7.5 Answer Key

405. B
406. B
407. D
408. A
409. D
410. D
411. B
412. B
413. C
414. C
415. D
416. C
417. A
418. C
419. C
420. C
421. E
422. A
423. C
424. B
425. B
426. A
427. D
428. E
429. A
430. A
431. C
432. B
433. D
434. A
435. C
436. D
437. B
438. B
439. C
440. B
441. E
442. B
443. B
444. B
445. A
446. D
447. E
448. D
449. A
450. C
451. B
452. D
453. B
454. E
455. C
456. C
457. E
458. A
459. D
460. A
461. C
462. A
463. B
464. D
465. E
466. C
467. A
468. E
469. A
470. D
471. D
472. D
473. B
474. B
475. C
476. C
477. E
478. D
479. D
480. B
481. C
482. B
483. E
484. D
485. E
486. B
487. D
488. C
489. C
490. E
491. A
492. B
493. D
494. E
495. E
496. D
497. B
498. C
499. D
500. A
501. C
502. D
503. A
504. A
505. D
506. E
507. D
508. B
509. C
510. A
511. C
512. B
513. D
514. D
515. E
516. B
517. C
518. C
519. B
520. A
521. B
522. D
523. A
524. C
525. A
526. E
527. B
528. D
528. C
530. D
531. E
532. C
533. B
534. A
535. C
536. D
537. C
538. D
539. B
540. E
541. E
542. D
543. C

7.6 Answer Explanations

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

Questions 405–408 refer to the passage on page 362.

405. According to the passage, theory B states that which of the following is a factor that enables a schooling fish to escape predators?

(A) The tendency of fish to form compact groups
(B) The movement of other fish within the school
(C) The inability of predators to detect schools
(D) The ability of fish to hide behind one another in a school
(E) The great speed with which a school can disperse

Supporting idea

This question depends on understanding what the passage states about theory B, the "confusion effect." One element of theory B is that predators may experience sensory confusion created by large numbers of moving fish in a school.

A The compactness of groups of schooling fish is an element of theory A, not theory B.
B **Correct.** It is the movement of schooling fish around a predator that creates sensory confusion in the predator; this movement may distract the predator and help protect individual fish in the school.
C According to the passage's description of theory A, predators are actually slightly more likely to detect schools than they are to detect individual fish.
D Theory B does not involve fish hiding behind one another but rather moving around the predator.
E The passage does not discuss the speed of dispersal of schools of fish.

The correct answer is B.

406. According to the passage, both theory A and theory B have been developed to explain how

(A) fish hide from predators by forming schools
(B) forming schools functions to protect fish from predators
(C) schooling among fish differs from other protective behaviors
(D) small fish are able to make rapid decisions
(E) small fish are able to survive in an environment densely populated by large predators

Supporting idea

The passage states in its first paragraph that two theories were developed to explain why schooling occurs in so many fish species and that they both assume that schooling helps protect fish from predators.

A While theory A involves an explanation of how schooling makes an individual fish less likely to be found by predators, theory B explains how schooling protects fish even when they are detected by predators.
B **Correct.** Both theory A and theory B begin with the assumption that schooling provides protection from predators, and each theory offers a different explanation for how that protection occurs.
C The passage does not discuss protective behaviors other than schooling.
D The decision-making ability of predators, not schooling fish, is discussed in the passage; schooling is presented as an instinctive behavior.
E The passage suggests that only theory B helps explain schooling behavior in environments where many predators, large or otherwise, are found, and that theory A explains schooling in areas where predators are not as abundant.

The correct answer is B.

407. According to one explanation of the "confusion effect," a fish that swims in a school will have greater advantages for survival if it

(A) tends to be visible for no more than 200 meters
(B) stays near either the front or the rear of a school
(C) is part of a small school rather than a large school
(D) is very similar in appearance to the other fish in the school
(E) is medium-sized

Inference

The "confusion effect" is discussed in the third and fourth paragraphs. The first explanation of the "confusion effect" proposes that because predators prefer to select distinctive prey, they find it difficult to select one fish from among many that look the same.

A The 200-meter visibility of fish is part of the explanation for theory A, not theory B (the "confusion effect").
B The location of an individual fish within a school is not discussed in the passage as being important to the "confusion effect."
C The size of a school of fish is not discussed as an element of the "confusion effect."
D **Correct.** Because predators, according to the "confusion effect," prefer to select prey that is distinct from the rest of the school, a fish that is similar in appearance to the other fish in its school would most likely enjoy a survival advantage.
E The size of a fish relative to the other fish in its school would most likely contribute to its ability to survive: that is, if it resembled other fish in size, it would be safer, based on what the passage says about the "confusion effect." Furthermore, the passage gives no reason to think that merely being medium-sized would confer any advantage (unless the other fish were medium-sized as well).

The correct answer is D.

408. The author is primarily concerned with

(A) discussing different theories
(B) analyzing different techniques
(C) defending two hypotheses
(D) refuting established beliefs
(E) revealing new evidence

Main idea

Determining the author's primary concern depends on understanding the focus of the passage as a whole. The author presents two theories that purport to account for why fish, particularly small fish, tend to school and explains the arguments of proponents of each theory.

A **Correct.** The author discusses two theories—identified as theory A and theory B—that account for the tendency of fish to school.
B The author is not concerned with different techniques in the passage.
C The two theories of why fish school could be referred to as hypotheses, but the author is not primarily concerned with defending them; rather, the passage explains how each attempts to account for the phenomenon in question.
D The author presents, rather than refutes, beliefs about why fish tend to school.
E The author reveals no evidence, new or otherwise, in the passage. The passage is a general discussion of scientific opinions based on existing evidence.

The correct answer is A.

Questions 409–411 refer to the passage on page 364.

409. The primary purpose of the passage is to

(A) challenge recent findings that appear to contradict earlier findings
(B) present two sides of an ongoing scientific debate
(C) report answers to several questions that have long puzzled researchers
(D) discuss evidence that has caused a long-standing belief to be revised
(E) attempt to explain a commonly misunderstood biological phenomenon

Main idea

This question depends on understanding the passage as a whole. The passage begins by describing a long-held belief regarding humans' circadian rhythms: that the SCNs control them. It then goes on to explain that new findings have led scientists to believe that other organs and tissues may be involved in regulating the body's circadian rhythms as well.

A The passage does not challenge the more-recent findings. Furthermore, the recent findings that the passage recounts do not contradict earlier findings; rather, when placed alongside those earlier findings, they have led scientists to reach additional conclusions.
B The passage does not discuss a two-sided debate; no findings or conclusions are disputed by any figures in the passages.
C There is only one question at issue in the passage: whether the SCN alone control human circadian rhythms. Furthermore, nothing in the passage suggests that researchers have been puzzled for a long time about this.
D **Correct.** The new evidence regarding circadian rhythm–related gene activity in all the body's tissue has led scientists to revise their long-standing belief that the SCN alone control circadian rhythms.
E The biological phenomenon of circadian rhythms is not, at least as far as the passage is concerned, misunderstood. Its causes are being investigated and refined.

The correct answer is D.

410. The passage mentions each of the following as a function regulated by the SCNs in some animals EXCEPT

(A) activity level
(B) blood pressure
(C) alertness
(D) vision
(E) temperature

Supporting idea

This question asks about what is NOT specifically mentioned in the passage with regard to functions regulated by the SCN. Those functions, as identified in the passage, are blood pressure, body temperature, activity level, alertness, and the release of melatonin.

A The passage includes activity level in its list of functions regulated by the SCN.
B The passage includes blood pressure in its list of functions regulated by the SCN.
C The passage includes alertness in its list of functions regulated by the SCN.
D **Correct.** While the passage does say that cells in the human retina transmit information to the SCN, there is no suggestion that the SCN reciprocally control vision.
E The passage includes temperature in its list of functions regulated by the SCN.

The correct answer is D.

411. The author of the passage would probably agree with which of the following statements about the SCNs?

(A) The SCNs are found in other organs and tissues of the body besides the hypothalamus.
(B) The SCNs play a critical but not exclusive role in regulating circadian rhythms.
(C) The SCNs control clock genes in a number of tissues and organs throughout the body.
(D) The SCNs are a less significant factor in regulating blood pressure than scientists once believed.
(E) The SCNs are less strongly affected by changes in light levels than they are by other external cues.

Main idea

The author of the passage discusses the SCN in the passage in order to explain that they are most likely not, as long believed, solely responsible for the control of our circadian rhythms.

A The author states that the SCN are nerve clusters in the hypothalamus, and nothing in the passage contradicts or undermines the supposition that they are only in the hypothalamus.
B **Correct.** The author points out in the second paragraph that the SCN control core circadian function, but that circadian clocks found elsewhere in the body have an effect as well.
C The evidence offered in the second paragraph about the activity of the clock gene in rat livers suggests that these clock genes are not under the SCN's control. The passage does not suggest that the SCN control any of the non-SCN controllers of circadian rhythms.
D The author states in the second paragraph that scientists do not dispute the idea that the SCN regulate blood pressure.
E The first paragraph indicates that the SCN respond to light levels; clock genes in other tissues are the ones that may respond to other external cues.

The correct answer is B.

Questions 412–414 refer to the passage on page 366.

412. The primary purpose of the passage is to

(A) question the results of a study that examined the effect of service-quality guarantees in the restaurant industry
(B) discuss potential advantages and disadvantages of service-quality guarantees in the restaurant industry
(C) examine the conventional wisdom regarding the effect of service-quality guarantees in the restaurant industry
(D) argue that only certain restaurants would benefit from the implementation of service-quality guarantees
(E) consider the impact that service-quality guarantees can have on the service provided by a restaurant

Main idea

This question depends on understanding the passage as a whole. The first paragraph describes Tucci and Talaga's findings regarding the effect of service-quality guarantees: that they have different, more positive results for higher-priced restaurants than for lower-priced ones, which could be affected negatively. The second paragraph explains that a particular benefit from service guarantees could accrue to restaurants generally.

A The passage does not question the results of Tucci and Talaga's study; rather, the passage appears to accept the results of the study as accurate.
B **Correct.** The potential advantages involve the management and motivation of service staff, as well as, for higher-priced restaurants, a greater likelihood of being selected by customers over other restaurants. Potential disadvantages for lower-priced restaurants include the possibility that potential customers may believe that such restaurants are concerned about the quality of their service.

C The passage does not indicate whether there is any conventional wisdom regarding service-quality guarantees in the restaurant industry.

D The second paragraph of the passage suggests that restaurants in general could potentially enjoy some benefits from the implementation of service-quality guarantees. For lower-priced restaurants, these benefits could offset the possible negative effects of service-quality guarantees described in the first paragraph.

E The second paragraph of the passage indicates an effect that service-quality guarantees could have on a restaurant's staff and the service that the staff provides, but this is only one of the subsidiary points contributing to the focus of the passage as a whole. The first is more concerned with the question of what effect these guarantees would have on whether customers choose to patronize that restaurant.

The correct answer is B.

413. It can be inferred that the author of the passage would agree with which of the following statements about the appeal of service guarantees to customers?

(A) Such guarantees are likely to be somewhat more appealing to customers of restaurants than to customers of other businesses.

(B) Such guarantees are likely to be more appealing to customers who know what to anticipate in terms of service.

(C) Such guarantees are likely to have less appeal in situations where customers are knowledgeable about a business's product or service.

(D) In situations where a high level of financial commitment is involved, a service guarantee is not likely to be very appealing.

(E) In situations where customers expect a high level of customer service, a service guarantee is likely to make customers think that a business is worried about its service.

Inference

This question asks for an inference from the passage about the author's view of why and how service guarantees would appeal to customers. The question does not ask specifically about service guarantees in the context of restaurants, but rather service guarantees in general. The end of the first paragraph addresses this general question: a service guarantee may appeal most to customers in the case of activities whose quality they are less likely to know how to question.

A The author states that a service guarantee might have greater appeal in the case of skilled activities than it would for restaurant customers.

B According to the author, customers who know what to expect in terms of service—a group that includes restaurant customers—would likely find service guarantees less appealing.

C **Correct.** The author makes clear that service guarantees would be less appealing to restaurant customers when they know what to expect in terms of the quality of service.

D The passage provides some evidence that where a high level of financial commitment is involved, a service guarantee may be more rather than less appealing than in other situations. In discussing higher-priced restaurants, which require a relatively high level of financial commitment, the author states that Tucci and Talaga found evidence that a service guarantee would likely appeal to customers.

E The author implies that customers of higher-priced restaurants expect a high level of service, certainly a level higher than that expected by customers of lower-priced restaurants. But it is at lower-priced restaurants that Tucci and Talaga found that a service guarantee makes customers think a given restaurant is concerned about its service.

The correct answer is C.

414. According to the passage, Tucci and Talaga found that service guarantees, when offered by lower-priced restaurants, can have which of the following effects?

(A) Customers' developing unreasonably high expectations regarding service
(B) Customers' avoiding such restaurants because they fear that the service guarantee may not be fully honored
(C) Customers' interpreting the service guarantee as a sign that management is not confident about the quality of its service
(D) A restaurant's becoming concerned that its service will not be assiduous enough to satisfy customers
(E) A restaurant's becoming concerned that customers will be more emboldened to question the quality of the service they receive

Supporting ideas

This question requires identifying Tucci and Talaga's findings regarding service guarantees offered by lower-priced restaurants. The passage states directly that these researchers found in these situations that a guarantee could lead potential customers to think that the restaurant has concerns about its service.

A The passage does not report that Tucci and Talaga found that service guarantees create unreasonably high expectations regarding service.

B The passage does not report that Tucci and Talaga found that customers doubted that service guarantees would be honored.

C **Correct.** The passage explicitly indicates that Tucci and Talaga found that potential customers of lower-priced restaurants could interpret service guarantees as indicating worries about the quality of service.

D The passage indicates that Tucci and Talaga found that customers might think that lower-priced restaurants are offering service guarantees because they are concerned that the quality of their service is too low, but the passage does not indicate that service guarantees lead such restaurants to have concerns about the quality of their service, and in fact it may be that such guarantees could lead to improvements in service.

E The passage indicates that service guarantees offered at lower-priced restaurants may empower customers to question the quality of service, but it does not indicate that service guarantees lead restaurants to have concerns about this.

The correct answer is C.

Questions 415–418 refer to the passage on page 368.

415. Information in the passage suggests that David Pearce would most readily endorse which of the following statements concerning monetization?

(A) Monetization represents a strategy that is attractive to both environmentalists and their critics.
(B) Monetization is an untested strategy, but it is increasingly being embraced by environmentalists.
(C) Monetization should at present be restricted to ecological services and should only gradually be extended to such commercial endeavors as tourism and recreation.
(D) Monetization can serve as a means of representing persuasively the value of environmental conservation.
(E) Monetization should inform environmental decision-making processes only if it is accepted by environmentalist groups.

Inference

This question requires an understanding of David Pearce's view of monetization. According to the passage, Pearce finds the idea that conservation is unprofitable to be an illusion. He argues for showing the economic value of ecosystems in order to make progress in conserving those ecosystems.

A The passage attributes to Gretchen Daily the view that monetization is unpopular with environmentalists. The passage gives no reason to believe that Pearce would endorse the idea that environmentalists currently find monetization attractive.

B The passage gives no indication that monetization is increasingly being embraced by environmentalists, even if Pearce thinks it should be.

C The passage indicates Pearce's belief that some types of tourism are also types of ecological services that have economic value and that they should be monetized.

D Correct. Pearce believes that monetization quantifies the value of the services provided by ecological systems—and if that value is quantified, people are more likely to be persuaded to conserve those systems.

E Pearce is arguing, against some environmentalists, that monetization should inform the decision-making process with regard to preserving ecosystems.

The correct answer is D.

416. Which of the following most clearly represents an example of an "ecological service" as that term is used in line 20 ?

(A) A resort hotel located in an area noted for its natural beauty
(B) A water-purifying plant that supplements natural processes with nontoxic chemicals
(C) A wildlife preserve that draws many international travelers
(D) A nonprofit firm that specializes in restoring previously damaged ecosystems
(E) A newsletter that keeps readers informed of ecological victories and setbacks

Application

Based on the passage, *ecological services* are services provided by natural assets that have not been converted into commercial assets. Thus any example of such an ecological service requires that the area providing it is natural.

A The passage mentions resort hotels as an example of explicitly commercial assets. Although some hotels might be situated in ecologically valuable natural environments, any ecological services in such cases would be contributed by the natural environments, not by the hotels themselves.

B Water purifying is *an ecological* service if it is supplied by *undisturbed forests and wetlands*. The word *plant* here must mean a technological installation, not a botanical organism, because it is said to supplement—not to be part of—the natural processes. Thus it is not a natural asset and therefore does not provide an ecological service as described in the passage.

C Correct. The passage states that a wildlife preserve that creates jobs and generates income would be providing an ecological service.

D A nonprofit firm that restores damaged ecosystems would be performing a valuable ecology-related service, but it would not itself be an example of a natural asset providing an ecological service.

E Environmentalists and others would most likely find such a newsletter informative, but it would not be an ecological service, because it is not a service provided by a natural asset.

The correct answer is C.

417. According to the passage, Daily sees monetization as an indication of which of the following?

(A) The centrality of economic interests to people's actions
(B) The reluctance of the critics of environmentalism to acknowledge the importance of conservation
(C) The inability of financial interests and ecological interests to reach a common ideological ground
(D) The inevitability of environmental degradation
(E) The inevitability of the growth of ecological services in the future

Supporting ideas

This question asks about Daily's view of monetization, and according to the passage, she sees monetization as a practice that *reflects the dominant role that economic decisions play in human behavior*.

