell from the passage, it could well be that most colorless diamonds sold by jewelers have been treated to remove all color.

A Even if some types of diamonds command higher prices for uses other



than as gemstones, the types discussed in the passage evidently command high enough prices as gemstones to be sold as such by jewelers.

**B Correct.** The argument does not work if naturally colorless diamonds are rarer than treated diamonds, as they may be for all we can tell from the information provided.

C The argument’s conclusion is only that jewelers sell more naturally colorless diamonds than diamonds treated to be colorless. Whether jewelers sell any colored diamonds or other gemstones is irrelevant.

D The argument only concerns the types of colorless diamonds sold now, not the types that may be sold in the future if other treatment methods are discovered.

E The argument does suggest this difficulty but implies that even so there are too few treated diamonds available for jewelers to sell in place of naturally colorless ones.

**The correct answer is B.**

63. Boreal owls range over a much larger area than do other owls of similar size. The reason for this behavior is probably that the small mammals on which owls feed are especially scarce in the forests where boreal owls live, and the relative scarcity of prey requires the owls to range more extensively to find sufficient food.

Which of the following, if true, most helps to confirm the explanation above?

(A) Some boreal owls range over an area eight times larger than the area over which any other owl of similar size ranges.

(B) Boreal owls range over larger areas in regions where food of the sort eaten by small mammals is sparse than they do in regions where such food is abundant.

(C) After their young hatch, boreal owls must hunt more often than before in order to feed both themselves and their newly hatched young.

(D) Sometimes individual boreal owls hunt near a single location for many weeks at a time and do not range farther than a few hundred yards.

(E) The boreal owl requires less food, relative to its weight, than is required by members of other owl species.

**Argument Evaluation**

<b>Situation</b>	The small mammals on which owls prey are relatively scarce in the forests where boreal owls live. That is why boreal owls range more extensively than do other, similarly sized owls in search of food.
<b>Reasoning</b>	<i>Which choice, if true, would most help confirm the proposed explanation?</i> One way to confirm an explanation is by finding further

information that one would expect to be true *if* the explanation is valid. If the explanation in the passage is valid, then one would expect that variations in the population density of available small-animal prey for boreal owls would be accompanied by variations in the ranges of the boreal owls. Naturally the population density of available small-animal prey is likely to be affected by how plentiful food is for those small animals.

A The comparison between different groups of boreal owls is not relevant to the comparison between boreal owls and other owls.

**B Correct.** This indicates that abundance of food for the boreal owls' small-animal prey in an area (and therefore abundance of small animals in that area) correlates with a smaller range for the boreal owls there. This strengthens the proposed explanation.

C This option concerns a correlation between owls' need for food and the frequency with which owls hunt, whereas the phenomenon described in the passage and the proposed explanation have to do with the range over which owls hunt.

D If one were to assume that boreal owls never hunt near a single location for weeks, that would in no way undermine the proposed explanation.

E If anything, this option tends to undermine the proposed explanation, because it suggests the possibility that boreal owls need not make up for the relative scarcity of prey in their habitats by ranging over larger areas.

**The correct answer is B.**

64. Historian: Newton developed mathematical concepts and techniques that are fundamental to modern calculus. Leibniz developed closely analogous concepts and techniques. It has traditionally been thought that these discoveries were independent. Researchers have, however, recently discovered notes of Leibniz's that discuss one of Newton's books on mathematics. Several scholars have argued that since **the book includes a presentation of Newton's calculus concepts and techniques**, and since the notes were written before Leibniz's own development of calculus concepts and techniques, it is virtually certain that **the traditional view is false**. A more cautious conclusion than this is called for, however. Leibniz's notes are limited to early sections of Newton's book, sections that precede the ones in which Newton's calculus concepts and techniques are presented.

In the historian's reasoning, the two portions in **boldface** play which of the following roles?

- (A) The first is a claim that the historian rejects; the second is a position that that claim has been used to support.

- (B) The first is evidence that has been used to support a conclusion about which the historian expresses reservations; the second is that conclusion.
- (C) The first provides evidence in support of a position that the historian defends; the second is that position.
- (D) The first and the second each provide evidence in support of a position that the historian defends.
- (E) The first has been used in support of a position that the historian rejects; the second is a conclusion that the historian draws from that position.

Argument Construction

Situation	A historian discusses a controversy about whether or not Leibniz developed calculus concepts and techniques independently of Newton.
Reasoning	<i>What argumentative roles do the two portions in boldface play in the passage?</i> The first four sentences of the passage simply provide background information. Both boldface sections are within the fifth sentence, which reports an argument by <i>several scholars</i> . The key word <i>since</i> indicates that the first boldface section is a premise in the scholars’ argument. A second premise preceded by another <i>since</i> follows in the next clause. The final clause of the fifth sentence reveals that the second boldface section is the conclusion of the scholars’ argument. In the sixth sentence, the historian expresses misgivings about the scholars’ conclusion, for reasons presented in the seventh and final sentence.

A The historian does not reject the claim that Newton’s book includes a presentation of Newton’s calculus concepts and techniques. Instead, the historian merely points out that Leibniz’s notes do not cover those sections of Newton’s book.

**B Correct.** The first boldface section is one of two premises in the scholars’ argument, and the second boldface section is that argument’s conclusion. In the following sentence the historian expresses reservations about that conclusion.

C The historian does not defend the scholars’ conclusion but rather expresses misgivings about it.

D The second boldface section is the scholars’ conclusion and does not present any evidence. Nor does it support the historian’s position that a more cautious conclusion is called for.

E The second boldface section presents not the historian’s conclusion but

rather the scholars’ conclusion, about which the historian expresses misgivings.

**The correct answer is B.**

65. Meteorite explosions in the Earth’s atmosphere as large as the one that destroyed forests in Siberia, with approximately the force of a twelve-megaton nuclear blast, occur about once a century. The response of highly automated systems controlled by complex computer programs to unexpected circumstances is unpredictable.

Which of the following conclusions can most properly be drawn, if the statements above are true, about a highly automated nuclear-missile defense system controlled by a complex computer program?