A **Correct.** According to the passage, Daily believes that economic interests are central to people's actions, and monetization of ecological services would take that central role realistically into account.

B Monetization, as Daily sees it, is a way of assigning value to conservation and thus acknowledging its importance. Many environmentalists, rather than their critics, are reluctant to embrace monetization, according to Daily.

C For Daily, monetization represents a way for financial interests and ecological interests to reach a common ground; by using this *common currency*, both sides can make good decisions about the environment.

D Monetization, on Daily's view, would help to prevent environmental degradation; the passage does not suggest that she regards such degradation as at all inevitable.

E Daily does not see monetization as inevitably spurring the growth of ecological services but as more likely preventing their decline by leaving those *services* undisturbed.

The correct answer is A.

418. Which of the following can be inferred from the passage concerning the environmentalists mentioned in line 8 ?

(A) They are organized in opposition to the generation of income produced by the sale of ecological services.

(B) They are fewer in number but better organized and better connected to the media than their opponents.

(C) They have sometimes been charged with failing to use a particular strategy in their pursuit of conservational goals.

(D) They have been in the forefront of publicizing the extent of worldwide environmental degradation.

(E) They define environmental progress differently and more conservatively than do other organized groups of environmentalists.

Inference

The sentence in question states that critics blame environmentalists for their failure *to address the economic issues of environmental degradation*.

A The passage states that in the absence of monetization, conservation can appear unprofitable. But this does not mean that the environmentalists in question are opposed to conservation generating income.

B The passage does not address the issue of the number of environmentalists in question, the number of those opposed to them, or whether either group is better connected to the media.

C **Correct.** The passage indicates that critics of the environmentalists in question believe environmentalists are to blame for not using an effective economics-based strategy to promote conservation.

D Although it may be the case that the environmentalists in question have been prominent in publicizing worldwide environmental degradation, the passage does not provide grounds for inferring that they have been.

E The passage suggests that certain critics consider environmentalists in general to be at fault for failing to address economic issues. In this respect, the passage makes no distinctions among different environmentalist groups, organized or otherwise.

The correct answer is C.

Questions 419–422 refer to the passage on page 370.

419. According to the passage, the studies referred to in line 12 reported which of the following about the effect of price on consumers' perception of the performance risk associated with a new product?

(A) Although most consumers regard price as an important factor, their perception of the performance risk associated with a new product is ultimately determined by the manufacturer's reputation.
(B) Price interacts with the presentation of an advertised message to affect perceived performance risk.
(C) Price does not significantly affect consumers' perception of the performance risk associated with a new product.
(D) Consumers tend to regard price as more important than the manufacturer's credibility when they are buying from that manufacturer for the first time.
(E) Consumers are generally less concerned about a new product's performance risk when that product is relatively expensive.

Supporting ideas

The question asks about information explicitly provided in the passage. The first paragraph explains that there are *conflicting findings* in the research about how the price of a product affects a consumer's perception of the performance risk of that product. Some studies have found that higher priced products reduce the perception of performance risk. The *other studies* referred to in line 12, however, have found little or no connection between price and perceived performance risk.

A The passage does not mention that these studies consider the manufacturer's reputation.
B The passage does not mention that these studies consider advertising messages.
C **Correct.** The passage indicates that these studies have found little or no connection between relative price and consumers' perception of performance risk.
D The passage does not mention that these studies consider the manufacturer's credibility.
E Although some studies have found that a relatively high price reduces the perception of performance risk, the passage explains that the studies referred to in line 12 have not confirmed that finding.

The correct answer is C.

420. The "past research" mentioned in line 25 suggests which of the following about perceived performance risk?

(A) The more expensive a new product is, the more likely consumers may be to credit advertised claims about that product.
(B) The more familiar consumers are with a particular manufacturer, the more willing they may be to assume some risk in the purchase of a new product being advertised by that manufacturer.
(C) Consumers' perception of the performance risk associated with a new product being advertised may be influenced by an interplay between the product's price and the manufacturer's credibility.
(D) Consumers may be more likely to believe that a product will function as it is advertised to do when they have bought products from a particular manufacturer before.
(E) The price of a particular advertised product may have less impact than the manufacturer's credibility on consumers' assessment of the performance risk associated with that product.

Supporting ideas

The question asks about information explicitly provided in the passage. The second paragraph explains that, according to some research, consumers perceive a product as having less performance risk when they trust the source of advertising about that product. *Past research*, however, suggests that performance risk is affected not merely by the credibility of the source, but by an interaction between source credibility and the price of the product.

A The passage does not indicate that the past research addressed the question of how the price of a product affects consumers' perception of advertised claims. It only says that the research suggests that the two factors *interact*.

B Although the passage discusses consumers' perception of how risky a purchase might be, it does not address the relationship between familiarity and willingness to assume risk.

C **Correct.** The *past research* suggests that performance risk is affected by an interaction between the price of the product and the credibility of the source of the advertising about the product—in other words, the manufacturer.

D The *past research* suggests that consumers' beliefs about a product's performance are affected not merely by their perception of the manufacturer, but by an interplay between source credibility and product price. The passage does not mention any possible role of prior experience in this interplay.

E The passage does not discuss whether price or the manufacturer's credibility has more of an effect on perceived performance risk.

The correct answer is C.

421. The passage is primarily concerned with

(A) challenging the implications of previous research into why consumers try new products

(B) suggesting new marketing strategies for attracting consumers to new products

(C) reconciling two different views about the effect of price on consumers' willingness to try new products

(D) describing a new approach to researching why consumers try new products

(E) discussing certain findings regarding why consumers try new products

Main idea

The question depends on understanding the passage as a whole. The passage begins with a statement explaining that much research has investigated *what motivates consumers to try new products*. It then defines one such motivating factor—perception of performance risk. The remainder of the passage summarizes research into how price and a manufacturer's advertising affect consumers' perception of performance risk.

A The passage summarizes research findings that conflict with one another but does not support some findings over others.

B The passage does not suggest any new marketing strategies.

C The first paragraph mentions a study that could reconcile two conflicting findings, but this is only a supporting point in the passage's larger purpose of summarizing research.

D The passage does not describe new research approaches.

E **Correct.** The passage discusses studies about performance risk, which is a factor that motivates consumers to try new products.

The correct answer is E.

422. Which of the following, if true, would most tend to weaken the conclusions drawn from "some of this research" (see line 8)?

(A) In a subsequent study, consumers who were asked to evaluate new products with relatively low prices had the same perception of the products' performance risk as did consumers who were shown the same products priced more expensively.

(B) In a subsequent study, the quality of the advertising for the products that consumers perceived as having a lower performance risk was relatively high, while the quality of the advertising for the products that consumers perceived as having a higher performance risk was relatively poor.

(C) In a subsequent study, the products that consumers perceived as having a lower performance risk were priced higher than the highest priced products in the previous research.

(D) None of the consumers involved in this research had ever before bought products from the manufacturers involved in the research.

(E) Researchers found that the higher the source credibility for a product, the more consumers were willing to pay for it.

Evaluation

The question depends on evaluating the reasoning behind the conclusions of some research and deciding which evidence would weaken them. The research concludes that higher prices reduce consumers' perception of performance risk associated with a particular product. This conclusion involves a claim of cause and effect, so evidence showing that higher prices do not cause that effect would weaken the argument.

A **Correct.** If lowering prices has no effect on consumers' perception of performance risk, the conclusions of the research are called into question.

B A correlation between quality of advertising and perceived performance risk is not clearly relevant to the research conclusions about the effects of price.

C This answer choice provides no basis for comparison among prices within the subsequent study. For all we can tell, the prices that correlated with higher perceived performance risk in the subsequent study may have been lower than those that correlated with lower perceived risk. In that case, the subsequent study would tend to strengthen, not weaken, the conclusions drawn from the earlier research.

D Consumers' lack of familiarity with other products from the manufacturers is not clearly relevant to the studies' conclusions about the effects of price.

E Credibility of the source of advertisements is discussed as a separate issue in the second paragraph and is not clearly relevant to these studies' conclusions about the effects of price. To the extent that it may be obliquely relevant, it tends to strengthen, rather than to weaken, the conclusions.

The correct answer is A.

Questions 423–427 refer to the passage on page 372.

423. The primary purpose of the passage is to

(A) compare the economic role played by southern banks with the economic role played by banks in the rest of the United States during the late eighteenth and early nineteenth centuries

(B) reevaluate a conventional interpretation of the role played by banks in the American economy during the late eighteenth and early nineteenth centuries

(C) present different interpretations of the role played by banks in the American economy during the late eighteenth and early nineteenth centuries

(D) analyze how the increasing number of banks in the late eighteenth and early nineteenth centuries affected the American economy

(E) examine how scholarly opinion regarding the role played by banks in the American economy during the late eighteenth and early nineteenth centuries has changed over time

Main idea

The question depends on understanding the passage as a whole. The passage describes two contrasting views about the role banks played in the economic growth of the United States around the turn of the nineteenth century. The first paragraph describes the view that banks played only a small role. The second paragraph describes the contrasting view that banks played a critical role.

A The mention of banks in the South is a small part of a larger discussion about the role of banks in the country as a whole.

B The passage describes two major views held by historians; it does not reevaluate either of those views.

C **Correct**. The passage describes two different views about the role that banks played in America's growing economy.

D The passage does not analyze any aspect of the relationship between the increasing number of banks and the economy. It alludes to the increase in numbers only within a broader description of two contrasting views about how banks affected the economy.

E The passage suggests that at the time when it was written, the two views it describes were both still held among historians.

The correct answer is C.

424. The passage suggests that the scholars mentioned in line 4 would argue that the reason banks tended not to fund manufacturing and transportation projects in the late eighteenth and early nineteenth centuries was that

(A) these projects, being well established and well capitalized, did not need substantial long-term financing from banks
(B) these projects entailed a level of risk that was too great for banks' conservative lending practices
(C) banks preferred to invest in other, more speculative projects that offered the potential for higher returns
(D) bank managers believed that these projects would be unlikely to contribute significantly to economic growth in the new country
(E) bank managers believed funding these projects would result in credit being extended to too many borrowers

Inference

The question asks about information implied by the passage. According to the scholars' view described in the first paragraph, banks followed conservative lending practices: they shunned projects that were uncertain and that required substantial investments in capital. It follows that, according to those scholars, the reason banks chose not to fund certain projects was that they entailed too great a risk.

A The passage indicates that manufacturing and transportation projects were less well established than those the banks preferred to fund, not more so.
B **Correct.** Because the projects were *uncertain* and required a great deal of capital, banks considered them too risky.
C The passage indicates that banks followed conservative lending practices and avoided investments that were uncertain.
D The passage does not mention banks' beliefs about economic growth, and it does not provide any basis for inferring that the scholars in question held any particular views regarding such beliefs.
E The passage does not mention, or provide a basis for inferences about, bank managers' concerns about numbers of borrowers.

The correct answer is B.

425. The passage suggests that Paul Gilje would be most likely to agree with which of the following claims about the lending practices of the "earliest banks" (see line 21) ?

(A) These lending practices were unlikely to generate substantial profits for banks.
(B) These lending practices only benefited a narrow sector of the economy.
(C) The restrictive nature of these lending practices generated significant opposition outside of the South.
(D) The restrictive nature of these lending practices forced state legislatures to begin granting more bank charters by the early nineteenth century.
(E) These lending practices were likely to be criticized by economic elites as being overly restrictive.

Inference

This question asks about conclusions that can be logically inferred from information provided in the passage. According to the second paragraph, Paul Gilje believes that a driving force in American economic growth in the early nineteenth century was banks' lending to a larger and more diverse group of borrowers. The question asks what this would imply about Gilje's view toward earlier banks—which, the passage explains, offered credit only to *well-connected merchants*.

A The profitability of banks' lending practices is not at issue in the discussion.
B **Correct**. The passage says that the earliest banks had primarily made loans only to a narrow sector—well-connected merchants—and that they began lending more broadly in the early nineteenth century. It then cites Gilje's view to corroborate and explicate this claim. This strongly suggests that Gilje agrees with the claim.
C Opposition to the earliest banks is not mentioned or alluded to in the discussion.
D The passage provides no basis for inferring that Gilje held any particular view as to why legislatures began granting more bank charters.

E The passage does not mention or provide a basis for inference about the views of economic elites regarding the lending practices of the earliest banks in the United States. It thus provides no basis for inferring that Gilje would have any particular opinion on this topic.

The correct answer is B.

426. The passage suggests that the opposition to banks in the South in the early nineteenth century stemmed in part from the perception that banks

(A) did not benefit more than a small minority of the people
(B) did not support the interests of elite planters
(C) were too closely tied to transportation and industrial interests
(D) were unwilling to issue the long-term loans required by agrarian interests
(E) were too willing to lend credit widely

Inference

The question asks about statements that can be inferred from information provided in the passage. The second paragraph explains that people who opposed banks in the South saw them as monopolies controlled by elite planters. This would imply that those who opposed banks believed that most people in the South did not benefit from them.

A **Correct.** Since people opposed the banks on the grounds that they were monopolies controlled by an elite group of planters, they likely thought banks did not benefit most of the population.
B The passage implies that people believed the banks did serve the interests of elite planters.
C The passage indicates that people believed banks in the South were tied to planters, not to transportation and industrial interests.
D Southern banks' willingness to provide long-term loans is not discussed or alluded to in the passage.
E The passage does not imply that anyone believed banks in the South were willing to lend credit widely. Since people believed the banks were controlled by the elite, they more likely thought banks were unwilling to lend credit widely.

The correct answer is A.

427. Which of the following statements best describes the function of the last sentence of the passage?

(A) It provides evidence tending to undermine the viewpoint of the scholars mentioned in line 5.
(B) It resolves a conflict over the role of banks summarized in the first paragraph.
(C) It clarifies some of the reasons state legislatures began granting more bank charters.
(D) It qualifies a claim made earlier in the passage about the impact of banks on the American economy in the early nineteenth century.
(E) It supports a claim made earlier in the passage about how the expansion of credit affected the economy.

Evaluation

This question asks about the function of the last sentence in relation to the rest of the passage. The first paragraph describes the view of one set of historians. The second paragraph describes the contrasting view of a second set of historians. The last sentence of the passage points out an exception mentioned by the second set of historians.

A The last sentence pertains to the view of historians described in the second paragraph, not those described in the first paragraph.
B The conflict between the two differing views is not resolved by the passage.
C The passage does not explain why legislatures began granting more bank charters.
D **Correct**. The second set of historians claim banks spurred American economic growth at the turn of the nineteenth century, but the last sentence adds an exception to that claim.
E The last sentence does not support the claim made by the second set of historians, but rather serves as an exception to that claim.

The correct answer is D.

Questions 428–430 refer to the passage on page 374.

428. According to the passage, the difference in the amount of cratering on Callisto's and Io's respective surfaces can probably be explained by the difference between these two moons with respect to which of the following factors?

(A) Size
(B) Ice content
(C) The rate of bombardment by comets and asteroids
(D) The influence of Jupiter's other moons
(E) The level of geological activity

Supporting idea

Cratering is discussed in the second paragraph. The passage states that Callisto is heavily cratered, while Io has no detectable craters. Io is the moon closest to Jupiter, and Callisto is the farthest away. Their relative positions are accompanied by a corresponding difference in geological activity: Io is very geologically active, while Callisto is not active at all. Io's geological activity means that it is being regularly resurfaced, so it is unlikely to retain any evidence of cratering—unlike Callisto, which experiences no resurfacing, leaving its craters intact.

A While the passage makes clear that Callisto is larger than Io, it does not address whether their relative size explains the difference in their respective amounts of cratering.

B According to the passage, Callisto and Io differ in terms of their ice content, but nothing in the passage indicates that that content affects the cratering on their surfaces.

C The passage states that Io experiences a higher rate of bombardment than Callisto does, but while that bombardment most likely causes cratering on Io, its surface does not retain those craters. Thus, the rate of bombardment does not, in itself, explain the difference in cratering on the surface of the two moons.

D The only other moons of Jupiter discussed in the passage are Ganymede and Europa, and the passage does not consider their effect on the cratering of Callisto and Io.

E **Correct.** Because Io experiences a high degree of geological activity, its surface is continuously resurfaced, which means that the surface shows no craters. Callisto, on the other hand, is not geologically active and thus is not resurfaced regularly, which explains why its surface is heavily cratered.

The correct answer is E.

429. Which of the following best describes the purpose of the second paragraph of the passage?

(A) To provide further evidence of the systematic variation in the characteristics of Jupiter's four largest moons
(B) To present a comprehensive theory to explain the systematic variation in the characteristics of Jupiter's four largest moons
(C) To explain the significance of the systematic variation in the characteristics of Jupiter's four largest moons
(D) To introduce facts that contradict conventional assumptions about Jupiter's four largest moons
(E) To contrast the characteristics of Jupiter's four largest moons with the characteristics of the planets of the solar system

Evaluation

This question depends on understanding how the second paragraph functions in the context of the passage as a whole. The first paragraph discusses the way in which the composition of Jupiter's four largest moons varies with distance from Jupiter, and the second paragraph extends the idea of distance-based variation to geological activity and surface appearance.

A **Correct.** The second paragraph presents evidence related to the amount of geological activity and surface cratering in order to extend the first paragraph's suggestion that the characteristics of Jupiter's four largest moons vary systematically based on their distance from Jupiter.

B The passage does not offer a theory to account for the systematic variation in the characteristics of Jupiter's largest moons; it merely describes several instances of that variation.

C The second paragraph provides more examples of the systematic variation in the characteristics of Jupiter's largest moons rather than explaining that variation's significance.

D The passage describes Jupiter's moons but does not identify any conventional assumptions about those moons that are contradicted by facts introduced in the passage.