- (A) Within a century after its construction, the system would react inappropriately and might accidentally start a nuclear war.
- (B) The system would be destroyed if an explosion of a large meteorite occurred in the Earth’s atmosphere.
- (C) It would be impossible for the system to distinguish the explosion of a large meteorite from the explosion of a nuclear weapon.
- (D) Whether the system would respond inappropriately to the explosion of a large meteorite would depend on the location of the blast.
- (E) It is not certain what the system’s response to the explosion of a large meteorite would be, if its designers did not plan for such a contingency.

**Argument Construction**

<b>Situation</b>	A meteorite explosion equivalent to a nuclear blast occurs approximately once a century. Automated systems, controlled by computer programs, respond to unexpected occurrences unpredictably.
<b>Reasoning</b>	<i>What conclusion can be drawn about such a highly automated defense system?</i> The response of the system to <i>unexpected circumstances</i> is <i>unpredictable</i> , which means that no reliable information is available about how the system would respond to such unexpected circumstances, that is, to an event that the system was not designed to handle.

- A The fact that the system’s response would be unpredictable does not justify a prediction that such a response would actually be inappropriate; it could just as well be appropriate. Neither are we told whether any particular meteorite event would produce such *unexpected circumstances*.
- B The premises offer no evidence that the system would be destroyed.
- C The given information does not tell us whether a system could be

designed to distinguish between a nuclear blast and a meteorite explosion.

D No information is given in the two premises about how the location of the explosion would affect the system.

**E Correct.** This statement properly identifies the conclusion that the system’s response to a meteorite explosion would be uncertain if the system had not been designed to handle such an event.

**The correct answer is E.**

66. A milepost on the towpath read “21” on the side facing the hiker as she approached it and “23” on its back. She reasoned that the next milepost forward on the path would indicate that she was halfway between one end of the path and the other. However, the milepost one mile further on read “20” facing her and “24” behind. Which of the following, if true, would explain the discrepancy described above?
- (A) The numbers on the next milepost had been reversed.
  - (B) The numbers on the mileposts indicate kilometers, not miles.
  - (C) The facing numbers indicate miles to the end of the path, not miles from the beginning.
  - (D) A milepost was missing between the two the hiker encountered.
  - (E) The mileposts had originally been put in place for the use of mountain bikers, not for hikers.

**Argument Construction**

<b>Situation</b>	A hiker sees a milepost marked 21 on one side and 23 on the other. She expects the next milepost to read 22 on both sides. However, the actual sign says 20 and 24.
<b>Reasoning</b>	<i>What explains the discrepancy?</i> The hiker assumes that the number facing her is the distance she has traveled from her journey’s beginning and that the other number is the distance to her journey’s end. That is, at the first milepost she believes she has come 21 miles and has 23 miles left to go. In fact, the numbers are actually the reverse of her reasoning. At the second milepost she has 20 miles left to go and has come 24 miles.

A Reversing the numbers would not make any difference; according to the hiker’s (incorrect) reasoning, both numbers would be 22.

B What unit of measurement is used is irrelevant to the hiker’s misinterpretation of the mileposts.

**C Correct.** This statement resolves the discrepancy between the true meaning of the mileposts and the hiker’s expectation about them by

- showing how the hiker misinterpreted the mileposts.
- D A missing milepost would not explain the discrepancy. If there had been a missing milepost with 22 on each side, its discrepancy with the 20/24 milepost would also need explanation.
- E The numbers are measures of distance, not time, so the mode of transportation is irrelevant.

**The correct answer is C.**

67. For over two centuries, no one had been able to make Damascus blades—blades with a distinctive serpentine surface pattern—but a contemporary sword maker may just have rediscovered how. Using iron with trace impurities that precisely matched those present in the iron used in historic Damascus blades, this contemporary sword maker seems to have finally hit on an intricate process by which he can produce a blade indistinguishable from a true Damascus blade.

Which of the following, if true, provides the strongest support for the hypothesis that trace impurities in the iron are essential for the production of Damascus blades?

- (A) There are surface features of every Damascus blade—including the blades produced by the contemporary sword maker—that are unique to that blade.
- (B) The iron with which the contemporary sword maker made Damascus blades came from a source of iron that was unknown two centuries ago.
- (C) Almost all the tools used by the contemporary sword maker were updated versions of tools that were used by sword makers over two centuries ago.
- (D) Production of Damascus blades by sword makers of the past ceased abruptly after those sword makers’ original source of iron became exhausted.
- (E) Although Damascus blades were renowned for maintaining a sharp edge, the blade made by the contemporary sword maker suggests that they may have maintained their edge less well than blades made using what is now the standard process for making blades.

**Argument Evaluation**

<b>Situation</b>	A sword maker may have recently rediscovered how to make Damascus blades using iron with trace impurities matching those in the iron from which historic Damascus blades were wrought.
<b>Reasoning</b>	<i>What evidence would suggest that the trace impurities are essential for producing Damascus blades?</i> The passage says the sword maker seems to have created blades indistinguishable from historic

Damascus blades by using iron with the same trace impurities found in those blades. But that does not prove the trace impurities are essential to the process. Evidence suggesting that Damascus blades have never been made from iron without the trace impurities would support the hypothesis that the trace impurities are essential to their manufacture.
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A Damascus blades could vary in their surface features whether or not trace impurities are essential for their manufacture.

B Whatever the source of the iron the contemporary sword maker used, it contains the same trace impurities as the iron historically used to make Damascus blades, which is what the hypothesis is about.

C If anything, this might cast doubt on the hypothesis by suggesting that the special tools rather than the trace impurities could account for the distinctive features of Damascus blades.

**D Correct.** This suggests that when the historic sword makers lost access to the special iron with its trace impurities, they could no longer make Damascus blades. Thus, it supports the hypothesis that the trace impurities are necessary for manufacturing Damascus blades.

E Even if Damascus blades maintained their edges less well than most contemporary blades do, the trace impurities may not have been essential for manufacturing them.

**The correct answer is D.**

68. Images from ground-based telescopes are invariably distorted by the Earth's atmosphere. Orbiting space telescopes, however, operating above Earth's atmosphere, should provide superbly detailed images. Therefore, ground-based telescopes will soon become obsolete for advanced astronomical research purposes.

Which of the following statements, if true, would cast the most doubt on the conclusion drawn above?

(A) An orbiting space telescope due to be launched this year is far behind schedule and over budget, whereas the largest ground-based telescope was both within budget and on schedule.

(B) Ground-based telescopes located on mountain summits are not subject to the kinds of atmospheric distortion which, at low altitudes, make stars appear to twinkle.

(C) By careful choice of observatory location, it is possible for large-aperture telescopes to avoid most of the kind of wind turbulence that can distort image quality.

(D) When large-aperture telescopes are located at high altitudes near the equator, they permit the best Earth-based observations of the center of the Milky Way Galaxy, a prime target of astronomical research.

(E) Detailed spectral analyses, upon which astronomers rely for determining the chemical composition and evolutionary history of stars, require telescopes with more light-gathering capacity than space telescopes can provide.

Argument Evaluation

Situation	Earth’s atmosphere distorts images from ground-based telescopes, whereas space telescopes orbiting above the atmosphere should provide superbly detailed images.
Reasoning	<i>What evidence would undermine the claim that ground-based telescopes will soon become obsolete for advanced astronomical research?</i> The argument implicitly assumes that advanced astronomical research can be accomplished more effectively with the more detailed, less distorted images produced by space telescopes and that therefore almost all advanced astronomical research will soon be conducted with space telescopes. This reasoning would be undermined by evidence that ground-based telescopes have substantial advantages for advanced astronomical research despite their distorted images or by evidence that space telescopes will not soon become common or affordable enough to support most advanced astronomical research.

A Even if this is true, there may be several orbiting space telescopes that will be, or have been, launched on schedule and within budget, so this option does not cast doubt on the conclusion of the argument.

B Ground-based telescopes on mountain summits are still subject to more atmospheric distortion than are space telescopes orbiting above the atmosphere.

C Atmospheric distortion of telescopic images may result mainly from factors other than wind turbulence.

D Even the best Earth-based observations of the center of the Milky Way Galaxy may be vastly inferior to space-based observations.

**E Correct.** This indicates an inherent limitation of space-based telescopes: unlike Earth-based telescopes, they lack the light-gathering capacity that astronomers need to perform one of their primary tasks, i.e., detailed spectral analyses. So Earth-based telescopes are unlikely to soon become obsolete.

The correct answer is E.



69. Generally scientists enter their field with the goal of doing important new research and accept as their colleagues those with similar motivation. Therefore, when any scientist wins renown as an expounder of science to general audiences, most other scientists conclude that this popularizer should no longer be regarded as a true colleague.

The explanation offered above for the low esteem in which scientific popularizers are held by research scientists assumes that

- (A) serious scientific research is not a solitary activity, but relies on active cooperation among a group of colleagues
- (B) research scientists tend not to regard as colleagues those scientists whose renown they envy
- (C) a scientist can become a famous popularizer without having completed any important research
- (D) research scientists believe that those who are well known as popularizers of science are not motivated to do important new research
- (E) no important new research can be accessible to or accurately assessed by those who are not themselves scientists

Argument Construction

Situation	Research scientists desire to do important new research and treat as colleagues just those who have a similar desire. When a scientist becomes popular among a general audience for explaining principles of science, other scientists have less esteem for this popularizer, no longer regarding such a scientist as a serious colleague.
Reasoning	<i>What assumption do research scientists make about scientists who become popularizers?</i> The community of scientists shares a common goal: to do important new research. What would cause this community to disapprove of a popularizer and to cease to regard the popularizer as a colleague? It must be because many scientists believe that becoming a popularizer is incompatible with desiring to do important new research.

- A Many scientists make this assumption, of course—but it is not an assumption on which the explanation specifically depends. The explanation concerns the scientists’ motivation, not their style of doing research.
- B This statement gives another reason that scientists may reject a popularizer, but because it is not the reason implied in the passage, it is not assumed.
- C Even if this is true, it does not address the core issue of the argument: what scientists believe about the *motivation* of popularizers.

- D Correct.** This statement properly identifies an assumption on which the explanation for scientists’ rejection of popularizers depends.
- E The passage is not concerned with whether nonscientists can understand new research, but rather with the beliefs and motivations of scientists who reject popularizers as colleagues.

**The correct answer is D.**

70. Which of the following most logically completes the argument?

Utrania was formerly a major petroleum exporter, but in recent decades economic stagnation and restrictive regulations inhibited investment in new oil fields. In consequence, Utranian oil exports dropped steadily as old fields became depleted. Utrania’s currently improving economic situation, together with less-restrictive regulations, will undoubtedly result in the rapid development of new fields. However, it would be premature to conclude that the rapid development of new fields will result in higher oil exports, because \_\_\_\_\_.

- (A) the price of oil is expected to remain relatively stable over the next several years
- (B) the improvement in the economic situation in Utrania is expected to result in a dramatic increase in the proportion of Utranians who own automobiles
- (C) most of the investment in new oil fields in Utrania is expected to come from foreign sources
- (D) new technology is available to recover oil from old oil fields formerly regarded as depleted
- (E) many of the new oil fields in Utrania are likely to be as productive as those that were developed during the period when Utrania was a major oil exporter

**Argument Construction**

<b>Situation</b>	A country that had been a major oil exporter has seen its exports decline in recent decades due to economic stagnation, a failure to invest in new fields, and the steady depletion of its old fields. But looser regulations and an improving economy will bring rapid development of new oil fields in the country.
<b>Reasoning</b>	<i>Which of the options would most logically complete the argument?</i> The passage describes the conditions that led to Utrania’s no longer being a major oil exporter: a lack of investment in new oil fields due to a stagnant economy and restrictive regulations. The passage then says that due to changed regulatory and economic conditions, there will now be rapid development of new oil fields. Nonetheless, this

might not bring about an increase in Utrania's oil exports. To logically complete the argument, one must explain how oil exports might not increase even when the condition that led to decreased oil exports has been removed. Suppose there were an increase in domestic oil consumption. A dramatic increase in the rate of car ownership in Utrania could reasonably be expected to significantly increase domestic oil consumption, which could eat up the added oil production from the new fields.

A This choice is incorrect. There is no reason why stable oil prices should prevent Utrania's oil exports from increasing.