E The first paragraph suggests that Jupiter's moons exhibit differences in characteristics that are more "systematic" than are those of the planets in the solar system, but the characteristics are not themselves contrasted; in fact, the first paragraph suggests that they are similar. The second paragraph does not discuss the planets of the solar system at all.

The correct answer is A.

430. The author's reference to Jupiter's gravity in line 25 serves primarily to

(A) indicate why the absence of craters on Io's surface is surprising

(B) explain the presence of craters on the surface of Jupiter's four largest moons

(C) provide an explanation for the lack of geological activity on Callisto

(D) contrast Jupiter's characteristics with the characteristics of its four largest moons

(E) illustrate the similarity between Jupiter's four largest moons and the planets of the solar system

Evaluation

The reference to Jupiter's gravity is part of the author's discussion of cratering on Jupiter's moons; Jupiter's gravity is strong enough to attract comets and asteroids that then bombard its inner moons. A high bombardment rate would seem to indicate that a great deal of cratering would occur on those inner moons, and yet the passage reports that, unexpectedly, on the innermost moon, Io, no craters have been detected.

A **Correct.** Jupiter's gravity attracts comets and asteroids, which increases the bombardment rate of its inner moons, including Io. This bombardment makes it surprising that Io's surface shows no cratering.

B The passage discusses the likely effect of Jupiter's gravity on its inner moons but not its outer moons; two of the large moons the passage discusses are outer moons.

C According to the passage, Callisto, an outer moon, lacks geological activity because of its distance from Jupiter; Jupiter's gravity is not offered as a contributing factor to this inactivity.

D The passage does not contrast Jupiter with its moons; rather, it compares the moons to one another.

E The first paragraph of the passage suggests that Jupiter's moons vary in a way similar to that of the planets of the solar system, but the author does not refer to Jupiter's gravity to illustrate the similarity in this variation.

The correct answer is A.

Questions 431–434 refer to the passage on page 376.

431. According to the passage, the research mentioned in line 6 suggests which of the following about lower-ranked top executives and postacquisition success?

(A) Given that these executives are unlikely to contribute to postacquisition success, little effort should be spent trying to retain them.

(B) The shorter their length of service, the less likely it is that these executives will play a significant role in postacquisition success.

(C) These executives are less important to postacquisition success than are more highly ranked top executives.

(D) If they have long tenures, these executives may prove to be as important to postacquisition success as are more highly ranked top executives.

(E) Postacquisition success is unlikely if these executives are retained.

Supporting idea

The question asks about information provided by the passage. According to the third sentence, research suggests that retaining the highest-level top executives in an acquisition is more strongly associated with success than retaining lower-ranked top executives—which suggests, in turn, that lower-ranked top executives are less important than top-level executives to postacquisition success, though it does not suggest that they are unimportant to such success.

A The research indicates that lower-ranked top executives are less strongly associated with success than are higher-ranked executives but does not provide advice about retention efforts.

B The research mentioned in the third sentence does not consider length of service.

C **Correct.** The research indicates that lower-ranked top executives are less strongly associated with postacquisition success than are the highest-ranked executives.

D The research mentioned in the third sentence does not consider length of service.

E The research suggests that lower-ranked top executives are less strongly associated with postacquisition success but does not suggest that they decrease the likelihood of success.

The correct answer is C.

432. The resource-based view, as described in the passage, is based on which of the following ideas?

(A) The managerial skills of top executives become strongest after the first five years of their tenure.

(B) Company-specific knowledge is an important factor in the success of an acquisition process.

(C) The amount of nontransferable knowledge possessed by long-tenured top executives tends to be underestimated.

(D) Effective implementation of an acquisition depends primarily on the ability of executives to adapt to change.

(E) Short-tenured executives are likely to impede the implementation of a successful acquisition strategy.

Evaluation

This question requires analysis of the reasoning underlying one of the two explanations described in the passage. The resource-based view (RBV) holds that retaining high-level executives with long tenure will contribute to success because those people have important company-specific knowledge. This view rests on the assumption that company-specific knowledge is valuable to postacquisition success.

A In RBV, executives with long tenure are valuable not specifically for their managerial skills but for their knowledge about the acquired company. The passage does not restrict to five years the period in which this knowledge is gained.

B **Correct.** RBV values executives' knowledge of the acquired company and is based on the belief that company-specific knowledge is valuable for postacquisition success.

C The passage does not indicate that RBV claims that executives' company-specific knowledge is generally undervalued. But the passage does indicate that RBV regards such knowledge as valuable to postacquisition success.

D In RBV, executives with long tenure are valuable not for their ability to adapt to change, but for their knowledge about the acquired company.

E RBV does not suggest that short-tenured executives impede postacquisition success, only that they are less important to success than the highest-ranked executives.

The correct answer is B.

433. The passage suggests that Bergh and a proponent of the upper echelons perspective would be most likely to disagree over which of the following?

(A) Whether there is a positive correlation between short organizational tenure and managerial adaptability

(B) Whether there is a positive correlation between long organizational tenure and the acquisition of idiosyncratic and nontransferable knowledge

(C) Whether adaptability is a useful trait for an executive who is managing an acquisition process

(D) Whether retaining less-tenured top executives of an acquired company is an optimal strategy for achieving postacquisition success

(E) Whether retaining highest-level top executives of acquired companies is more important than retaining lower-ranked top executives

Inference

The question asks about conclusions that can reasonably be drawn from the information provided in the passage. Bergh's study supports the resource-based view (RBV), which suggests that top executives with long tenure are more valuable to postacquisition success than other executives. The upper echelons perspective (UEP), in contrast, suggests that top executives with shorter tenure are more valuable to postacquisition success. Thus, Bergh and a proponent of UEP would likely disagree about whether long or short tenure top executives are more valuable to a positive outcome in a postacquisition situation.

A The passage does not provide sufficiently specific information about statistical relationships to determine whether Bergh and proponents of UEP would agree or disagree about whether there is such a positive correlation.

B There is a weak suggestion in the passage that Bergh believes such a positive correlation exists, but there is no indication that a proponent of UEP would question such a correlation.

C The passage does not indicate that Bergh would disagree with proponents of UEP that adaptability is a valuable trait in an executive who is managing an acquisition.

D **Correct.** The passage suggests that proponents of UEP believe that retaining less-tenured top executives during and after an acquisition is a better strategy, while Bergh believes that retaining longer-tenured top executives is better.

E The passage suggests that Bergh and proponents of UEP agree that retaining the highest-level top executives is more important to postacquisition success than is retaining lower-ranked top executives.

The correct answer is D.

434. According to the passage, prior to Bergh's study, research on the role of top executives of acquired companies in business acquisition success was limited in which of the following ways?

(A) It did not address how the organizational tenure of top executives affects postacquisition success.

(B) It did not address why some companies have longer-tenured CEOs than others.

(C) It did not consider strategies for retaining long-tenured top executives of acquired companies.

(D) It failed to differentiate between the contribution of highest-level top executives to postacquisition success and that of lower-ranked top executives.

(E) It underestimated the potential contribution that lower-level top executives can make to postacquisition success.

Supporting idea

This question asks about information explicitly provided in the passage. The first paragraph summarizes research indicating that retaining highest-level top executives during and after an acquisition is more strongly associated with successful outcomes than retaining lower-ranking top executives. The paragraph then states that this research has limitations, including failing to take into account how long the highest-ranking executives have worked for the company. The second paragraph explains that Bergh's study responds to those limitations by analyzing the role of tenure (length of service in the organization).

A **Correct.** The passage indicates that the research about the role of highest-level executives in acquisitions is limited by its failure to consider tenure.

B The passage does not portray the failure of the research to address this as a limitation of the research in question.

C The passage does not portray the failure of the research to consider this as a limitation of the research in question.

D The passage indicates that the research does, in fact, differentiate between the respective contributions of these two groups of top executives.

E Undervaluing the contributions of lower-level top executives is not one of the limitations mentioned in the passage.

The correct answer is A.

Questions 435–438 refer to the passage on page 378.

435. According to the passage, which of the following contributed to Marcus Garvey's success?

(A) He introduced cultural and historical consciousness to the African American community.

(B) He believed enthusiastically in the traditional American success ethos.

(C) His audience had already formed a consciousness that made it receptive to his message.

(D) His message appealed to critics of African American support for United States military involvement in the First World War.

(E) He supported the movement to protest segregation that had emerged prior to his arrival in the United States.

Supporting idea

To answer this question, find what the passage states explicitly about how Marcus Garvey achieved his success. The passage begins by stating that Garvey arrived at the right time: that returning African American soldiers were primed to receive what he had to say about the African American community. These soldiers already held strong beliefs about their rights to opportunities for success; the passage concludes that the divide between the soldiers' expectations and their experiences led to Garvey's success.

A The passage states that African American people were in possession of a strong cultural and historical consciousness prior to Garvey's arrival in the United States.

B The passage attributes belief in the traditional American success ethos to African American people who joined the armed forces; it does not mention Garvey's beliefs on this subject.

C **Correct.** African American soldiers who had experienced segregation during the First World War were ready to hear what Garvey had to say.

D Critics of African American support for United States involvement in the First World War are not mentioned in the passage.

E While Garvey most likely would have supported a movement to protest segregation, such a movement is not discussed in the passage.

The correct answer is C.

436. The passage suggests that many African American people responded to their experiences in the armed forces in which of the following ways?

(A) They maintained as civilians their enthusiastic allegiance to the armed forces.

(B) They questioned United States involvement in the First World War.

(C) They joined political organizations to protest the segregation of African American troops and the indignities they suffered in the military.

(D) They became aware of the gap between their expectations and the realities of American culture.

(E) They repudiated Garvey's message of pride and unity.

Inference

According to the passage, African Americans enthusiastically joined the armed services but were confronted with continued segregation, both in the military and when they returned home. The passage does not explicitly state their response to these experiences, but a response can be inferred. The second paragraph refers to anthropologist Anthony F. C. Wallace, who argued that a revitalization movement may be brought about by the perception of a gap between expectations and reality, and such a revitalization did occur in African American communities following the First World War; thus, many African American people may have become aware of a gap such as Wallace described.

A The passage states that African American troops experienced segregation and other indignities while in the military; these experiences could reasonably be inferred to have dampened their enthusiasm for the armed forces. Regardless, the passage does not suggest an enthusiastic allegiance.

B The passage describes African American people's enthusiasm about joining the military. Although they experienced segregation and other indignities while in the military, the passage does not suggest that their opinion about involvement in the war changed.

C While African American troops may have joined political organizations, the passage does not provide any actual evidence of this having occurred.

D **Correct.** The fact that, as the passage states, a revitalization movement occurred in the African American community following the First World War suggests that the returning soldiers did become aware of the gap between their expectations of an improved situation with regard to segregation and the reality of continued segregation in the United States.

E The passage does not suggest that African American troops repudiated Garvey's message. On the contrary, it states that Garvey built *the largest revitalization movement in African American history*. This suggests that the members of the African American community, including the returning soldiers, were extremely receptive to Garvey's message.

The correct answer is D.

437. It can be inferred from the passage that the "scholars" mentioned in line 24 believe which of the following to be true?

(A) Revitalization resulted from the political activism of returning African American soldiers following the First World War.

(B) Marcus Garvey had to change a number of prevailing attitudes in order for his mass movement to find a foothold in the United States.

(C) The prevailing sensibility of the African American community provided the foundation of Marcus Garvey's political appeal.

(D) Marcus Garvey hoped to revitalize consciousness of cultural and historical identity in the African American community.

(E) The goal of the mass movement that Marcus Garvey helped bring into being was to build on the pride and unity among African Americans.

Inference

To determine what it is logical to infer regarding the scholars discussed in the third paragraph, look at the context in which they are mentioned. According to the passage, these scholars argue that Garvey was responsible for creating a particular consciousness within the African American community, a consciousness that the passage identifies as *identity, strength, and* [a] *sense of history.* Unlike the passage author, these scholars believe strongly in Garvey's responsibility for this consciousness, so they would most likely reject any suggestion that it existed prior to his arrival and activism.

A According to the passage, the scholars believe that Garvey was responsible for the creation of the consciousness that led to revitalization, which suggests that revitalization resulted from Garvey's activism, not soldiers' activism.

B **Correct.** According to the passage, the scholars believe that Garvey created the consciousness that led to his revitalization movement. This suggests that he had to change prevailing attitudes in order to foster this new consciousness.

C According to the passage, the scholars believe that Garvey created a new consciousness in the African American community; thus, the prevailing sensibility could not have provided a foundation for his appeal.

D According to the passage, the scholars believe that Garvey built his revitalization movement on a new consciousness of cultural and historical identity, not a previously existing one.

E According to the passage, the scholars' position is that Garvey's movement was built on a new sense of pride and unity that he provided, and that that sense did not precede Garvey's work.

The correct answer is B.

438. According to the passage, many African American people joined the armed forces during the First World War for which of the following reasons?

(A) They wished to escape worsening economic conditions in African American communities.
(B) They expected to fulfill ideals of personal attainment.
(C) They sought to express their loyalty to the United States.
(D) They hoped that joining the military would help advance the cause of desegregation.
(E) They saw military service as an opportunity to fulfill Marcus Garvey's political vision.

Supporting idea

This question depends on identifying what the passage states directly about African American people's reasons for joining the armed forces. The reason offered by the passage is that the African American people who entered the armed forces did so because they were *hoping to participate in the traditional American ethos of individual success*.

A Although this is a plausible reason for entering the armed forces, the passage does not discuss economic conditions.
B **Correct.** The passage states that African American people who joined the armed forces during the First World War wanted to achieve individual success.
C The passage does not discuss African American people's loyalty to the United States.
D The passage states that African American troops experienced segregation, but it does not suggest that they had hoped their joining the military would promote desegregation.
E The passage suggests that African American troops did not become aware of Marcus Garvey's political vision until after they returned from the First World War.

The correct answer is B.

Questions 439–441 refer to the passage on page 380.

439. The primary purpose of the passage is to

(A) compare the adaptive responses of several species of columnar cacti in the Sonoran Desert with those in the arid tropical regions of southern Mexico
(B) discuss some of the possible causes of the relatively low abundance of migratory nectar-feeding bats in the Sonoran Desert
(C) provide a possible explanation for a particular evolutionary change in certain species of columnar cacti in the Sonoran Desert
(D) present recent findings that challenge a particular theory as to why several species of columnar cacti in the Sonoran Desert have expanded their range of pollinators
(E) compare the effectiveness of nocturnal and diurnal pollination for several different species of columnar cacti in the Sonoran Desert

Main idea

This question depends on understanding the passage as a whole. The first paragraph discusses an evolutionary change undergone by columnar cacti in the Sonoran Desert with regard to pollination. The second paragraph offers a possible reason for this change—migratory nectar-feeding bats are unreliable pollinators—and the third paragraph goes on to provide evidence that supports the reason given in the second paragraph.

A The passage does compare the adaptations of cacti in the Sonoran Desert with those of cacti in southern Mexico, but it does so in support of a larger point about the Sonoran Desert cacti.
B The relatively low abundance of migratory nectar-feeding bats in the Sonoran Desert is important to the passage in that it provides a reason why the columnar cacti in that region have made certain adaptations. But the passage does not explain why the bats are not particularly abundant.

C **Correct.** The flowers of the columnar cacti in the Sonoran Desert have evolved to remain open after sunrise, and the passage is primarily concerned with explaining why this change may have taken place.

D The passage presents recent findings that support, rather than challenge, a theory as to why the columnar cacti of the Sonoran Desert have expanded their range of pollinators. The passage does not allude to any competing theory that may be challenged by the findings.

E Any comparison of the effectiveness of nocturnal and diurnal pollination for columnar cacti in the Sonoran Desert is made in support of the passage's primary concern: explaining why these cacti have come to remain open and receptive to pollination in daylight.

The correct answer is C.

440. According to the passage, which of the following types of nectar-feeding pollinators is likely to be an unreliable pollinator of a particular cactus flower?

(A) A dietary specialist whose abundance is typically high in relation to that of the flower

(B) A dietary specialist whose abundance is at times significantly lower than that of the flower

(C) A dietary generalist for whom that flower's nectar is not a preferred food but is the most consistently available food

(D) A dietary generalist for whom that flower's nectar is slightly preferred to other available foods

(E) A dietary generalist that evolved from a species of dietary specialists

Supporting idea

This question depends on recognizing the qualities of an unreliable pollinator, as described in the passage. The second paragraph addresses this issue: it explains that the unreliability of pollinators can arise in any of three ways: they may be dietary generalists with alternative sources of food; they may be dietary specialists whose own abundance varies; or they may be dietary specialists whose abundance is chronically low in relation to the flowers.

A A dietary specialist whose abundance is high in relation to the flowers on which it feeds would likely be a reliable pollinator.

B **Correct.** A dietary specialist whose abundance is at times significantly lower than that of the flower it pollinates would be, according to the passage, unreliable.

C A dietary generalist who finds the flower of a particular species more consistently available than other suitable food sources would most likely be a reliable pollinator of that flower.

D A dietary generalist who prefers the flower's nectar would likely be a reliable pollinator of that flower compared to other flowers.

E The passage provides no reason to believe that the evolution of a pollinator's dietary preference has any bearing on its reliability as a pollinator.

The correct answer is B.

441. According to the passage, present-day columnar cacti in the Sonoran Desert differ from their close relatives in southern Mexico in that the Sonoran cacti

(A) have flowers that remain open after sunset

(B) are pollinated primarily by dietary specialists

(C) can be pollinated by nectar-feeding bats

(D) have stigmas that are unreceptive to pollination at night

(E) are sometimes pollinated by diurnal pollinators

Supporting idea

This question depends on identifying a difference noted in the passage between columnar cacti in the Sonoran Desert and their relatives in southern Mexico. The first paragraph states that in southern Mexico, columnar cactus flowers are not receptive to pollination by diurnal pollinators, whereas in the Sonoran Desert, the flowers have evolved to allow diurnal pollination.