**B Correct.** An increase in car ownership would increase Utrania's oil consumption—and this supports the claim that oil exports might not increase.

C If anything, this suggests that oil exports should increase. So it would not be a good choice for completion of the argument.

D The advent of new technology allowing oil to be extracted from fields previously thought to be depleted would mean that there is even more reason to think that Utrania's oil exports will increase.

E This does not help to explain why exports would not increase. On the contrary, it suggests that the new fields will lead to increased exports.

**The correct answer is B.**

71. Which of the following, if true, most logically completes the argument?

Some dairy farmers in the province of Takandia want to give their cows a synthetic hormone that increases milk production. Many Takandians, however, do not want to buy milk from cows given the synthetic hormone. For this reason Takandia's legislature is considering a measure requiring milk from cows given the hormone to be labeled as such. Even if the measure is defeated, dairy farmers who use the hormone will probably lose customers, since \_\_\_\_\_.

(A) it has not been proven that any trace of the synthetic hormone exists in the milk of cows given the hormone

(B) some farmers in Takandia who plan to use the synthetic hormone will probably not do so if the measure were passed

(C) milk from cows that have not been given the synthetic hormone can be labeled as such without any legislative action

(D) the legislature's consideration of the bill has been widely publicized

(E) milk that comes from cows given the synthetic hormone looks and tastes the same as milk from cows that have not received the hormone

Argument Construction

Situation	Some dairy farmers in a province want to give their dairy cows a synthetic hormone, but many people in the province do not want to buy milk that is from cows given the hormone. The provincial legislature is considering a measure requiring milk from cows given the hormone to be labeled as such.
Reasoning	<i>What would be a reason to believe that dairy farmers who use the hormone will lose customers even if the measure is defeated?</i> If the measure passes, the dairy farmers who give cows the hormone may lose the many customers who do not want to buy such milk. If the measure is defeated, then milk produced with the hormone will not have to be labeled—so what would lead one to believe that hormone-using farmers would nevertheless lose customers? A statement that provides an answer to this question would logically complete the argument.

- A At best, this lack of proof might mitigate hormone-using farmers’ loss of customers, whatever the outcome of the legislature’s consideration of the measure.
- B The argument’s conclusion is mainly about what will happen if the measure is defeated, not what will happen if it passes.
- C Correct.** If the measure is defeated, the milk produced by farmers who avoid using the hormone would likely gain a market advantage if the milk was labeled as produced without use of the hormone. As a result, dairy farmers who use the hormone would probably lose customers.
- D Publicity could affect consumers’ attitudes about hormone-produced milk, but if the measure is defeated and labeling practices do not change, customers would have no way of knowing which milk was produced by use of the hormone.
- E This suggests that, in the absence of labeling, consumers would be unable to decide which milk was produced by use of the hormone, so dairy farmers who used the hormone would be unlikely to lose customers if the labeling measure is defeated.

The correct answer is C.

72. In order to reduce dependence on imported oil, the government of Jalica has imposed minimum fuel-efficiency requirements on all new cars, beginning this year. The more fuel-efficient a car, the less pollution it produces per mile driven. As Jalicans replace their old cars with cars that meet the new requirements, annual pollution from car traffic is likely to decrease in Jalica.
- Which of the following, if true, most seriously weakens the argument?

- (A) In Jalica, domestically produced oil is more expensive than imported oil.
- (B) The Jalican government did not intend the new fuel-efficiency requirement to be a pollution-reduction measure.
- (C) Some pollution-control devices mandated in Jalica make cars less fuel-efficient than they would be without those devices.
- (D) The new regulation requires no change in the chemical formulation of fuel for cars in Jalica.
- (E) Jalicans who get cars that are more fuel-efficient tend to do more driving than before.

Argument Evaluation

Situation	The Jalican government is requiring all new cars to meet minimum fuel-efficiency requirements starting this year. Cars that are more fuel efficient produce less pollution per mile driven.
Reasoning	<i>What evidence would suggest that annual pollution from car traffic will not decrease in Jalica, despite the new policy?</i> Air pollution from car traffic is unlikely to decrease if the new standards will result in more cars on the road or more miles driven per car; or if air pollution from car traffic in Jalica is increasing because of unrelated factors such as growing numbers of Jalicans who can afford cars, construction of more roads, etc. Evidence that any of these factors is present would cast doubt on the argument’s conclusion and thus weaken the argument.

- A The question at issue is not whether the new policy will reduce dependence on imported oil as the government intends, but rather whether it will reduce air pollution from car traffic.
- B A government policy may have consequences that the government did not intend it to have.
- C Even if these pollution-control devices make cars less fuel efficient, the new fuel-efficiency standards may still improve cars’ average fuel efficiency and thereby reduce air pollution.
- D Even if the fuel is unchanged, the new fuel-efficiency standards may still result in cars using less fuel and may thereby reduce air pollution.
- E Correct.** If the new fuel-efficient cars are driven more miles per year than older cars are, they may produce as much or more pollution per year than older cars do even though they produce less pollution per mile driven.

The correct answer is E.

73. Plantings of cotton bioengineered to produce its own insecticide against

bollworms, a major cause of crop failure, sustained little bollworm damage until this year. This year the plantings are being seriously damaged by bollworms. Bollworms, however, are not necessarily developing resistance to the cotton’s insecticide. Bollworms breed on corn, and last year more corn than usual was planted throughout cotton-growing regions. So it is likely that the cotton is simply being overwhelmed by corn-bred bollworms.

In evaluating the argument, which of the following would it be most useful to establish?

- (A) Whether corn could be bioengineered to produce the insecticide
- (B) Whether plantings of cotton that does not produce the insecticide are suffering unusually extensive damage from bollworms this year
- (C) Whether other crops that have been bioengineered to produce their own insecticide successfully resist the pests against which the insecticide was to protect them
- (D) Whether plantings of bioengineered cotton are frequently damaged by insect pests other than bollworms
- (E) Whether there are insecticides that can be used against bollworms that have developed resistance to the insecticide produced by the bioengineered cotton

**Argument Evaluation**

<b>Situation</b>	Although plantings of cotton bioengineered to produce an insecticide to combat bollworms were little damaged by the pests in previous years, they are being severely damaged this year. Since the bollworms breed on corn, and there has been more corn planted this year in cotton-growing areas, the cotton is probably being overwhelmed by the corn-bred bollworms.
<b>Reasoning</b>	<i>In evaluating the argument, which question would it be most useful to have answered?</i> The argument states that the bioengineered cotton crop failures this year (1) have likely been due to the increased corn plantings and (2) not due to the pests having developed a resistance to the insecticide. This also implies (3) that the failures are not due to some third factor.

It would be useful to know how the bioengineered cotton is faring in comparison to the rest of this year’s cotton crop. If the bioengineered cotton is faring better against the bollworms, that fact would support the argument because it would suggest that the insecticide is still combating bollworms. If, on the other hand, the bioengineered cotton is being more severely ravaged by bollworms than is other cotton, that suggests that there is some third cause that is primarily at fault.

A This would probably be useful information to those trying to alleviate the bollworm problem in bioengineered cotton. But whether such corn could be developed has no bearing on what is causing the bioengineered cotton to be damaged by bollworms this year.

**B Correct.** If bollworm damage on non-bioengineered cotton is worse than usual this year, then bollworm infestation in general is simply worse than usual, so pesticide resistance does not need to be invoked to explain the bollworm attacks on the bioengineered cotton.

C Even if other crops that have been bioengineered to resist pests have not successfully resisted them, that fact would not mean that the same is true of this cotton. Furthermore, the facts already suggest that the bioengineered cotton has resisted bollworms.

D Whether other types of pests often damage bioengineered cotton has no bearing on why bollworms are damaging this type of cotton more this year than in the past.

E This, too, might be useful information to those trying to alleviate the bollworm problem in bioengineered cotton, but it is not particularly useful in evaluating the argument. Even if there are pesticides that could be used against bollworms that have developed resistance to the insecticide of the bioengineered cotton, that does not mean that such pesticides are being used this year.

**The correct answer is B.**

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

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

(A) The amount of discount generally offered by manufacturers to retailers is carefully calculated to represent the minimum needed to draw consumers' attention to the product.

(B) For many consumer products the period of advertising discounted prices to consumers is about a week, not sufficiently long for consumers to become used to the sale price.

(C) For products that are not newly introduced, the purpose of such promotions is to keep the products in the minds of consumers and to attract consumers who are currently using competing products.

- (D) During such a promotion retailers tend to accumulate in their warehouses inventory bought at discount; they then sell much of it later at their regular price.
- (E) If a manufacturer fails to offer such promotions but its competitor offers them, that competitor will tend to attract consumers away from the manufacturer’s product.

Argument Construction

Situation	During promotion periods, manufacturers discount prices and dramatically increase the amount of product sold to retailers. However, manufacturers might make more profit without the promotions.
Reasoning	<i>How could promotion periods cut profits?</i> It is stated that promotion periods result in increased product sales to retailers. How could such sales decrease the manufacturers’ potential profits? If retailers buy more than they can sell during the promotion period, they will store the surplus in warehouses and sell it later at the regular price. Manufacturers lose their normal profits on these sales; moreover, the manufacturer will not be filling orders while the surplus exists. The resulting losses may be greater than any gains from increasing sales or winning new customers during the brief promotion period.

- A Calculating the minimum amount of discount should lead to greater profit for manufacturers, so this statement does not explain the potential loss of profit.
- B The brevity of the promotion period favors manufacturers because consumers do not become accustomed to the lower price.
- C Attracting customers’ attention should contribute to higher, not lower, profit.
- D Correct.** This statement properly identifies a factor that strengthens the argument.
- E Since the failure to offer promotions results in loss of customers to competitors, this statement shows that manufacturers gain by promotions.

The correct answer is D.

75. Many gardeners believe that the variety of clematis vine that is most popular among gardeners in North America is *jackmanii*. This belief is apparently correct since, of the one million clematis plants sold per year by the largest clematis nursery in North America, ten percent are *jackmanii*.
- Which of the following is an assumption on which the argument depends?



- (A) The nursery sells more than ten different varieties of clematis.
- (B) The largest clematis nursery in North America sells nothing but clematis plants.
- (C) Some of the *jackmanii* sold by the nursery are sold to gardeners outside North America.
- (D) Most North American gardeners grow clematis in their gardens.
- (E) For all nurseries in North America that specialize in clematis, at least ten percent of the clematis plants they sell are *jackmanii*.

Argument Construction

Situation	Of the clematis plants sold by the largest clematis nursery in North America, 10 percent are <i>jackmanii</i> , which many gardeners believe to be the most popular variety of clematis in North America.
Reasoning	<i>What must be true in order for the fact that 10 percent of the clematis sold at the nursery are jackmanii to provide evidence that jackmanii is the most popular variety of clematis in North America?</i> The argument assumes that sales of different varieties of clematis at the nursery reflect the relative levels of popularity of those varieties among North American gardeners. It also assumes that <i>jackmanii</i> is the best-selling clematis variety at the nursery, an assumption which requires that less than 10 percent of the nursery’s clematis sales are of any one variety other than <i>jackmanii</i> .

- A Correct.** Suppose the nursery sold ten or fewer varieties of clematis. Then at least one variety other than *jackmanii* would have to account for at least 10 percent of the nursery’s clematis sales, so *jackmanii* would not be the best-selling clematis variety at the nursery as the argument assumes.
- B The argument only concerns how popular *jackmanii* is relative to other varieties of clematis, not relative to any plants other than clematis that the nursery may sell.
- C If anything, this would weaken the argument by suggesting that the nursery’s *jackmanii* sales might reflect *jackmanii*’s popularity outside North America more than its popularity within North America.
- D This would indicate that clematis is a popular plant among North American gardeners, not that *jackmanii* is the most popular variety of clematis.
- E Even if *jackmanii* accounts for less than 10 percent of clematis sales at a few individual nurseries, it may still account for 10 percent or more of North American clematis sales overall.

**The correct answer is A.**

76. A compelling optical illusion called the illusion of velocity and size makes objects appear to be moving more slowly the larger the objects are. Therefore, a motorist's estimate of the time available for crossing a highway with a small car approaching is bound to be lower than it would be with a large truck approaching.