A The cacti in both the Sonoran Desert and southern Mexico have flowers that remain open after sunset, because cacti in both locations can be pollinated nocturnally.

B Sonoran Desert cacti are pollinated, at least partially, by nectar-feeding bats, which are dietary specialists. But the cacti in southern Mexico are pollinated by these specialists, too.

C Sonoran Desert cacti can be pollinated by nectar-feeding bats—but so can cacti in southern Mexico.

D Cacti in the Sonoran Desert have stigmas that have evolved to be receptive to pollination both at night and during the day.

E **Correct.** The distinction between cacti in the Sonoran Desert and those in southern Mexico is that Sonoran Desert cacti have evolved to allow pollination during the day—that is, pollination by diurnal pollinators.

The correct answer is E.

Questions 442–449 refer to the passage on page 382.

442. The passage provides information in support of which of the following assertions?

(A) The disadvantages of an adaptation to a particular feature of an environment often outweigh the advantages of such an adaptation.

(B) An organism's reaction to being placed in an environment to which it is not well adapted can sometimes illustrate the problems that have been solved by the adaptations of organisms indigenous to that environment.

(C) The effectiveness of an organism's adaptation to a particular feature of its environment can only be evaluated by examining the effectiveness with which organisms of other species have adapted to a similar feature of a different environment.

(D) Organisms of the same species that inhabit strikingly different environments will often adapt in remarkably similar ways to the few features of those environments that are common.

(E) Different species of organisms living in the same environment will seldom adapt to features of that environment in the same way.

Application

This question requires recognizing a principle underlying the passage's overall discussion. The passage makes a general claim about terrestrial animals' need to overcome the effect of gravity on their blood circulation systems, and it then uses the specific example of terrestrial snakes to illustrate this claim. To help identify the adaptations used by terrestrial snakes, the passage describes what happens to sea snakes, which are aquatic and less affected by gravity's influence, when they are subjected to a terrestrial environment. The specific problems faced by these snakes strongly suggest that terrestrial snakes have developed ways to overcome these problems. The passage then identifies specific physiological differences between sea snakes and terrestrial snakes that demonstrate how terrestrial snakes overcome gravity's influence.

A The passage discusses how species have successfully adapted to their specific environments and does not mention that these adaptations create disadvantages in that environment.

B **Correct.** The passage discusses the problems faced by sea snakes when they are subjected to a terrestrial environment and then examines terrestrial snakes to illustrate how certain adaptations solved these problems.

C The passage is not concerned with evaluating the effectiveness of species' adaptations to their environments; it takes for granted that these adaptations are effective.

D The passage is concerned with how species adapt differently to different environments and not with how adaptations to different environments are similar.

E The passage discusses how different environments affect how species have adapted, not how different species adapt to a similar environment.

The correct answer is B.

443. According to the passage, one reason that the distribution of blood in the sea snake changes little while the creature remains in the ocean is that

(A) the heart of the sea snake tends to be located near the center of its body

(B) pressure gradients in the water surrounding the sea snake counter the effects of vertical pressure gradients within its blood vessels

(C) the sea snake assumes a vertical posture less frequently than do the terrestrial and the arboreal snake

(D) the sea snake often relies on waves of muscle contractions to help move blood from the torso to the head

(E) the force of pressure gradients in the water surrounding the sea snake exceeds that of vertical pressure gradients within its circulatory system

Supporting ideas

This question asks for an identification of factual information in the passage. Given that the contrast between sea snakes and terrestrial snakes is being used to identify adaptations used by terrestrial animals to overcome the effect of gravity on their circulation systems, the passage needs initially to illustrate why it is that sea snakes are not confronted with the same problems that gravity causes for terrestrial snakes. This information therefore needs to come fairly early in the passage.

A The passage identifies the location of a sea snake's heart as a factor that minimizes the effort required to pump blood to both extremities but not as a cause of the even distribution of blood in sea snakes.

B **Correct.** The passage states explicitly in lines 11–17 that while sea snakes are in the ocean, the vertical pressure gradients in their blood vessels are counteracted by the pressure gradients in the water.

C The passage does not discuss the frequency with which any snakes assume certain postures.

D The passage discusses muscle contractions only in relation to arboreal snakes.

E The passage states that the vertical pressures within sea snakes' blood vessels are *counteracted* (line 13) by the water's pressure, which suggests that the pressures are equalized, not that one force exceeds the other.

The correct answer is B.

444. It can be inferred from the passage that which of the following is true of species of terrestrial snakes that often need to assume a vertical posture?

(A) They are more likely to be susceptible to circulatory failure in vertical postures than are sea snakes.

(B) Their hearts are less likely to be located at the midpoint of their bodies than is the case with sea snakes.

(C) They cannot counteract the pooling of blood in lower regions of their bodies as effectively as sea snakes can.

(D) The blood pressure at their midpoint decreases significantly when they are tilted with their heads up.

(E) They are unable to rely on muscle contractions to move venous blood from the lower torso to the head.

Inference

This question requires using information given about how arboreal snakes, which are frequently in vertical postures, have adapted to gravity's influence to make an assumption that other terrestrial snakes that are frequently in these postures are likely to have similar adaptations. The passage implies that sea snakes have hearts at the midpoint of their bodies because the water's pressure gradients help distribute blood evenly. It then illustrates that arboreal snakes have hearts closer to their heads to help keep blood flowing to their brains when they are in vertical postures.

A The passage does not suggest that any of the snakes mentioned are ill-adapted to their particular environments.

B Correct. The passage states that arboreal snakes have hearts close to their heads and not at the midpoints of their bodies, so it is reasonable to conclude that any terrestrial snake that frequently assumes vertical postures would be unlikely to have hearts at their bodies' midpoint.

C As with answer choice (A), the passage does not suggest that any species of snake is ill-adapted to its environment.

D The passage states that sea snakes lose pressure at their midpoints when they are tilted on land with heads up but that terrestrial snakes do not have this problem.

E Because arboreal snakes use muscle contractions to circulate blood when they are vertical, it is likely that most terrestrial snakes that frequently assume vertical postures also have this capability.

The correct answer is B.

445. The author describes the behavior of the circulatory system of sea snakes when they are removed from the ocean (see lines 17–20) primarily in order to

(A) illustrate what would occur in the circulatory system of terrestrial snakes without adaptations that enable them to regulate their blood pressure in vertical orientations

(B) explain why arboreal snakes in vertical orientations must rely on muscle contractions to restore blood pressure to the brain

(C) illustrate the effects of circulatory failure on the behavior of arboreal snakes

(D) illustrate the superiority of the circulatory system of the terrestrial snake to that of the sea snake

(E) explain how changes in spatial orientation can adversely affect the circulatory system of snakes with hearts located in relatively close proximity to their heads

Evaluation

Answering this question requires understanding why sea snakes have been brought into the passage's overall discussion about how terrestrial animals have overcome the influence of gravity on their blood circulation. The passage uses the effects that gravity has on sea snakes when they are taken out of water to identify problems that terrestrial snakes must have adapted to in order to survive.

A Correct. The passage uses the problems sea snakes have when taken out of water to illustrate that without certain adaptations, terrestrial snakes would likely have similar problems.

B The passage discusses sea snakes to illustrate problems faced by terrestrial snakes, not to explain how terrestrial snakes have adapted to gravity's influence.

C The passage does not discuss the effects of circulatory failure on arboreal snakes.

D The passage does not compare or contrast the effectiveness of the various adaptations used by different snakes.

E The passage does not imply that snakes with hearts close to their heads are adversely affected by spatial positions.

The correct answer is A.

446. It can be inferred from the passage that which of the following is a true statement about sea snakes?

(A) They frequently rely on waves of muscle contractions from the lower torso to the head to supplement the work of the heart.

(B) They cannot effectively regulate their blood pressure when placed in seawater and tilted at an angle with the head pointed downward.

(C) They are more likely to have a heart located in close proximity to their heads than are arboreal snakes.

(D) They become acutely vulnerable to the effects of gravitational pressure on their circulatory system when they are placed in a terrestrial environment.

(E) Their cardiovascular system is not as complicated as that of arboreal snakes.

Inference

Answering this question requires understanding why sea snakes are discussed in the passage and what happens to them when they are taken out of water and subjected to the force of gravity. The second paragraph implies strongly that sea snakes will not survive certain terrestrial situations for which they are not adapted.

A The passage associates muscle contractions to circulate blood with arboreal snakes only.
B According to the passage, sea snakes' inability to regulate blood pressure occurs only when they are taken out of water.
C The passage states clearly that arboreal snakes have hearts closer to their heads than do sea snakes.
D **Correct.** The passage states that in certain postures, sea snakes placed in a terrestrial environment will lose all blood pressure at their brains, which is an acute vulnerability.
E The passage does not provide the information needed to compare the complexity of the various snakes discussed.

The correct answer is D.

447. The author suggests that which of the following is a disadvantage that results from the location of a snake's heart in close proximity to its head?

(A) A decrease in the efficiency with which the snake regulates the flow of blood to the brain
(B) A decrease in the number of orientations in space that a snake can assume without loss of blood flow to the brain
(C) A decrease in blood pressure at the snake's midpoint when it is tilted at various angles with its head up
(D) An increase in the tendency of blood to pool at the snake's head when the snake is tilted at various angles with its head down
(E) An increase in the amount of effort required to distribute blood to and from the snake's tail

Inference

This question asks for an inference about the location of a snake's heart being closer to the brain than to the midpoint of its body. In the third paragraph, the passage states that in terrestrial snakes, which must fight the influence of gravity, the closer proximity of the heart to the head ensures blood circulation to the brain. The passage notes, however, that this makes it more difficult for such snakes to maintain blood circulation to the tail.

A The passage states that snakes have hearts closer to their heads to more efficiently circulate blood to the brain.
B The passage suggests that having the heart close to the head increases the spatial orientations a snake can assume without losing blood flow to the brain, rather than decreases the number of orientations.
C The passage indicates that this is true only of sea snakes with hearts near their body's midpoint.
D The passage mentions blood pooling in the lower portions of a terrestrial organism's body but does not imply that blood can pool at a snake's head.
E **Correct.** Because, as the passage states, it is more difficult for a snake with its heart close to its head to circulate blood to the tail, and therefore its body is likely to put more effort into circulating blood to the tail.

The correct answer is E.

448. The primary purpose of the third paragraph is to

(A) introduce a topic that is not discussed earlier in the passage
(B) describe a more efficient method of achieving an effect discussed in the previous paragraph
(C) draw a conclusion based on information elaborated in the previous paragraph
(D) discuss two specific examples of phenomena mentioned at the end of the previous paragraph
(E) introduce evidence that undermines a view reported earlier in the passage

Evaluation

Answering this question requires recognizing how the passage develops its main point. The first paragraph sets up a general claim about gravity's influence on terrestrial organisms. The second paragraph then describes the ill effects that gravity has on sea snakes to identify problems that terrestrial snakes have had to adapt to. The third paragraph then uses examples to illustrate how terrestrial snakes have adapted to gravity's influence.

A The topic of the third paragraph is the adaptations developed by terrestrial snakes to survive gravity's influence, which is part of the discussion in both the first and second paragraphs.

B There is no comparison in the passage of the efficiency of the different methods used by snakes to adapt to gravity's influence.

C The third paragraph is concerned with illustrating certain adaptations used by snakes and offers no conclusions about the problems terrestrial snakes have had to adapt to, which is the topic of the second paragraph.

D **Correct.** The end of the second paragraph refers to *certain adaptations* (line 23) that the third paragraph then goes on to identify and discuss.

E The third paragraph supports the main idea of the passage and is not used to counter any claim made earlier.

The correct answer is D.

449. In the passage, the author is primarily concerned with doing which of the following?

(A) Explaining adaptations that enable the terrestrial snake to cope with the effects of gravitational pressure on its circulatory system

(B) Comparing the circulatory system of the sea snake with that of the terrestrial snake

(C) Explaining why the circulatory system of the terrestrial snake is different from that of the sea snake

(D) Pointing out features of the terrestrial snake's cardiovascular system that make it superior to that of the sea snake

(E) Explaining how the sea snake is able to neutralize the effects of gravitational pressure on its circulatory system

Main idea

Answering this question involves assessing what the passage as a whole is attempting to do. While the passage begins by making a general claim about gravity's influence on the cardiovascular systems of terrestrial animals, it immediately points to terrestrial snakes as a good example supporting this claim. The rest of the passage is then devoted to illustrating, using the observations involving sea snakes, how gravity's influence has shaped the cardiovascular systems of terrestrial snakes.

A **Correct.** The entire passage is devoted to an explanation of how terrestrial snakes have adapted to gravity's influence.

B While the passage does compare the systems of the two snakes, it does so for the larger purpose of demonstrating gravity's influence on terrestrial snakes.

C The passage is more concerned with *how* the systems of the two snakes are different, rather than *why*, in order to identify how terrestrial snakes have adapted to gravity's influence.

D There is no judgment in the passage as to the superiority of one snake's system over the other.

E While the passage does explain how sea snakes do this, it does so only for the larger purpose of identifying how terrestrial snakes have adapted to gravity's influence.

The correct answer is A.

Questions 450–455 refer to the passage on page 386.

450. The passage is primarily concerned with

(A) contrasting the benefits of one methodology with the benefits of another

(B) describing the historical origins and inherent drawbacks of a particular methodology

(C) discussing the appeal of a particular methodology and some concerns about its use

(D) showing that some historians' adoption of a particular methodology has led to criticism of recent historical scholarship

(E) analyzing the influence of current feminist views on women's interpretations of their experience

Main idea

This question asks for an abstract view of what the passage as a whole is primarily doing. The passage introduces a particular methodology that scholars of women's history have been encouraged to employ, explaining why the use of the methodology is supported. The passage then goes on to raise some concerns about the use of the methodology and cites one example in which caution is needed.

A The passage is primarily concerned with only one methodology.
B The passage mentions why the methodology had been encouraged but does not give the history of its origins; while it cautions historians to employ the methodology carefully, it is not concerned with drawbacks of its proper use.
C **Correct.** The passage discusses why the use of a methodology is being encouraged and then offers some concerns about its use.
D The passage does not discuss any criticism of recent scholarship in women's history.
E There is no mention in the passage that feminist theory is influencing how women in general think about their experiences.

The correct answer is C.

451. According to the passage, which of the following shapes the oral narratives of women storytellers?

(A) The conventions for standard histories in the culture in which a woman storyteller lives
(B) The conventions of storytelling in the culture in which a woman storyteller lives
(C) A woman storyteller's experience with distinctive traditions of storytelling developed by the women in her family of origin
(D) The cultural expectations and experiences of those who listen to oral narratives
(E) A woman storyteller's familiarity with the stories that members of other groups in her culture tell to explain themselves

Supporting ideas

This question asks for an identification of specific information provided by the passage. In the second paragraph, the passage describes certain concerns about using oral narratives. One of these concerns is that *the stories people tell to explain themselves are shaped by . . . storytelling conventions* (lines 17–19) and other influences tied to the teller's cultural and historical context.

A The passage uses *standard histories* (line 7) to refer to the usual work of scholars and not to something that influences oral narratives.
B **Correct.** The passage raises as a concern that oral narratives may be influenced by storytelling conventions present in the culture of the speaker.
C The passage does not mention the family of origin of women storytellers.
D The passage does not mention the expectations of the listeners of oral narratives.
E The passage does not discuss women storytellers' familiarity with the oral narratives belonging to other groups of women.

The correct answer is B.

452. The author of the passage would be most likely to make which of the following recommendations to scholars of women's history?

(A) They should take into account their own life experiences when interpreting the oral accounts of women's historical experiences.
(B) They should assume that the observations made in women's oral narratives are believed by the intended audience of the story.
(C) They should treat skeptically observations reported in oral narratives unless the observations can be confirmed in standard histories.
(D) They should consider the cultural and historical context in which an oral narrative was created before arriving at an interpretation of such a narrative.
(E) They should rely on information gathered from oral narratives only when equivalent information is not available in standard histories.

Application

Answering this question involves recognizing what the author believes about oral narratives and then applying this belief to a hypothetical situation in which the author makes recommendations to scholars of women's history. While acknowledging the appeal of oral narratives to these scholars, in the second paragraph the author urges caution when using these narratives as sources of *disinterested commentary* (line 16). The passage then states that people's oral narratives are shaped by *cultural and historical factors* (line 20), which presumably relate to the cultural and historical context within which the narratives are spoken.

A The passage does not mention the personal life experiences of scholars.

B The passage does not mention the intended audiences of oral narratives.

C The passage mentions *standard histories* (line 7) only as a reference to scholarly works that often have shortcomings.

D Correct. The passage cautions that oral narratives may be biased due to cultural and historical factors, and it is therefore reasonable to suppose that the author would recommend that scholars consider this when using such information.

E The passage does not refer to oral narratives as being valuable only for filling a gap in the available historical record.

The correct answer is D.

453. Which of the following best describes the function of the last sentence of the passage?

(A) It describes an event that historians view as crucial in recent women's history.

(B) It provides an example of how political rhetoric may influence the interpretations of experience reported in women's oral narratives.

(C) It provides an example of an oral narrative that inaccurately describes women's experience during a particular historical period.

(D) It illustrates the point that some women are more aware than others of the social forces that shape their oral narratives.

(E) It identifies the historical conditions that led to the social acceptance of women's paid work outside the home.

Evaluation

This question requires recognizing how a particular part of the passage is related to the overall reasoning in the passage. The first paragraph introduces a methodology and describes the methodology's appeal. The second paragraph then raises concerns about the use of the methodology, drawing attention to the cultural and historical bias that may be present in oral narratives. In line 21, the passage refers specifically to the influence *political rhetoric* may have on a woman's understanding of her experience. In the final sentence, the passage provides a specific hypothetical example of a woman at the time of the Second World War to illustrate this concern.

A The last sentence employs a hypothetical example and does not describe a particular event as being important to historians.

B Correct. After contending that political rhetoric may influence oral narratives, the passage uses the example of the Second World War in the final sentence to support this claim.

C The last sentence does not provide a particular example of an oral narrative.

D The passage does not claim that some women are more aware than others of the social forces that may bear on them.

E The passage does not claim that social conditions during the Second World War led to acceptance of women in the workplace.

The correct answer is B.

454. According to the passage, scholars of women's history should refrain from doing which of the following?

(A) Relying on traditional historical sources when women's oral narratives are unavailable
(B) Focusing on the influence of political rhetoric on women's perceptions to the exclusion of other equally important factors
(C) Attempting to discover the cultural and historical factors that influence the stories women tell
(D) Assuming that the conventions of women's written autobiographies are similar to the conventions of women's oral narratives
(E) Accepting women's oral narratives less critically than they accept women's written histories

Inference

Answering this question requires recognizing which option is directly inferable from information in the passage. After describing in the first paragraph why oral narratives are appealing to historians, the passage begins the second paragraph by imploring scholars of women's history to *be as cautious about accepting oral narratives … as … written memories* (lines 12–14). The passage then goes on to describe potential bias in oral narratives, suggesting that scholars should be as critical of them as they are of written sources.

A The passage does not claim that traditional historical sources should be avoided by scholars.
B The passage mentions the influence of political rhetoric merely as one example of potential bias.
C The passage suggests that scholars *should* attempt to be aware of cultural and historical factors.
D The passage does not discuss the conventions of women's written autobiographies.
E **Correct.** The passage implies that written histories and oral narratives should receive the same level of critical scrutiny by scholars.

The correct answer is E.

455. According to the passage, each of the following is a difference between women's oral narratives and most standard histories EXCEPT:

(A) Women's oral histories validate the significance of women's achievements.
(B) Women's oral histories depict experience from the point of view of women.
(C) Women's oral histories acknowledge the influence of well-known women.
(D) Women's oral histories present today's women with a sense of their historical relationship to women of the past.
(E) Women's oral histories are crucial to the collective identity of today's women.

Supporting ideas

This question asks for information that is stated in the passage, and it requires a process of elimination. In line 7, oral narratives are presented as being *unlike most standard histories*, and the passage then goes on in lines 7–11 to list characteristics of oral histories that most standard histories do not have. The answer to this question will therefore contain a characteristic of women's oral histories that is not described in lines 7–11.

A The passage states that, unlike most standard histories, women's oral histories *affirm the importance of women's contributions* (lines 8–9).
B The passage states that, unlike most standard histories, women's oral histories *represent experience from the perspective of women* (lines 7–8).
C **Correct.** The passage does not mention the influence of well-known women on women's oral histories.
D The passage states that, unlike most standard histories, women's oral histories *furnish present-day women with historical continuity* (lines 9–10).
E The passage states that, unlike most standard histories, women's oral histories furnish a historical sense that is *essential to their identity, individually and collectively* (line 11).

The correct answer is C.

Questions 456–460 refer to the passage on page 388.

456. The passage suggests that in order for a manufacturer in a capital-intensive industry to have a decisive advantage over competitors making similar products, the manufacturer must

(A) be the first in the industry to build production facilities of theoretically optimal size
(B) make every effort to keep fixed and sunk costs as low as possible
(C) be one of the first to operate its manufacturing plants at minimum efficient scale
(D) produce goods of higher quality than those produced by direct competitors
(E) stockpile raw materials at production sites in order to ensure a steady flow of such materials

Inference

This question asks for an inference about what a manufacturer in a capital-intensive industry must do to have an advantage over competitors making similar products. The passage addresses this question by stating that advantage accrues to those firms that are the first to exploit the full potential of optimally sized, technologically sophisticated plants. In this context, exploiting the full potential of such plants means operating them at *minimum efficient scale*. Based on the definition in the first paragraph, this means that the plant must have an output of such a size that the cost per unit of output is at a minimum.

A The passage says that for new capital-intensive firms to dominate the market, it is not enough for them to have optimally sized plants; the plants must also be operated in a way that fully exploits their potential.

B While keeping fixed and sunk costs low would obviously help keep overall costs low, the passage does not suggest that this is decisive in enabling a firm to have an advantage over competitors.

C **Correct.** Being among the first manufacturers to operate plants at minimum efficient scale means that those plants are being exploited to their full potential. This strategy would most likely give such manufacturers a decisive advantage over new firms hoping to compete effectively.

D The passage does not discuss the quality of goods made by manufacturers.

E The passage does not suggest that stockpiling raw materials is the most efficient way to ensure a steady flow of raw materials into the manufacturing process, though the passage states that such a steady flow is a factor in achieving minimum efficient scale.

The correct answer is C.

457. The passage suggests that which of the following is true of a manufacturer's fixed and sunk costs?

(A) The extent to which they are determined by market conditions for the goods being manufactured is frequently underestimated.
(B) If they are kept as low as possible, the manufacturer is very likely to realize significant profits.
(C) They are the primary factor that determines whether a manufacturer will realize economies of scale.
(D) They should be on a par with the fixed and sunk costs of the manufacturer's competitors.
(E) They are not affected by fluctuations in a manufacturing plant's throughput.

Inference

This question asks about what the passage implies about fixed and sunk costs. The passage states that when production declines due to certain factors, such costs remain at the same level (which may be high), and the cost per unit produced (*unit costs*) rises sharply.

A The passage discusses the impact of market conditions on determining what the optimal size of a manufacturing plant is (which affects fixed and sunk costs). But it makes no claim about the frequency with which such an impact is "underestimated."

B The passage emphasizes that failing to keep throughput at an efficiently high level reduces profitability because that failure results in increased cost per unit (to which, of course, the plant's fixed and sunk costs contribute). But the passage does not claim that keeping aggregate fixed and sunk costs very low is necessary in order to have the most competitive production operation.

C The passage emphasizes that the crucial factor in achieving economies of scale is efficient operation of the production facilities, not the size of the firm's fixed and sunk costs (even though such costs are clearly in part determined by the size and design of the production facilities).

D While a manufacturer's fixed and sunk costs may be on a par with those of the manufacturer's competitors, the passage provides no grounds for inferring that there is any need for them to be (for example, physical plants that employ different technologies may have different price tags).

E **Correct.** According to the passage, "throughput" refers to the flow of materials through a plant. This flow can vary as a result of various factors, but fixed and sunk costs—financial resources already committed—remain the same regardless of such variation.

The correct answer is E.

458. In the context of the passage as a whole, the second paragraph serves primarily to

(A) provide an example to support the argument presented in the first paragraph

(B) evaluate various strategies discussed in the first paragraph

(C) introduce evidence that undermines the argument presented in the first paragraph

(D) anticipate possible objections to the argument presented in the first paragraph

(E) demonstrate the potential dangers of a commonly used strategy

Evaluation

This question asks about the rhetorical function of the second paragraph. While the first paragraph argues that a crucial factor in achieving economies of scale is intangible capital, or organized human capabilities, the second paragraph uses the example of new capital-intensive manufacturing industries to help show that this is indeed the case.

A **Correct.** The second paragraph provides an example that illustrates the claims made in the first paragraph. It discusses the way in which intangible capital—e.g., distribution networks, marketing systems, smooth production processes, and qualified management teams—enables manufacturers in new capital-intensive manufacturing industries to realize economies of scale and achieve market dominance.

B The second paragraph does, in a sense, "evaluate" investment in intangible capital: it suggests that such investment is necessary. However, investment in intangible capital is the only strategy it discusses.

C The second paragraph supports rather than undermines the first paragraph's argument.

D Nothing in the second paragraph suggests that there are, or could be, any objections to the first paragraph's argument.

E The second paragraph discusses the potential positive outcomes of investing in intangible capital. It suggests that there might be negative consequences to not making such investments, but it does not indicate that avoiding such investments is a commonly used strategy.

The correct answer is A.

459. The passage LEAST supports the inference that a manufacturer's throughput could be adversely affected by

(A) a mistake in judgment regarding the selection of a wholesaler

(B) a breakdown in the factory's machinery

(C) a labor dispute on the factory floor

(D) an increase in the cost per unit of output

(E) a drop in the efficiency of the sales network

Application

This question may be best approached by using an elimination strategy—first finding the four choices that can reasonably be inferred from the passage, and then checking to make sure that the remaining choice cannot reasonably be inferred. This requires understanding the information the passage gives about throughput, then making inferences about what can cause throughput to drop. The passage defines throughput generally as *the flow of materials through a plant* and goes on to explain that it involves coordination of the production process itself, as well as obtaining materials from suppliers and marketing and distributing the manufactured products. Anything that damages this flow of materials and products would be said to have an adverse effect on throughput.

A Making a poor judgment about a wholesaler would most likely have an adverse effect on throughput, in that it could affect *the flow of output to wholesalers and final consumers*.

B A breakdown in machinery would likely fall into the category of *problems on the factory floor* mentioned in the passage and would likely prove damaging to throughput because of its effect on the production process itself.

C A labor dispute would also likely fall into the category of *problems on the factory floor* mentioned in the passage and would probably cause a decline in production and thus adversely affect throughput.

D **Correct.** The passage emphasizes that changes in throughput can cause increases or decreases in costs per unit. But the passage is not committed to any claims about how changes in costs per unit might affect throughput.

E The passage suggests that inefficient sales networks could cause a decline in production. Thus a decrease in sales efficiency would most likely adversely affect a manufacturer's ability to provide goods to consumers, and thus would create problems with throughput.

The correct answer is D.

460. The primary purpose of the passage is to

(A) point out the importance of intangible capital for realizing economies of scale in manufacturing

(B) show that manufacturers frequently gain a competitive advantage from investment in large manufacturing facilities

(C) argue that large manufacturing facilities often fail because of inadequate investment in both tangible and intangible capital

(D) suggest that most new industries are likely to be dominated by firms that build large manufacturing plants early

(E) explain why large manufacturing plants usually do not help manufacturers achieve economies of scale

Main idea

This question depends on understanding the passage as a whole. In general, it makes an argument for investing in intangible capital as a way for manufacturers to realize economies of scale, and it supports its argument with an example.

A **Correct.** The passage focuses on intangible capital as a crucial factor in realizing economies of scale.

B According to the passage, manufacturers gain competitive advantage by building plants of optimal size that they then fully exploit; nothing in the passage suggests that large plants are frequently optimal.

C The passage assumes that manufacturers invest appropriately in tangible capital and argues that it is important for them to invest in intangible capital as well.

D The passage states that new capital-intensive manufacturing industries are dominated not by firms that are the first to build large plants, but by firms that exploit the full potential of their plants.

E The passage indicates that economies of scale can be achieved in plants of optimal size. The passage does not suggest that large plants cannot be optimal.

The correct answer is A.

Questions 461–466 refer to the passage on page 390.

461. The primary purpose of the passage is to

(A) describe the development of new techniques that may help to determine the driving force behind population cycles in lepidoptera
(B) present evidence that refutes a particular theory about the driving force behind population cycles in lepidoptera
(C) present a hypothesis about the driving force behind population cycles in lepidoptera
(D) describe the fluctuating patterns of population cycles in lepidoptera
(E) question the idea that a single driving force is behind population cycles in lepidoptera

Main idea

This question depends on understanding the passage as a whole in order to identify its purpose. The first paragraph defines population cycles of lepidoptera and discusses some ways those cycles have been studied. It suggests that a particular agent may regulate these cycles. The second paragraph describes a candidate for this agent: nuclear polyhedrosis viruses. The third paragraph explains why this hypothesis is compelling.

A The passage mentions new techniques in molecular biology, but it does so in order to explain why a particular candidate for the agent behind population cycles has come to light.

B The theory the passage presents is that there is a driving force behind lepidoptera population cycles. It does not refute this theory; rather, it offers a convincing case for nuclear polyhedrosis viruses as that force. It also discusses some previous approaches to seeking plausible hypotheses but does not focus on refuting any particular hypothesis.

C Correct. The passage is primarily concerned with presenting the hypothesis that nuclear polyhedrosis viruses are the driving force behind lepidoptera population cycles.

D The first paragraph describes the fluctuating patterns of lepidoptera population cycles, but it does so to explain what population cycles are, so that it can then go on to attempt to account for those cycles.

E The passage is concerned with making a case for nuclear polyhedrosis viruses as the driving force behind at least some lepidoptera population cycles, not with questioning the idea that there is a driving force.

The correct answer is C.

462. It can be inferred from the passage that the mortality caused by agents such as predatory birds or parasites was measured in an attempt to

(A) develop an explanation for the existence of lepidoptera population cycles
(B) identify behavioral factors in lepidoptera that affect survival rates
(C) identify possible methods for controlling lepidoptera population growth
(D) provide evidence that lepidoptera populations are self-regulating
(E) determine the life stages of lepidoptera at which mortality rates are highest

Inference

The passage states that mortality caused by various agents, birds and parasites among them, was measured because this was the common approach to studying causes of population cycles. This in turn suggests that those scientists engaged in such measuring in the case of lepidoptera were attempting to come up with a definitive explanation for why those lepidoptera population cycles occurred.

A Correct. Measuring mortality caused by various agents was part of the attempt to determine the driving force behind lepidoptera population cycles.

B The passage does not indicate that behavioral factors in lepidoptera are related to their mortality as caused by agents such as predatory birds or parasites.

C The passage is concerned not with controlling lepidoptera population growth, but rather with determining why population cycles occur.

D According to the information in the passage, scientists sought to measure mortality caused by particular agents in order to determine the driving force behind lepidoptera population cycles. In suggesting that mortality caused by these agents is not that force, the measurements may have indicated that the cycles could be self-regulating, but they were not undertaken in order to provide such evidence.

E The passage discusses mortality primarily in the caterpillar stage and does not suggest that any research was directed toward comparing caterpillar mortality rates with mortality rates in other life stages of the insects.

The correct answer is A.

463. Which of the following, if true, would most weaken the author's conclusion in lines 18–22 ?

(A) New research reveals that the number of species of birds and parasites that prey on lepidoptera has dropped significantly in recent years.

(B) New experiments in which the habitats of lepidoptera are altered in previously untried ways result in the shortening of lepidoptera population cycles.

(C) Recent experiments have revealed that the nuclear polyhedrosis virus is present in a number of predators and parasites of lepidoptera.

(D) Differences among the habitats of lepidoptera species make it difficult to assess the effects of weather on lepidoptera population cycles.

(E) Viral disease is typically observed in a large proportion of the lepidoptera population.

Evaluation

The sentence in question presents the author's conclusion that lepidoptera populations may be self-regulating or regulated by something more closely connected to the insects than predatory birds or parasites are. To weaken that conclusion requires weakening its support, namely, that mortality caused by predators and parasites seems not to affect population cycles, and that changing habitats and reducing populations has not altered population cycles either.

A A drop in birds and parasites preying on lepidoptera would not weaken the author's conclusion; mortality caused by these predators has not affected population cycles.

B **Correct.** New experiments involving changes in habitat that did succeed in altering population cycles would suggest that the populations are not in fact self-regulating, and that the search for another cycle-altering agent may be unnecessary.

C This finding would support the idea that the nuclear polyhedrosis virus is responsible for population cycles—that is, that the virus is the closely connected agent the author concludes is responsible.

D The suggestion that the effects of weather may not have been adequately assessed is remotely relevant to the author's conclusion, but the mere difficulty of assessing the effects provides no positive reason to suppose that weather may be the cause of the cycles. On the other hand, answer choice B does offer evidence for an alternative explanation.

E Viral disease is what the author ultimately suggests is the agent that drives the lepidoptera population cycles in question. The wide presence of viruses in lepidoptera could help support the author's conclusion.

The correct answer is B.

464. According to the passage, before the discovery of new techniques for detecting viral DNA, population ecologists believed that viral diseases

(A) were not widely prevalent among insect populations generally

(B) affected only the caterpillar life stage of lepidoptera

(C) were the driving force behind lepidoptera population cycles

(D) attacked already declining caterpillar populations

(E) infected birds and parasites that prey on various species of lepidoptera

Supporting Idea

This question addresses what the passage states directly about population ecologists' beliefs regarding viral diseases prior to the discovery of new viral DNA–detection techniques. The second paragraph of the passage states that these ecologists believed viral disease contributed to population decline that was already underway rather than initiating it.

A The second paragraph states that viral disease had been reported; thus, population ecologists were aware of its existence in insect populations. The passage is consistent with ecologists having believed that it was prevalent.

B The passage focuses mainly on the caterpillar life stage of lepidoptera, but there is nothing to suggest that scientists held particular beliefs regarding viral diseases' restriction to that life stage.

C It is after, not before, the discovery of new techniques for detecting viral DNA when populations ecologists came to believe that such diseases were the driving force behind the population cycles.

D **Correct.** As stated in the passage, population ecologists believed that viral diseases contributed to already occurring population decline.

E The passage does not discuss whether viral diseases may infect any lepidoptera predators.

The correct answer is D.