The conclusion above would be more properly drawn if it were made clear that the

- (A) truck's speed is assumed to be lower than the car's
- (B) truck's speed is assumed to be the same as the car's
- (C) truck's speed is assumed to be higher than the car's
- (D) motorist's estimate of time available is assumed to be more accurate with cars approaching than with trucks approaching
- (E) motorist's estimate of time available is assumed to be more accurate with trucks approaching than with cars approaching

**Argument Construction**

<b>Situation</b>	An optical illusion makes objects appear to be moving more slowly the larger they are. It is concluded that a driver's estimate of the time available to cross a highway is lower with a small car approaching than with a large truck approaching.
<b>Reasoning</b>	<i>What underlying assumption is made in the reasoning?</i> From the given premise about the optical illusion, we can infer that, to a motorist crossing a highway, a car actually approaching at 60 miles an hour seems significantly faster than a large truck that is approaching at the same speed. The motorist's estimate of time available to cross will thus be larger for the truck than for the car. The assumption stated here, but not stated in the passage, is that the car and truck are approaching <i>at the same speed</i> .

A If the truck is moving more slowly than the car, then the driver's perception is accurate, and not affected by the optical illusion.

**B Correct.** This statement properly identifies an assumption implicit in the reasoning.

C If the truck is moving faster than the car, the motorist might judge that the two vehicles were moving at the same speed—or even that the truck was moving faster.

D It does not matter for which type of vehicle the driver's estimate of lead time is more accurate; this assumption is not helpful in explaining the conclusion that the illusion makes larger objects appear to be moving more slowly than small objects.

E This contradicts information in the passage indicating that the larger the vehicle, the larger the distortion in the perceived speed.

**The correct answer is B.**

77. Country Y uses its scarce foreign-exchange reserves to buy scrap iron for recycling into steel. Although the steel thus produced earns more foreign exchange than it costs, that policy is foolish. Country Y’s own territory has vast deposits of iron ore, which can be mined with minimal expenditure of foreign exchange.

Which of the following, if true, provides the strongest support for Country Y’s policy of buying scrap iron abroad?

- (A) The price of scrap iron on international markets rose significantly in 1987.
- (B) Country Y’s foreign-exchange reserves dropped significantly in 1987.
- (C) There is virtually no difference in quality between steel produced from scrap iron and that produced from iron ore.
- (D) Scrap iron is now used in the production of roughly half the steel used in the world today, and experts predict that scrap iron will be used even more extensively in the future.
- (E) Furnaces that process scrap iron can be built and operated in Country Y with substantially less foreign exchange than can furnaces that process iron ore.

**Evaluation of a Plan**

<b>Situation</b>	A country could mine its vast deposits of iron ore with minimal expenditure of foreign exchange. Nevertheless, it uses its scarce foreign-exchange reserves to buy scrap iron for recycling into steel; this steel earns more foreign exchange than it costs to produce.
<b>Reasoning</b>	<i>Which statement supports the policy of buying scrap iron abroad?</i> The country is using scant foreign-exchange reserves to buy scrap iron when it could instead be mining its own iron ore with minimal expenditure of foreign exchange. But if processing the scrap iron involves far less expenditure of foreign exchange than processing the raw iron ore, the policy is justified.

- A A significant increase in the international price of scrap iron would be a reason against the policy.
- B A significant drop in foreign-exchange reserves means that conserving the reserves is all the more important, so this statement provides no support for the current policy.
- C This statement helps to preempt a possible objection to the present policy

—namely that steel from scrap iron is inferior to steel from iron ore. But it equally helps to preempt a possible objection to *changing* the present policy —namely that steel from iron ore is inferior to steel from scrap iron. It therefore provides no evidence that would weigh distinctly in favor of maintaining the present policy, as opposed to changing it.

D The increasing use of scrap iron for recycling into steel merely suggests that steel from scrap iron is an acceptable alternative to steel from iron ore. This general claim does not address the issue of whether Country Y’s policy involves a prudent use of foreign exchange.

**E Correct.** This statement properly identifies a factor that supports the policy.

**The correct answer is E.**

78. Since 1990 the percentage of bacterial sinus infections in Aqadestan that are resistant to the antibiotic perxicillin has increased substantially. Bacteria can quickly develop resistance to an antibiotic when it is prescribed indiscriminately or when patients fail to take it as prescribed. Since perxicillin has not been indiscriminately prescribed, health officials hypothesize that the increase in perxicillin-resistant sinus infections is largely due to patients’ failure to take this medication as prescribed.

Which of the following, if true of Aqadestan, provides most support for the health officials’ hypothesis?

- (A) Resistance to several other commonly prescribed antibiotics has not increased since 1990 in Aqadestan.
- (B) A large number of Aqadestanis never seek medical help when they have a sinus infection.
- (C) When it first became available, perxicillin was much more effective in treating bacterial sinus infections than any other antibiotic used for such infections at the time.
- (D) Many patients who take perxicillin experience severe side effects within the first few days of their prescribed regimen.
- (E) Aqadestani health clinics provide antibiotics to their patients at cost.

**Argument Construction**

<b>Situation</b>	In Aqadestan the percentage of bacterial sinus infections resistant to the antibiotic perxicillin has been increasing even though perxicillin has not been indiscriminately prescribed.
<b>Reasoning</b>	<i>What evidence most strongly suggests that the main reason perxicillin-resistant sinus infections are becoming more common is that patients are failing to take perxicillin as prescribed? Any</i>

evidence suggesting that patients have in fact been failing to take perxicillin as prescribed would support the hypothesis, as would any evidence casting doubt on other possible explanations for the increasing proportion of perxicillin-resistant sinus infections.
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A This suggests that some factor specific to perxicillin is increasing bacterial resistance to it, but that could be true whether or not the factor is patients' failure to take perxicillin as prescribed.

B If anything, this weakens the argument by suggesting that most people with sinus infections are never prescribed perxicillin, and that therefore relatively few people are getting prescriptions and then failing to follow them.

C The relative effectiveness of perxicillin when it first became available does not suggest that the reason it is now becoming less effective is that many patients are failing to take it as prescribed.