465. According to the passage, nuclear polyhedrosis viruses can remain virulent in the environment only when

(A) the polyhedrin protein crystals dissolve
(B) caterpillar populations are in decline
(C) they are present in large numbers
(D) their concentration in a particular area remains low
(E) they are sheltered from direct sunlight

Supporting Idea

The passage states in the second paragraph that these viruses remain virulent for many years if they are protected from direct sunlight. They are embedded in crystals of polyhedrin protein.

A The viruses remain virulent partially because of their being contained in polyhedrin protein crystals. They would most likely not remain virulent if those crystals dissolved.

B The viruses remain virulent even when caterpillar populations are not in decline; that is how the viruses initiate new population declines.

C According to the passage, viral DNA has been detected in the environment at low concentrations, yet the viruses are still virulent. Thus, they need not be present in large numbers.

D Nothing in the passage indicates that the concentration of these viruses must be low for them to be virulent.

E **Correct.** The passage says that if the viruses are protected from direct sunlight, they remain virulent for many years. The context strongly suggests that if they are not so protected, they do not remain virulent.

The correct answer is E.

466. It can be inferred from the passage that while inside its polyhedrin protein crystals, the nuclear polyhedrosis virus

(A) is exposed to direct sunlight
(B) is attractive to predators
(C) cannot infect caterpillars' cells
(D) cannot be ingested by caterpillars
(E) cannot be detected by new techniques of molecular biology

Inference

The passage indicates that the polyhedrin protein crystals protect the nuclear polyhedrosis virus when it is in the environment. When a caterpillar ingests those crystals, they dissolve. That releases the virus, whereupon it infects the caterpillar's cells. Thus it is reasonable to infer that the virus must be released from the crystals before it can infect the caterpillar.

A The passage states that nuclear polyhedrosis viruses remain embedded in polyhedrin protein crystals if protected from direct sunlight, not that the virus is exposed to light when it is in the protein crystals.

B Nothing in the passage indicates that any organism preys on the virus itself or that it attracts predators to caterpillars that it infects.

C **Correct.** The virus must be released from the crystals before it can infect caterpillars' cells.

D The passage states that caterpillars ingest the polyhedrin protein crystals.

E According to the passage, new techniques of molecular biology enable the detection of viral DNA in the environment. The nuclear polyhedrosis virus persists in the environment inside protein crystals. The passage suggests that the new techniques are able to detect the virus inside its crystals but does not provide any evidence about whether they detect it directly or infer its presence indirectly.

The correct answer is C.

Questions 467–470 refer to the passage on page 392.

467. According to the passage, which of the following is true of plant antiherbivore chemistry?

(A) Changes in a plant's antiherbivore chemistry may affect insect feeding behavior.

(B) A plant's repellent effects often involve interactions between gum and resin.

(C) A plant's antiherbivore responses assist in combating bacterial infections.

(D) Plant antiherbivore chemistry plays only a minor role in the coevolution of plants and insects.

(E) Researchers first studied repellent effects in plants beginning in the 1950s.

Supporting ideas

This question addresses what the information in the passage indicates about plant antiherbivore chemistry—that is, plants' chemical defenses against herbivore attacks. The second paragraph of the passage cites the views of various scientists regarding the possible role of resin in antiherbivore chemistry; plants could have evolved resin specifically to repel insects.

A **Correct.** According to the second paragraph, various scientists have suggested that a change in antiherbivore chemistry, here specifically involving resin, could repel insects; alternatively, some insects could have been attracted to resin, feeding more heavily on plants that produced it. Other researchers have suggested that even if resin does not directly repel or attract insects, it may indirectly affect insect-feeding behavior by mediating changes in plants' antiherbivore chemistry.

B The first paragraph states that plants produce gum in response to bacterial infections. Although this does not rule out the hypothesis that gum also contributes to plants' antiherbivore chemistry, the passage provides no evidence that it does so.

C According to the passage, a plant's antiherbivore responses have developed to combat predators, such as insects, that eat plants. The passage provides no evidence that such responses also combat bacterial infections.

D The second paragraph indicates that plant antiherbivore chemistry plays a major role in the discipline of chemical ecology, and chemical ecology concerns itself with coevolution of plants and insects.

E According to the passage, it was in the 1950s that entomologists began discussing resin's possible role in repelling and attracting insects. The passage does not suggest that this marked the beginning of their study of repellent effects more generally.

The correct answer is A.

468. Of the following topics, which would be most likely to be studied within the discipline of chemical ecology as it is described in the passage?

(A) Seeds that become attached to certain insects, which in turn carry away the seeds and aid in the reproductive cycle of the plant species in question

(B) An insect species that feeds on weeds detrimental to crop health and yield, and how these insects might aid in agricultural production

(C) The effects of deforestation on the life cycles of subtropical carnivorous plants and the insect species on which the plants feed

(D) The growth patterns of a particular species of plant that has proved remarkably resistant to herbicides

(E) Insects that develop a tolerance for feeding on a plant that had previously been toxic to them, and the resultant changes within that plant species

Application

The discipline of chemical ecology, as it is described in the passage, deals with how plants use chemicals to interact with other organisms—in particular, how they defend against attack—and how those interactions have evolved. To be studied within that discipline, a specific topic would need to address some aspect of that chemical interaction.

A The passage provides no reason to suppose that the topic of seeds and how they travel would be studied within chemical ecology, given that it does not discuss how chemicals might be involved in the reproductive cycle.

B The passage provides no indication that chemical ecology would be concerned with how weed-destroying insects would aid agricultural production.

C The passage provides no indication that deforestation would involve plant chemicals or that its effects would be studied in chemical ecology.

D The passage provides no indication that a plant's resistance to herbicides would be studied in chemical ecology, but the passage does suggest that the focus of chemical ecology is on how plants chemically interact with other organisms.

E **Correct.** Chemical ecology developed to deal with the interdependence between plants and insects. Insects' developing a tolerance for feeding on a once-toxic plant, and the plants' resultant changes, is a situation of just such interdependence: plants and insects coevolving.

The correct answer is E.

469. The author refers to "bacterial infections" (see line 11) most likely in order to

(A) describe the physiological function that gum performs in plants

(B) demonstrate that sap is not the only substance that is transported through a plant's tissues

(C) explain how modern chemical analysis has been used to clarify the function of resin

(D) show that gum cannot serve as an effective defense against herbivores

(E) give an example of how confusion has arisen with regard to the nature of resin

Evaluation

The author mentions *bacterial infections* in the first paragraph as the reason why plants produce the substance known as gum.

A **Correct.** The author states directly that plants produce gum in response to bacterial infections.

B The author states directly that sap is transported through plant tissues. The passage does not address the question of whether bacterial infections or anything related to them are similarly transported.

C The passage indicates that rigorous chemical analysis is now available, but scientists still do not know resin's function. The reference to bacterial infections is related to gum, not resin.

D The reference to bacterial infections indicates the actual purpose served by gum; it does not function to show ways in which gum is inadequate.

E Gum itself serves as an example of the confusion surrounding the nature of resin; bacterial infections, to which gum production is a response, do not serve as that example.

The correct answer is A.

470. The author of the passage refers to Pliny most probably in order to

(A) give an example of how the nature of amber has been misunderstood in the past
(B) show that confusion about amber has long been more pervasive than confusion about resin
(C) make note of the first known reference to amber as a semiprecious gem
(D) point out an exception to a generalization about the history of people's understanding of amber
(E) demonstrate that Pliny believed amber to be a mineral

Evaluation

The passage states generally that *amber has been widely misunderstood* but cites Pliny as noting correctly, in the first century, that amber resulted from a substance discharged by trees.

A Pliny's observation was, according to the author, accurate and not a misunderstanding.
B The author equates confusion about amber with confusion about resin; the reference to Pliny does not indicate which of the two, amber or resin, has been more widely misunderstood.
C The author indicates that others, not Pliny, mischaracterized amber as a semiprecious gem—and when that mischaracterization first occurred is not identified.
D **Correct.** Pliny's recognition that amber came from a substance discharged by trees stands, in the author's account, as an exception to the widespread incorrect identifications of the substance.
E Others held the belief that amber was a mineral. The passage indicates that Pliny recognized that amber came from trees but provides no evidence that he also considered it a mineral.

The correct answer is D.

Questions 471–473 refer to the passage on page 394.

471. The primary purpose of the passage is to

(A) compare the impact of the Great Depression on Latin America with its impact on the United States
(B) criticize a school of economic historians for failing to analyze the Great Depression in Latin America within a global context
(C) illustrate the risks inherent in comparing different types of economic enterprises to explain economic phenomena
(D) call into question certain scholars' views concerning the severity of the Great Depression in Latin America
(E) demonstrate that the Great Depression had a more severe impact on industry in Latin American than in certain other regions

Main idea

This question depends on understanding the passage as a whole. The passage first describes the view of many economic historians of the 1980s. It next describes the evidence on which that view is based. The remainder of the passage raises issues about the rationale for that view.

A The comparison between Latin America and the United States is only a small part of a larger argument analyzing studies of the Great Depression in Latin America.
B The passage does not discuss a global context for the Great Depression.
C The passage does not primarily aim to illustrate risks that may be generally inherent in explaining economic phenomena.
D **Correct.** The passage claims that certain scholars underestimate the severity of the Great Depression in Latin America.
E The passage does not claim that the impact of the Great Depression on Latin American industry was generally more severe than its impact on industry elsewhere.

The correct answer is D.

472. Which of the following conclusions about the Great Depression is best supported by the passage?

(A) It did not impede Latin American industrial growth as much as historians had previously thought.

(B) It had a more severe impact on the Brazilian and the Mexican textile industries than it had on Latin America as a region.

(C) It affected the Latin American textile industry more severely than it did any other industry in Latin America.

(D) The overall impact on Latin American industrial growth should be reevaluated by economic historians.

(E) Its impact on Latin America should not be compared with its impact on the United States.

Inference

This question asks which conclusion is most strongly supported by the passage. The passage presents the rationale of some historians for their conclusion that the Great Depression did not significantly interfere with economic growth in Latin America. It then critiques that rationale and conclusion. By questioning the historians' claims, the passage suggests that a reevaluation of the Great Depression's effect on Latin America is needed.

A The passage does not significantly support this. The passage indicates that, in fact, the Great Depression impeded Latin American economic development more than some historians had thought.

B The passage does not significantly support this. The passage does not compare the impact on the Brazilian and Mexican textile industries to the impact on the Latin American region.

C The passage does not significantly support this. The passage does not compare the effect of the Great Depression on the textile industry to its effect on other industries.

D **Correct.** As presented in the passage, the passage author's critique of the historians' rationale for their claims provides significant support for the conclusion that their claims should be reevaluated.

E The passage does not significantly support the claim that the comparison in question should not be made.

The correct answer is D.

473. Which of the following, if true, would most strengthen the author's assertion regarding economic indicators in lines 25–27 ?

(A) During an economic depression, European textile manufacturers' profits rise while their industrial output remains steady.

(B) During a national economic recession, United States microchips manufacturers' profits rise sharply while United States steel manufacturers' profits plunge.

(C) During the years following a severe economic depression, textile manufacturers' output levels and profit levels increase in Brazil and Mexico but not in the rest of Latin America.

(D) Although Japanese industry as a whole recovers after an economic recession, it does not regain its previously high levels of production.

(E) While European industrial output increases in the years following an economic depression, total output remains below that of Japan or the United States.

Application

The question involves applying information from outside the passage to a claim made by the author. The text in lines 25–27 asserts that broad economic indicators pertaining to a nation or region can obscure differences between individual firms or industries within that nation or region. The question asks which evidence would most strengthen the support for that conclusion.

A This refers only to the relationship between a single industry's profits and its output, not to general economic indicators.

B **Correct.** The phrase *a national recession* refers to a general economic indicator. Suppose that in a situation described as a national recession, one industry (microchip manufacturing) prospers while another industry (steel manufacturing) does not. This would provide some additional support, over and above that given in the passage, for the assertion that broad economic indicators may mask differences between industries.

C Economic differences between countries do not strengthen the support for the author's assertion regarding variations among different firms and industries in one country or region.

D This has no obvious bearing on how sweeping economic indicators can mask differences between industries or enterprises in a single country or region.

E A comparison of different countries does not pertain to the assertion regarding variation among firms and industries in the same country.

The correct answer is B.

Questions 474–477 refer to the passage on page 396.

474. It can be inferred from the passage that a large plant might have to spend more than a similar but smaller plant on environmental compliance because the larger plant is

(A) more likely to attract attention from local regulators
(B) less likely to be exempt from permit and reporting requirements
(C) less likely to have regulatory costs passed on to it by companies that supply its raw materials
(D) more likely to employ older production technologies
(E) more likely to generate wastes that are more environmentally damaging than those generated by smaller plants

Inference

This item depends on understanding the implications of the passage's discussion of differences between large and small plants. It asks what might be true of a larger plant that would compel it to spend more than a smaller plant on environmental compliance. The passage addresses this issue by stating that smaller plants are often not subject to the same permit or reporting requirements that larger plants are.

A The likelihood of attracting regulatory attention is discussed only in the context of comparing plants that are *isolated* with small plants that are near large noncompliant ones. The passage does not suggest that size is generally the crucial determining factor in attracting regulatory attention.

B **Correct.** According to the passage, certain permit or reporting requirements may not apply to smaller plants; this suggests that larger plants are less likely than smaller plants to be exempt from these requirements, and thus that the larger plants would have to spend more to comply.

C The passage does not discuss the passing on of regulatory costs from suppliers to plants.

D The passage does not suggest that larger plants are any more likely than smaller plants to employ older production technologies.

E The passage does not distinguish between the types of wastes emitted by larger plants and those emitted by smaller plants.

The correct answer is B.

475. According to the passage, which of the following statements about sulfur dioxide and nitrogen oxide outputs is true?

(A) Older production technologies cannot be adapted so as to reduce production of these outputs as waste products.
(B) Under the most recent environmental regulations, industrial plants are no longer permitted to produce these outputs.
(C) Although these outputs are environmentally hazardous, some plants still generate them as waste products despite the high compliance costs they impose.

(D) Many older plants have developed innovative technological processes that reduce the amounts of these outputs generated as waste products.

(E) Since the production processes that generate these outputs are less costly than alternative processes, these less expensive processes are sometimes adopted despite their acknowledged environmental hazards.

Supporting idea

This item depends on identifying what the passage states explicitly about outputs of sulfur dioxide and nitrogen oxide. The passage says that plants that produce these outputs are those that use older industrial coal-fired burners, and that such plants are subject to extensive compliance costs imposed by new regulations.

A The passage does not address the question of whether older production technologies might be adapted to reduce outputs of sulfur dioxide and nitrogen oxide.

B The passage states that new regulations have imposed high compliance costs on companies that produce sulfur dioxide and nitrogen oxide outputs, not that these outputs are prohibited.

C **Correct.** The passage states that some companies are still using the older kinds of burners that generate sulfur dioxide and nitrogen oxide outputs, and that new regulations have imposed high compliance costs on these companies.

D The passage does not address the question of whether older plants have developed new processes to reduce the amounts of sulfur dioxide and nitrogen oxide they produce.

E Sulfur dioxide and nitrogen oxide outputs, the passage suggests, are produced only by older industrial coal-fired burners; newer facilities (using alternative processes) do not employ this technology, the expense of which is not mentioned in the passage.

The correct answer is C.

476. Which of the following best describes the relationship of the statement about large plants (lines 12–17) to the passage as a whole?

(A) It presents a hypothesis that is disproved later in the passage.

(B) It highlights an opposition between two ideas mentioned in the passage.

(C) It provides examples to support a claim made earlier in the passage.

(D) It exemplifies a misconception mentioned earlier in the passage.

(E) It draws an analogy between two situations described in the passage.

Evaluation

This question asks about the role played in the passage by the following statement: *Additionally, large plants can spread compliance costs such as waste treatment across a larger revenue base; on the other hand, some smaller plants may not even be subject to certain provisions such as permit or reporting requirements by virtue of their size*. This statement describes situations in which compliance costs for plants of different sizes may differ, which serve as evidence in support of the passage's main claim: that environmental regulations do *not* affect all competitors in a given industry uniformly.

A The statement in question is not a hypothesis; rather, it reports factors that are known to affect the varying impact of environmental regulations.

B This is too vague to be a good description of the kind of relationship the question asks about. The statement in question does present a contrast—it suggests that larger plants' compliance costs are lower under some circumstances, while smaller plants' compliance costs are lower under other circumstances. But this purports to state two facts rather than mere *ideas*; they are contrasting facts but not in any meaningful sense *opposed*, since they can easily coexist.

C **Correct.** The statement provides examples to support the initial claim made in the passage that regulatory costs fall unevenly on competitors in an industry: large plants can spread compliance costs around, and smaller plants may not even have to pay certain costs.

D This statement helps to dispel, not exemplify, a misconception mentioned earlier in the passage—i.e., the myth that environmental regulations affect all companies in an industry the same way.

E The statement does not suggest that the situation of larger and smaller plants is similar (or analogous) to any other situation mentioned in the passage.

The correct answer is C.

477. The primary purpose of the passage is to

(A) address a widespread environmental management problem and suggest possible solutions

(B) illustrate varying levels of compliance with environmental regulation among different corporations

(C) describe the various alternatives to traditional methods of environmental management

(D) advocate increased corporate compliance with environmental regulation

(E) correct a common misconception about the impact of environmental regulations

Main idea

This question depends on understanding the passage as a whole. Its first sentence indicates its main purpose: to dispel a myth about environmental regulations that is often taken as fact.

A The passage is not about the management of any environmental problem, which would be a problem about how to prevent or undo damage to the environment. The passage primarily aims to dispel a belief that the passage says is widely held by environmental managers.

B The passage refers to variations in firms' levels of compliance with environmental regulations, but its primary purpose is not to illustrate those varying levels, nor does it do so.