**D Correct.** These side effects would discourage patients from taking perxicillin as prescribed, so their existence provides evidence that many patients are not taking it as prescribed.

E If the clinics do not charge extra for perxicillin, that would make it more affordable and hence easier for many patients to take as prescribed.

**The correct answer is D.**

79. A product that represents a clear technological advance over competing products can generally command a high price. Because **technological advances tend to be quickly surpassed** and companies want to make large profits while they still can, **many companies charge the maximum possible price for such a product**. But large profits on the new product will give competitors a strong incentive to quickly match the new product's capabilities. Consequently, the strategy to maximize overall profit from a new product is to charge less than the greatest possible price.

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

(A) The first is a consideration raised to argue that a certain strategy is counterproductive; the second presents that strategy.

(B) The first is a consideration raised to support the strategy that the argument recommends; the second presents that strategy.

(C) The first is a consideration raised to help explain the popularity of a certain strategy; the second presents that strategy.

(D) The first is an assumption, rejected by the argument, that has been used to justify a course of action; the second presents that course of action.

(E) The first is a consideration that has been used to justify adopting a certain strategy; the second presents the intended outcome of that strategy.

Argument Construction

Situation	Often, when a company comes out with an innovative product, it will price the product as high as it can to maximize profits before the competitors quickly catch up. But this is not a good strategy because the very high price of the new product only encourages competitors to match the technological advance more quickly.
Reasoning	<i>Which option best describes the roles that the boldface portions play in the argument?</i> This type of item concerns only the argument’s structure—the way it is intended to work, not the quality of the argument or what might strengthen or weaken the argument. So even if a boldface portion could be used by the argument in a certain way, all that matters is its actual intended role. The fact that <i>technological advances tend to be quickly surpassed</i> serves to partly explain why <i>many companies charge the maximum possible price for such a product</i> . In other words, the first boldface portion helps explain the popularity of the strategy presented in the second boldface portion. The conclusion of the argument, however, is that the strategy exemplified in this latter boldface portion is unwise, so the argument as a whole opposes that strategy.

A Although the first boldface portion could be used as part of an argument that the strategy presented in the second boldface portion is counterproductive, that is not how it is used here. Rather, it immediately follows the word *because* and serves to explain the occurrence of what is described in the second boldface portion.

B This is clearly wrong because the second boldface portion presents the strategy that the argument opposes.

**C Correct.** It is the only choice that is consistent with the analysis of the reasoning presented above.

D The first boldface portion is not an assumption rejected by the argument; rather, it is affirmed in the argument.

E The argument does not expressly claim that the first boldface portion has been used to justify the strategy of setting the price as high as possible, although it implies that this is part of the justification that those adopting the strategy would give. More clearly, the second boldface portion does not describe the intended outcome of the strategy, but rather the means of bringing about that intended outcome (maximizing profits, by means of high prices).

**The correct answer is C.**

80. Gortland has long been narrowly self-sufficient in both grain and meat. However, as per capita income in Gortland has risen toward the world average, per capita consumption of meat has also risen toward the world average, and it takes several pounds of grain to produce one pound of meat. Therefore, since per capita income continues to rise, whereas domestic grain production will not increase, Gortland will soon have to import either grain or meat or both.

Which of the following is an assumption on which the argument depends?

- (A) The total acreage devoted to grain production in Gortland will not decrease substantially.
- (B) The population of Gortland has remained relatively constant during the country's years of growing prosperity.
- (C) The per capita consumption of meat in Gortland is roughly the same across all income levels.
- (D) In Gortland, neither meat nor grain is subject to government price controls.
- (E) People in Gortland who increase their consumption of meat will not radically decrease their consumption of grain.

**Argument Construction**

<b>Situation</b>	A country previously self-sufficient in grain and meat will soon have to import one or the other or both because its consumption of meat has risen as per capita income has risen. It takes several pounds of grain to produce one pound of meat.
<b>Reasoning</b>	<i>What conditions must be true for the conclusion to be true?</i> Meat consumption is rising. What about grain consumption? A sharp reduction in the amount of grain directly consumed by meat eaters could compensate for increased meat consumption, making the conclusion false. If people did radically decrease their grain consumption, it might not be necessary to import grain or meat. Since the argument concludes that the imports are necessary, it assumes that direct consumption of grain by those who begin to eat meat will not plunge.

- A The argument makes no assumptions about the acreage devoted to grain; it assumes only that the demand for grain will rise.
- B The argument is based on rising per capita income, not population levels.
- C The argument involves only meat consumption in general, not its distribution by income level.

D Since the argument does not refer to price controls, it cannot depend on an assumption about them.

**E Correct.** This statement properly identifies the assumption that those who begin to eat meat do not then greatly decrease their direct consumption of grains.

**The correct answer is E.**

81. Which of the following most logically completes the passage?

The figures in portraits by the Spanish painter El Greco (1541–1614) are systematically elongated. In El Greco’s time, the intentional distortion of human figures was unprecedented in European painting. Consequently, some critics have suggested that El Greco had an astigmatism, a type of visual impairment, that resulted in people appearing to him in the distorted way that is characteristic of his paintings. However, this suggestion cannot be the explanation, because \_\_\_\_\_.

- (A) several twentieth-century artists have consciously adopted from El Greco’s paintings the systematic elongation of the human form
- (B) some people do have elongated bodies somewhat like those depicted in El Greco’s portraits
- (C) if El Greco had an astigmatism, then, relative to how people looked to him, the elongated figures in his paintings would have appeared to him to be distorted
- (D) even if El Greco had an astigmatism, there would have been no correction for it available in the period in which he lived
- (E) there were non-European artists, even in El Greco’s time, who included in their works human figures that were intentionally distorted

**Argument Construction**

<b>Situation</b>	Figures in portraits by the Spanish painter El Greco are elongated. Some critics infer that this was because El Greco suffered from an astigmatism that made people appear elongated to him. But this explanation cannot be correct.
<b>Reasoning</b>	<i>Which option would most logically complete the argument?</i> We need something that provides the best reason for thinking that the explanation suggested by critics—astigmatism—cannot be right. The critics’ explanation might seem to work because ordinarily an artist would try to paint an image of a person so that the image would have the same proportions as the perceived person. So if people seemed to El Greco to have longer arms and legs than they actually had, the arms and legs of the painted figures should appear to others to be longer than people’s arms and legs normally are. This is how the



explanation seems to make sense. But if astigmatism were the explanation, then the elongated images in his pictures should have appeared to El Greco to be too long: he would have perceived the images as longer than they actually are—and therefore as inaccurate representations of what he perceived. So astigmatism cannot be a sufficient explanation for the elongated figures in his paintings.