C The passage suggests that most environmental managers are mistaken about a key concept; its primary purpose is not to describe traditional methods of environmental management or alternatives to those traditional methods, nor does it do so.

D The passage takes no position on whether companies should increase their compliance with environmental regulation.

E **Correct.** The passage primarily aims to dispel the belief that environmental regulations affect all companies in an industry uniformly.

The correct answer is E.

Questions 478–483 refer to the passage on page 398.

478. In the passage, the author is primarily interested in

(A) suggesting an alternative to an outdated research method

(B) introducing a new research method that calls an accepted theory into question

(C) emphasizing the instability of data gathered from the application of a new scientific method

(D) presenting a theory and describing a new method to test that theory

(E) initiating a debate about a widely accepted theory

Main idea

This question concerns the main point of the passage. A careful examination of the overall structure of the passage will reveal the main point. In the first paragraph, the author briefly presents Milankovitch's theory and explains why it could not be tested early on. In the second and third paragraphs, the author describes how a new method allows testing of the theory and shows how evidence from the testing supports the theory. While the final paragraph acknowledges that other factors should be considered, the author's primary interest in this passage is in presenting Milankovitch's theory and the recently discovered method for testing it.

A A new research method is described, but no previous method is discussed.

B As described in the passage, the new method tests and confirms the theory; there is no mention that the theory is accepted or that the method casts doubt on it.

C Nothing in the passage suggests that "instability of data" is an issue.

D **Correc**t. The author presents Milankovitch's theory and describes the oxygen isotope method of testing it.

E The theory is nowhere said to be "widely accepted" and the author does not debate the theory.

The correct answer is D.

479. The author of the passage would be most likely to agree with which of the following statements about the Milankovitch theory?

(A) It is the only possible explanation for the ice ages.

(B) It is too limited to provide a plausible explanation for the ice ages, despite recent research findings.

(C) It cannot be tested and confirmed until further research on volcanic activity is done.

(D) It is one plausible explanation, though not the only one, for the ice ages.

(E) It is not a plausible explanation for the ice ages, although it has opened up promising possibilities for future research.

Application

The author's reaction to the statements about the Milankovitch theory must be based on how the author treats the theory in the passage. The first, second, and third paragraphs describe the theory and the use of a new research method to test the theory. The passage states that data from these tests *have established a strong connection between variations in the Earth's orbit and the periodicity of the ice ages*, suggesting that the author of the passage believes the theory is plausible. In the final paragraph, the author points to other factors that might be involved, suggesting that the theory might not provide a complete explanation.

A In the last paragraph, the author suggests that because there are still other untested factors that may have effects on climate, other explanations are possible.

B Though in the last paragraph the author points to other factors that may be involved, these are not presented by the author as indicating limitations that diminish the plausibility of the theory—they are acknowledged merely as possibilities that are not now understood—and nothing else in the passage suggests that the theory is "too limited."

C The author shows how the theory has been tested; volcanic activity is not part of this theory.

D **Correct.** The author's presentation of the theory and the tests of the theory show that the author finds the theory plausible; the mention of other factors shows the author does not think that all other explanations have been ruled out, even if they are as yet untested.

E The theory was a plausible explanation from its beginning, but it was not testable until recently; scientists would be unlikely to try to devise means to test a theory that did not strike them as antecedently plausible.

The correct answer is D.

480. It can be inferred from the passage that the isotope record taken from ocean sediments would be less useful to researchers if which of the following were true?

(A) It indicated that lighter isotopes of oxygen predominated at certain times.

(B) It had far more gaps in its sequence than the record taken from rocks on land.

(C) It indicated that climate shifts did not occur every 100,000 years.

(D) It indicated that the ratios of oxygen 16 and oxygen 18 in ocean water were not consistent with those found in fresh water.

(E) It stretched back for only a million years.

Inference

To make an inference about the isotope record from ocean sediments, examine what the passage says about that record. The third paragraph discusses that record and lists its two advantages. First, it is a global record with *remarkably little variation* in samples from varied locations. Second, it is *more continuous* than the record from rocks. If either of these advantages were not true, then it is logical to infer that the record would be less useful.

A According to lines 14–16, the lighter isotope does predominate; this is part of the record and does not affect its usefulness.

B **Correct.** In lines 37–42, the author states that an advantage of the ocean record is that it is *a more continuous record than that taken from rocks on land*. If this were not true, the ocean record would be less useful.

C If the record were to show that the shifts did not occur every 100,000 years, Milankovitch's theory would be weakened. This impact on the theory does not make the isotope record less useful to researchers. The record is useful precisely because it can offer evidence to confirm or refute such theories.

D This inconsistency would not affect the usefulness of the ocean-water record. Researchers would simply need to accommodate the fresh-water inconsistency.

E The record would still be useful. Lines 42–46 attest to the establishment of a pattern based on data from *the past several hundred thousand years*.

The correct answer is B.

481. According to the passage, which of the following is true of the ratios of oxygen isotopes in ocean sediments?

(A) They indicate that sediments found during an ice age contain more calcium carbonate than sediments formed at other times.

(B) They are less reliable than the evidence from rocks on land in determining the volume of land ice.

(C) They can be used to deduce the relative volume of land ice that was present when the sediment was laid down.

(D) They are more unpredictable during an ice age than in other climatic conditions.

(E) They can be used to determine atmospheric conditions at various times in the past.

Supporting ideas

The phrase *according to the passage* suggests that the answer to the question is most likely stated in the passage. Lines 12–14 state that the relative volume of land ice can be deduced from the ratio of oxygen 18 to oxygen 16 in ocean sediments.

A There is no evidence in the passage about this point.

B The ocean record is described in lines 38–39 as *more continuous*, so it is unlikely to be less reliable. In any case, reliability is not discussed.

C **Correct.** Lines 12–14 explain that *the land-ice volume for a given period can be deduced from the ratio of two oxygen isotopes*.

D There is no evidence in the passage to support this statement.

E The passage does not discuss the use of this record in determining past atmospheric conditions.

The correct answer is C.

482. It can be inferred from the passage that precipitation formed from evaporated ocean water has

(A) the same isotopic ratio as ocean water

(B) less oxygen 18 than does ocean water

(C) less oxygen 18 than has the ice contained in continental ice sheets

(D) a different isotopic composition than has precipitation formed from water on land

(E) more oxygen 16 than has precipitation formed from fresh water

Inference

Any inference about precipitation from evaporated ocean water needs to be based on what the passage says. Lines 20–22 show that *heavier isotopes tend to be left behind when water evaporates from the ocean surfaces*. Therefore, the evaporated water would contain less oxygen 18 and the remaining ocean water would contain more. It is logical to infer that precipitation formed from this evaporated water would also contain less oxygen 18.

A Lines 20–24 explain that the water remaining in the ocean after evaporation has more oxygen 18.

B Correct. Since *the heavier isotopes tend to be left behind*, there will be less oxygen 18 in the evaporated water and in the precipitation that forms from it.

C The passage suggests that the ocean water evaporates and through subsequent precipitation helps form the ice sheets, so the amount of oxygen 18 in the ice sheets should be similar to the amount in the precipitation formed from the evaporated water.

D The passage does not discuss precipitation formed from water on land.

E The passage does not discuss precipitation formed from fresh water.

The correct answer is B.

483. It can be inferred from the passage that calcium carbonate shells

(A) are not as susceptible to deterioration as rocks

(B) are less common in sediments formed during an ice age

(C) are found only in areas that were once covered by land ice

(D) contain radioactive material that can be used to determine a sediment's isotopic composition

(E) reflect the isotopic composition of the water at the time the shells were formed

Inference

Any inference about calcium carbonate shells needs to be based on what the passage says about these shells. Lines 24–32 explain the role of these shells in forming sediments and establishing a chronology for ice ages. The shells *were constructed with oxygen atoms drawn from the surrounding ocean*. Lines 29–32 make it clear that if the sediments reveal a higher ratio of oxygen 18, it is because more oxygen 18 had been left behind when the ocean water evaporated and contributed to the growth of continental ice sheets. It can thus be inferred that the shells that make up those sediments must reflect the proportion of oxygen 18 found in the ocean water at the time they were formed.

A The only mention of rocks in the passage is a comparison of "gappiness" of the rock and sedimentary specimen records in lines 38–39; this information does not allow any firm inference to be made with respect to relative susceptibility to deterioration, though a more continuous record might be the result of less susceptibility to deterioration.

B The passage does not make any reference to the relative abundance of these shells during ice ages; no such inference can be drawn.

C The only information in the passage that might support this statement is found in lines 29–32, but that information, about the correlation between oxygen ratios in sediment specimens and land ice, describes a relation that implies nothing about distributions of such specimens.

D Though the passage does indirectly indicate that the shells contained radioactive material, nothing in the passage suggests that radioactive material is used to determine isotopic composition.

E Correct. The passage explains that oxygen atoms in the surrounding water are one of the building blocks of calcium carbonate shells. The isotopic composition of the surrounding water changes during the ice age cycles, so it is logical that the isotopic composition of the shells will change depending on when they were formed.

The correct answer is E.

Questions 484–489 refer to the passage on page 400.

484. The primary purpose of the passage is to

(A) examine two sides of a historiographical debate

(B) call into question an author's approach to a historiographical debate

(C) examine one author's approach to a historiographical debate

(D) discuss two authors' works in relationship to a historiographical debate

(E) explain the prevalent perspective on a historiographical debate

Main idea

This question requires understanding what the passage as a whole is attempting to do. The passage opens by introducing two books published in 1984 that both concern the history of women in the United States. The passage then makes it clear that one book deals *directly* (line 15) with the issue of women's status, while the other does not. The passage then goes on to discuss the perspective that each book takes and what each book has to offer for an assessment of women's status in the eighteenth and nineteenth centuries.

A The two books discussed in the passage do not take different sides on a particular debate but rather are described as being more or less useful to the debate itself.
B The passage focuses on how two different books contain information useful to a particular historiographical debate but does not call into question the approach of either book.
C The passage focuses on two authors' works, not one.
D **Correct.** The passage discusses what two different books have to offer in relation to a particular historiographical debate.
E The passage does not describe any perspective on a particular historiographical debate as being more prevalent than any other.

The correct answer is D.

485. The author of the passage mentions the supervision of schools primarily in order to

(A) remind readers of the role education played in the cultural changes of the nineteenth century in the United States
(B) suggest an area in which nineteenth-century American women were relatively free to exercise power
(C) provide an example of an occupation for which accurate data about women's participation are difficult to obtain
(D) speculate about which occupations were considered suitable for United States women of the nineteenth century
(E) illustrate how the answers to questions about women's status depend on particular contexts

Evaluation

Answering this question depends on understanding what role a particular piece of information plays in the passage as a whole. The author implicitly supports Lebsock's contention (beginning at line 20) that different frames of reference can produce different perspectives on the debate about women's status in the eighteenth and nineteenth centuries. The author then summarizes different contexts cited by Lebsock to support the contention about frames of reference. As part of this summary, the author refers to *supervising schools* (lines 24–25) as an example of a job that apparently showed women losing power.

A The passage does not discuss the role of education in the nineteenth century.
B The passage does mention some ways in which, according to Lebsock, *women … gained power* (lines 25–26) in the nineteenth century, but *supervising schools* is not among them.
C The passage does not discuss the difficulty of obtaining data about particular occupations.
D The passage makes no judgments about the suitability for women of any jobs in the nineteenth century.
E **Correct.** The passage mentions supervising schools as part of an illustration of Lebsock's claim that the debate about women's status depends on the context being examined.

The correct answer is E.

486. With which of the following characterizations of Lebsock's contribution to the controversy concerning women's status in the nineteenth-century United States would the author of the passage be most likely to agree?

(A) Lebsock has studied women from a formerly neglected region and time period.
(B) Lebsock has demonstrated the importance of frame of reference in answering questions about women's status.
(C) Lebsock has addressed the controversy by using women's current status as a frame of reference.
(D) Lebsock has analyzed statistics about occupations and property that were previously ignored.

(E) Lebsock has applied recent historiographical methods to the biography of a nineteenth-century woman.

Supporting ideas

Answering this question requires recognizing information explicitly given in the passage. The passage introduces the work of Lebsock in line 6 and then goes on to describe several characteristics of Lebsock's book. In lines 20–22, the author introduces Lebsock's claim that the historiographical debate about women's status is dependent on frame of reference and calls that claim important; the passage then gives an example showing how frame of reference affects views of women's status. In so doing, the author displays an implicit agreement with Lebsock's discussion on this point.

A The author of the passage portrays neither the place nor time period that Lebsock focuses on as having been neglected by historians.

B **Correct.** The author describes as important Lebsock's idea that frame of reference informs the debate about women's status.

C According to the passage, Lebsock's book deals with women's status in the eighteenth and nineteenth centuries, not the present status of women.

D The passage does not mention or imply that Lebsock analyzed statistics in writing her book.

E Although the passage does describe Lebsock's book as pertaining to an ongoing historiographical debate, it identifies the book's topic as *women in one southern community* (lines 7–8), not the life of a single woman.

The correct answer is B.

487. According to the passage, Lebsock's work differs from Buel and Buel's work in that Lebsock's work

(A) uses a large number of primary sources

(B) ignores issues of women's legal status

(C) refuses to take a position on women's status in the eighteenth century

(D) addresses larger historiographical issues

(E) fails to provide sufficient material to support its claims

Supporting ideas

This question asks for recognition of information contained in the passage. In the first sentence, the passage states that Buel and Buel's work and Lebsock's work have *contrasting approaches.* The passage then proceeds, using descriptions of each work's approach, to illustrate how the works differ. The passage notes that Buel and Buel's work *makes little effort* to place its biographical subject *in the context of recent historiography on women* (lines 5–6), whereas Lebsock's work attempts *to redirect two decades of historiographical debate* about women's status.

A Primary sources are not mentioned in the passage in relation to either work discussed.

B The legal status of women is not mentioned in the passage.

C Lebsock's work is described in the passage as attempting to redirect the debate about women's status in the eighteenth and nineteenth centuries.

D **Correct.** The passage suggests that by not placing its subject's story in the context of historiography, Buel and Buel's work does not therefore address larger historiographical issues, as Lebsock's does.

E The passage tends to support Lebsock's views and does not refer to any lack of support for the claims made in Lebsock's work.

The correct answer is D.

488. The passage suggests that Lebsock believes that compared to nineteenth-century American women, eighteenth-century American women were

(A) in many respects less powerful in relation to men

(B) more likely to own real estate

(C) generally more economically independent

(D) more independent in conducting their private lives

(E) less likely to work as school superintendents

Inference

This question requires making an inference based on information given in the passage. As part of the passage's description of Lebsock's contribution to the historiographical debate about women's status in the eighteenth and nineteenth centuries, Lebsock's conclusions about women's autonomy are described. As part of this description, the passage cites Lebsock's conclusion that nineteenth-century women lost economic autonomy when compared to eighteenth-century women (lines 17–20).

A The passage states that in many ways women in the nineteenth century *lost power in relation to men* (line 23), which would imply that in those respects eighteenth-century women had more power in relation to men, not less. The only increase mentioned in nineteenth-century women's power is associated with owning more real estate.

B The passage states that more nineteenth-century women owned real estate.

C **Correct.** As the passage states, Lebsock concluded that nineteenth-century women lost economic autonomy compared to eighteenth-century women.

D The passage states that nineteenth-century women gained more independence in their private lives.

E The passage cites school superintendents as an example of an occupation more likely to be held by eighteenth-century women.

The correct answer is C.

489. The passage suggests that Buel and Buel's biography of Mary Fish provides evidence for which of the following views of women's history?

(A) Women have lost power in relation to men since the colonial era.

(B) Women of the colonial era were not as likely to be concerned with their status as were women in the nineteenth century.

(C) The colonial era was not as favorable for women as some historians have believed.

(D) Women had more economic autonomy in the colonial era than in the nineteenth century.

(E) Women's occupations were generally more respected in the colonial era than in the nineteenth century.

Inference

This question requires understanding what the passage implies. The approach that Buel and Buel's work takes is specifically described in lines 3–6 and again in lines 28–34. In lines 29–32, the passage states that Buel and Buel's work *provides ample raw material for questioning the myth … of a colonial golden age in the eighteenth century*, referring to a myth about women's status. In describing this golden age as a myth fostered by some historians, the passage suggests that this era was not as favorable to women as these historians suggest.

A The passage describes Lebsock's work as providing such evidence, not Buel and Buel's work.

B The passage does not pertain to the level of concern women had for their status.

C **Correct.** The final paragraph of the passage describes Buel and Buel's work as providing material that calls into question claims that the eighteenth century was especially favorable to women.

D The passage refers to the economic autonomy of women in relation to Lebsock's work, not Buel and Buel's work.

E The passage does not refer to whether any particular occupations held by women were more respected at one time or another.

The correct answer is C.

Questions 490–492 refer to the passage on page 402.

490. The passage suggests that WIDC differed from WTUL in which of the following ways?

(A) WIDC believed that the existing safety regulations were adequate to protect women's health, whereas WTUL believed that such regulations needed to be strengthened.

(B) WIDC believed that unions could not succeed in pressuring employers to comply with such regulations, whereas WTUL believed that unions could succeed in doing so.

(C) WIDC believed that lead poisoning in white lead factories could be avoided by controlling conditions there, whereas WTUL believed that lead poisoning in such factories could not be avoided no matter how stringently safety regulations were enforced.

(D) At the time that the legislation concerning white lead factories was proposed, WIDC was primarily concerned with addressing health conditions in white lead factories, whereas WTUL was concerned with improving working conditions in all types of factories.

(E) At the time that WIDC was opposing legislative attempts to restrict women's labor, WTUL had already ceased to do so.