A Even if subsequent artists intentionally depicted human forms as more elongated than human figures actually are, and they did so to mimic El Greco's painted figures, that does not mean that El Greco's figures were intentionally elongated.

B Although this option provides another possible explanation for El Greco's elongated figures, it provides no evidence that the people El Greco painted had such elongated figures.

**C Correct.** El Greco would have perceived the images of people in his paintings as too long, relative to his perception of the people themselves. This means that even if El Greco did have astigmatism, that factor would not provide an answer to the question: Why did El Greco paint images that he knew were distorted?

D The absence of an ability to correct astigmatism in El Greco's day does not undermine the hypothesis that it was astigmatism that caused El Greco to paint elongated figures.

E Again, this suggests another possible explanation for the distortion—namely, that El Greco did it deliberately—but it does not provide any reason to think that this is the correct explanation (and that the critics' explanation is actually incorrect).

**The correct answer is C.**

82. Political Advertisement:

Mayor Delmont's critics complain about the jobs that were lost in the city under Delmont's leadership. Yet the fact is that not only were more jobs created than were eliminated, but each year since Delmont took office the average pay for the new jobs created has been higher than that year's average pay for jobs citywide. So it stands to reason that throughout Delmont's tenure the average paycheck in this city has been getting steadily bigger.

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

(A) The unemployment rate in the city is higher today than it was when Mayor Delmont took office.

(B) The average pay for jobs in the city was at a ten-year low when Mayor

- Delmont took office.
- (C) Each year during Mayor Delmont’s tenure, the average pay for jobs that were eliminated has been higher than the average pay for jobs citywide.
- (D) Most of the jobs eliminated during Mayor Delmont’s tenure were in declining industries.
- (E) The average pay for jobs in the city is currently lower than it is for jobs in the suburbs surrounding the city.

Argument Evaluation

Situation	Every year since Mayor Delmont took office, average pay for new jobs has exceeded average pay for jobs citywide. So, the average paycheck in the city has been increasing since Delmont took office.
Reasoning	<i>Which option, if true, would most seriously weaken the argument?</i> If average pay for new jobs continually exceeds that for jobs generally, new jobs pay better (on average) than old jobs that still exist. But suppose the following occurred. Every year all of the highest paying jobs are eliminated and replaced with somewhat lower-paying jobs that still pay more than the average job. The result would be that every year the average pay for a new job would be greater than that for existing jobs, but the average pay for all jobs would nonetheless decrease. Thus, if every year during the mayor’s tenure the jobs that were eliminated paid better on average than jobs citywide, that would seriously weaken the argument: the conclusion could be false even if the information on which it is based is true.

- A The percentage of people in the city who have a job has no direct bearing on whether the average pay for jobs citywide is increasing or decreasing.
- B Whether the average pay was low when the mayor took office in comparison to the ten preceding years is immaterial to the comparison addressed in the argument’s conclusion.
- C Correct.** This information weakens the argument because it opens up the possibility that the jobs eliminated had higher average pay than the jobs created during Mayor Delmont’s tenure. This in turn would mean that the average pay was not increasing during Mayor Delmont’s tenure.
- D This, too, has no bearing on the argument, because we have no information about the average pay for jobs in those declining industries.
- E This is also irrelevant. No comparison is made (or implied) in the argument between jobs in the city and jobs in the suburbs.

The correct answer is C.

83. To prevent a newly built dam on the Chiff River from blocking the route of fish migrating to breeding grounds upstream, the dam includes a fish pass, a mechanism designed to allow fish through the dam. Before the construction of the dam and fish pass, several thousand fish a day swam upriver during spawning season. But in the first season after the project's completion, only 300 per day made the journey. Clearly, the fish pass is defective.

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

- (A) Fish that have migrated to the upstream breeding grounds do not return down the Chiff River again.
- (B) On other rivers in the region, the construction of dams with fish passes has led to only small decreases in the number of fish migrating upstream.
- (C) The construction of the dam stirred up potentially toxic river sediments that were carried downstream.
- (D) Populations of migratory fish in the Chiff River have been declining slightly over the last 20 years.
- (E) During spawning season, the dam releases sufficient water for migratory fish below the dam to swim upstream.

#### Argument Evaluation

<b>Situation</b>	A new dam includes a mechanism called a fish pass designed to allow fish to migrate upstream past the dam to their breeding grounds. The number of migrating fish fell from several thousand per day before the dam was built to three hundred per day in the first season after it was built, indicating—according to the argument—that the fish pass is defective.
<b>Reasoning</b>	<i>What evidence would suggest that the fish pass is not defective?</i> The argument implicitly reasons that a defective fish pass would make it difficult for the fish to migrate, which would explain why the number of migrating fish fell when the dam was completed. Any evidence suggesting an alternative explanation for the reduced number of migrating fish, such as an environmental change that occurred when the dam was built, would cast doubt on the argument's reasoning.

**A** A defective fish pass could prevent most of the fish from migrating upstream regardless of whether those that succeed ever return downstream.

**B** This would suggest that dams with properly functioning fish passes do not greatly reduce the number of migrating fish, so it would provide further evidence that the fish pass in this particular dam is defective.

**C Correct.** This suggests that the toxic sediments may have poisoned the fish and reduced their population. A smaller fish population could be

sufficient to explain the reduced number of fish migrating, which casts doubt on the argument's assumption that the explanation for their declining numbers involves the fish pass.

D A slight and gradual ongoing decline in migratory fish populations would not explain an abrupt and extreme decline right after the dam was built.

E This supports the argument's proposed explanation for the declining fish population by ruling out the alternative explanation that the dam does not release enough water for the fish to migrate.

**The correct answer is C.**