Inference

To answer this question you need to understand the differences between WIDC and WTUL as they are described in the passage. The only information about WTUL in the passage is that it had stopped opposing restrictions on women's labor in the late 1880s, and that, because existing safety regulations were not being enforced, it supported the proposal to prohibit women from working in white lead factories. WIDC, on the other hand, was formed in 1892 specifically to oppose restrictions on women's labor, and it opposed the proposal.

A According to the passage, WIDC did believe that existing safety regulations, if enforced, could prevent lead poisoning. WTUL may or may not have believed that the safety regulations needed to be strengthened; all the passage states is that WTUL did not believe that the safety regulations were likely to be enforced.

B The passage states that WTUL believed that because there were no unions to pressure employers, the employers would not comply with safety regulations. The passage does not present any information on which to base a conclusion about WIDC's beliefs regarding union pressure on employers.

C Based on information in the passage, both WIDC and SPEW believed that enforcing safety regulations could protect women against lead poisoning. WIDC supported SPEW's position on the matter. WTUL believed that safety regulations were unlikely to be enforced because of the lack of unions.

D The passage states that WIDC viewed the proposal to restrict women's employment in white lead factories as an instance of legislation designed to limit women's work opportunities—precisely the legislation that WIDC was formed to oppose. Thus, WIDC was not primarily concerned with the factories' health conditions.

E **Correct.** WIDC began opposing legislative attempts to restrict women's labor in 1892 and continued to do so through at least 1895, when the Home Secretary proposed prohibiting women from working in white lead factories. WTUL stopped opposing restrictions on women's labor in the late 1880s, before WIDC was even founded. Thus, the passage suggests that WTUL had stopped opposing restrictions on women's labor well before WIDC worked to oppose such legislation.

The correct answer is E.

491. Which of the following, if true, would most clearly support the contention attributed to SPEW in lines 17–20 ?

(A) Those white lead factories that most strongly enforced regulations concerning worker safety and hygiene had the lowest incidences of lead poisoning among employees.

(B) The incidence of lead poisoning was much higher among women who worked in white lead factories than among women who worked in other types of factories.

(C) There were many household sources of lead that could have contributed to the incidence of lead poisoning among women who also worked outside the home in the late nineteenth century.

(D) White lead factories were more stringent than were certain other types of factories in their enforcement of workplace safety regulations.

(E) Even brief exposure to the conditions typically found in white lead factories could cause lead poisoning among factory workers.

Evaluation

This question requires the reader to find a statement that would provide additional support for the contention made in the following statement: *SPEW contended, and WIDC concurred, that controllable conditions in such factories were responsible for the development of lead poisoning.* Information suggesting that when conditions were controlled, lead poisoning was less likely to develop would provide support for SPEW's contention.

A **Correct.** If incidences of lead poisoning were low in those factories that enforced hygiene and safety regulations, that would suggest that lead poisoning was not an inevitable result of working in a white lead factory—but rather that lead poisoning was the result of poor hygiene and safety practices.

B It would not be particularly surprising for the incidence of lead poisoning to be higher among women working in white lead factories than among women working in other kinds of factories—but such a finding would say nothing about whether controllable conditions had any effect on the development of lead poisoning.

C The existence of household sources of lead that might contribute to lead poisoning would weaken, not support, SPEW's contention that controllable factory conditions were responsible for the development of lead poisoning.

D If white lead factories enforced workplace safety regulations more stringently than did some other types of factories, it might be the case that SPEW's contention was incorrect: that even controlled conditions could not prevent a high incidence of lead poisoning.

E If the conditions typically found in white lead factories were particularly bad with regard to safety and hygiene, it could conceivably be the case that SPEW's contention was true—that is, that the conditions that caused lead poisoning were controllable. But it might also be the case that an uncontrollable aspect of those conditions caused lead poisoning. Thus, this neither supports nor undermines SPEW's contention clearly.

The correct answer is A.

492. The passage is primarily concerned with

(A) presenting various groups' views of the motives of those proposing certain legislation
(B) contrasting the reasoning of various groups concerning their positions on certain proposed legislation
(C) tracing the process whereby certain proposed legislation was eventually enacted
(D) assessing the success of tactics adopted by various groups with respect to certain proposed legislation
(E) evaluating the arguments of various groups concerning certain proposed legislation

Main idea

Answering this question depends on identifying the overall point of the passage. The passage is mainly concerned with explaining the reasons behind the positions taken by WIDC and SPEW, which opposed the proposal to enact legislation prohibiting women from holding most white lead factory jobs, and the reasoning of WTUL, which supported the proposal.

A The passage explains how WIDC viewed the proposal, but it does not indicate what any of the groups believed about the motivations of the Home Secretary, who made the proposal.

B **Correct.** The passage contrasts the reasoning of the WIDC and SPEW, both of which believed that enforcing safety regulations would make the proposed legislation unnecessary, with the reasoning of WTUL, which thought that safety regulations were unlikely to be enforced and thus supported the proposal.

C The passage simply states that the proposal was eventually enacted; it does not trace the process by which this occurred.

D The passage implies that WIDC and SPEW were unsuccessful in their opposition to the proposed legislation, but it identifies only one tactic used in opposition to it: SPEW's attempt to challenge it by investigating the causes of lead poisoning.

E The passage does not evaluate the groups' arguments concerning the proposed legislation; rather, it presents those arguments without comment on their quality or value.

The correct answer is B.

Questions 493–498 refer to the passage on page 404.

493. The author of the passage refers to Robert Filmer (see line 9) primarily in order to

(A) show that Royalist ideology was somewhat more radical than most historians appear to realize
(B) qualify the claim that patriarchalism formed the basis of Royalist ideology
(C) question the view that most early feminists were associated with the Royalist faction
(D) highlight an apparent tension between Royalist ideology and the ideas of early feminists
(E) argue that Royalists held conflicting opinions on issues of family organization and women's political rights

Evaluation

This question asks about the role of Filmer in the passage. The author states that Filmer's radical patriarchalism is associated with Royalist ideology and then goes on to define radical patriarchalism as an ideology that asserts the power of the king and the male head of the household. Early feminists, however, questioned the subordination of women in marriage. Thus, there seems to be a conflict between these two sets of ideas.

A Although the passage refers to Filmer's view as *radical patriarchalism*, it provides no evidence regarding any differences in the degrees to which historians consider that view, or Royalism in general, to be radical.
B Filmer's work supports the claim that patriarchalism was the basis of Royalist ideology; it does not qualify such a claim.
C That Filmer's approach was one of radical patriarchalism makes it surprising that early feminists were associated with the Royalist faction, but it does not provide any grounds for questioning whether they were so associated.
D **Correct.** There is apparent tension between Filmer's radical patriarchalism, if that is indeed essential to Royalist ideology, and the ideas of early feminists, who questioned such patriarchalism.
E The author refers to Filmer in order to suggest, initially, a uniformity among Royalists regarding family and women; it is only later in the passage that this view becomes more complicated.

The correct answer is D.

494. The passage suggests which of the following about the seventeenth-century English women mentioned in line 2?

(A) Their status as forerunners of modern feminism is not entirely justified.
(B) They did not openly challenge the radical patriarchalism of Royalist Filmerian ideology.
(C) Cavendish was the first among these women to criticize women's subordination in marriage and assert women's equality with men.
(D) Their views on family organization and women's political rights were diametrically opposed to those of both Royalist and Parliamentarian ideology.
(E) Historians would be less puzzled if more of them were identified with the Parliamentarian side in the English Civil Wars.

Inference

The first sentence of the passage refers to women who are both regarded as forerunners of modern feminism and identified as Royalists. The passage goes on to suggest that, given Royalist ideology's association with Filmer's radical patriarchalism (equating absolute power of the king with absolute power of the male head of household), it is surprising that feminism would find any footing within such an ideology.

A Nothing in the passage disputes the idea that the seventeenth-century English women in question should be considered the forerunners of modern feminism.
B Gallagher provides the example of Margaret Cavendish as a writer who did openly challenge radical patriarchalism—albeit only in her writings.

C The passage states that Cavendish had successors among early feminists, but it does not indicate whether she herself was the first seventeenth-century English woman to assert women's equality.

D The passage does not indicate what the Parliamentarian view of family organization and women's political rights was, so there is no way to determine whether the Royalist forerunners of modern feminism were opposed to that view.

E Correct. The basic puzzle the passage sets out to solve is why the forerunners of modern feminism would have been associated with the Royalist side, which seems to have been based on radical patriarchalism. Historians would most likely have been less surprised if these women had been identified with the Parliamentarian side, which presumably did not embrace radical patriarchalism.

The correct answer is E.

495. The passage suggests that Margaret Cavendish's decision to become an author was motivated, at least in part, by a desire to

(A) justify her support for the Royalist cause

(B) encourage her readers to work toward eradicating Filmerian patriarchalism

(C) persuade other women to break free from their political and social isolation

(D) analyze the causes for women's exclusion from the pursuit of power

(E) create a world over which she could exercise total control

Inference

This question asks about Margaret Cavendish's reasons for becoming an author. The second paragraph describes her as someone who *insisted that she was a self-sufficient being*; she understood that, given the real-world strictures in place, she could achieve this self-sufficiency in her own mind and on paper as a writer. So her decision to become a writer can be inferred to be motivated by her desire to exercise power and control.

A The passage states that Cavendish justified her being the center of her own universe by invoking the Royalist figure of the absolute monarch; there is no suggestion in the passage that Cavendish felt the need to justify any support for the actual Royalist cause.

B The passage gives no direct indication that Cavendish was even aware of Filmerian patriarchalism.

C The second paragraph states that Cavendish's idea of absolute singularity carried with it the idea of social and political isolation; Cavendish was most likely not motivated by a desire to persuade other women to break free from such isolation.

D Cavendish took the exclusion of women from the pursuit of power for granted; the passage does not suggest that she was concerned with its causes.

E Correct. According to the passage, Cavendish considered herself a self-sufficient being who was at the center of her own universe; in her writing, she wanted to create a world in which this was also true.

The correct answer is E.

496. The phrase "a satellite orbiting a dominant male planet" (lines 41–42) refers most directly to

(A) Cavendish's concept that each woman is a sovereign self

(B) the complete political and social isolation of absolute singularity

(C) the immaterial world that a writer can create on paper

(D) the absolute subordination of women in a patriarchal society

(E) the metaphorical figure of the absolute monarch

Evaluation

The phrase in question is *a satellite orbiting a dominant male planet*. The passage states that this was the idea that Cavendish was reacting against; she preferred instead the idea that she was the center of her own universe, her own sovereign, subject to no one.

A The idea of a satellite orbiting a dominant male planet refers not to Cavendish's idea that each woman is a sovereign self, but rather to the idea directly opposed to that: each woman must submit to a dominant male.

B A *satellite orbiting a dominant male planet* is by definition not isolated, nor is it singular.

C According to the passage, Cavendish wished to create her own world as a writer so that she did not have to be a *satellite*.

D **Correct.** The phrase refers to the idea that in a patriarchal society, women are as satellites to men, who are the dominant planets.

E While radical patriarchy does equate the monarch with the male head of the household, the in question phrase is most directly about the relationship, under patriarchy, between women and men.

The correct answer is D.

497. The primary purpose of the passage is to

(A) trace the historical roots of a modern sociopolitical movement

(B) present one scholar's explanation for a puzzling historical phenomenon

(C) contrast two interpretations of the ideological origins of a political conflict

(D) establish a link between the ideology of an influential political theorist and that of a notoriously eccentric writer

(E) call attention to some points of agreement between opposing sides in an ideological debate

Main idea

This question asks about the passage as a whole. The passage is mainly concerned with outlining Catherine Gallagher's attempt to explain why, given Royalist ideology's apparent association with radical patriarchalism, Royalist women offered feminist critiques of women's subordination in marriage and asserted their equality with men.

A The passage makes no connection between early feminism and its modern form.

B **Correct.** The passage presents a puzzling historical phenomenon, that Royalist women critiqued patriarchalism, in the first paragraph, and then presents Catherine Gallagher's explanation for that phenomenon in the second paragraph.

C While the passage discusses the political conflict between the Royalists and Parliamentarians in the English Civil Wars in the first paragraph, neither this conflict, nor its ideological origins are the focus of the passage. Furthermore, the passage does not offer any interpretations of the origins of the conflict.

D The passage attempts to unlink the ideology of political theorist Robert Filmer and the eccentric author Margaret Cavendish by suggesting that Filmer's radical patriarchalism was not the only way of understanding Royalist ideology. Cavendish provided a different understanding entirely.

E While both sides of the ideological debate did agree on the absolute monarchy, the passage as a whole does not focus on this agreement, but rather on the disagreement about where, theoretically, the idea of absolute monarchy leads.

The correct answer is B.

498. Which of the following, if true, would most clearly undermine Gallagher's explanation of the link between Royalism and feminism?

(A) Because of their privileged backgrounds, Royalist women were generally better educated than were their Parliamentarian counterparts.

(B) Filmer himself had read some of Cavendish's early writings and was highly critical of her ideas.

(C) Cavendish's views were highly individual and were not shared by the other Royalist women who wrote early feminist works.

(D) The Royalist and Parliamentarian ideologies were largely in agreement on issues of family organization and women's political rights.

(E) The Royalist side included a sizable minority faction that was opposed to the more radical tendencies of Filmerian patriarchalism.

Inference

This question asks about how to undermine the way in which Gallagher connects Royalism and feminism. According to Gallagher, Cavendish's work exemplifies the connection between these ideas, because Cavendish took the idea of absolute monarchy and extended that to the idea of absolute self, an idea that should, Cavendish believed, apply to women as well as men.

A Gallagher's explanation of the link between Royalism and feminism does not depend on the education level of Royalist women relative to Parliamentarian women.

B Filmer most likely would have been critical of Cavendish's ideas, had he encountered them, but the passage does not indicate that Gallagher's argument had anything to do with whether Filmer read Cavendish's writings.

C **Correct.** Gallagher uses Cavendish's work to explain how Royalism gave rise to feminism, but if Cavendish's views were completely atypical of other Royalist women, then those views cannot explain the link as Gallagher suggests they do.

D The passage states in the first paragraph that if the Royalists and Parliamentarians were in agreement *on issues of family organization and women's political rights*, then feminists should have been divided between the two sides—but they were not. So this idea, if true, would undermine that statement, but not Gallagher's argument about the link between Royalists and feminists.

E If more Royalists were opposed to Filmer's radical patriarchalism, then Cavendish's writings would seem to be more representative of tendencies in Royalist ideology, thus making Gallagher's case stronger, not weaker.

The correct answer is C.

Questions 499–503 refer to the passage on page 406.

499. The passage is primarily concerned with

(A) identifying two practices in medical research that may affect the accuracy of clinical trials

(B) describing aspects of medical research that tend to drive up costs

(C) evaluating an analysis of certain shortcomings of current medical research practices

(D) describing proposed changes to the ways in which clinical trials are conducted

(E) explaining how medical researchers have traditionally conducted clinical trials and how such trials are likely to change

Main idea

This question requires an understanding of what the passage as a whole is doing. The passage introduces Frazier and Mosteller as proposing changes to the ways clinical trials in medical research are currently conducted. The rest of the passage then describes these proposed changes together with the support Frazier and Mosteller provide for adopting these changes.

A The passage identifies practices in medical research to help illustrate the basis for Frazier and Mosteller's proposed changes.

B The passage mentions medical research costs as one example within the larger description of Frazier and Mosteller's proposed changes.

C The passage is not concerned with evaluating Frazier and Mosteller's proposed changes.

D **Correct.** The passage describes the changes proposed by Frazier and Mosteller to the way clinical trials are conducted.

E The passage is not concerned with establishing the likelihood of any changes to the way medical research is conducted.

The correct answer is D.

500. Which of the following can be inferred from the passage about a study of the category of patients referred to in lines 20–22 ?

(A) Its findings might have limited applicability.
(B) It would be prohibitively expensive in its attempt to create ideal conditions.
(C) It would be the best way to sample the total population of potential patients.
(D) It would allow researchers to limit information collection without increasing the risk that important variables could be overlooked.
(E) Its findings would be more accurate if it concerned treatments for a progressive disease than if it concerned treatments for a nonprogressive disease.

Inference

This question requires drawing an inference from information given in the passage. In describing the proposals put forth by Frazier and Mosteller, the passage states in lines 15–20 that they propose using more patients in clinical trials than are currently being used, and that the trials would thereby obtain *a more representative sample of the total population with the disease under study*. The passage then states that researchers often *restrict* (lines 20–22) their trials to certain types of patients, therefore limiting the applicability of their findings.

A **Correct.** The passage states that the researchers preferred to restrict the types of patients used in their studies, thereby using a less representative sample than if they used a more inclusive group of patients.
B The passage mentions the added expense of clinical trials only in relation to data storage, collection, and analysis.
C The passage describes the category of patients referred to as restricted and therefore unrepresentative of the total population.
D While the passage does mention the amount of data collected about an individual patient, that topic is not connected to the category of patients referred to in lines 20–22.
E The passage does not suggest that a study using the category of patients referred to would be more effective in investigating progressive diseases.

The correct answer is A.

501. It can be inferred from the passage that a study limited to patients like those mentioned in lines 20–22 would have which of the following advantages over the kind of study proposed by Frazier and Mosteller?

(A) It would yield more data and its findings would be more accurate.
(B) It would cost less in the long term, though it would be more expensive in its initial stages.
(C) It would limit the number of variables researchers would need to consider when evaluating the treatment under study.
(D) It would help researchers to identify subgroups of patients with secondary conditions that might also be treatable.
(E) It would enable researchers to assess the value of an experimental treatment for the average patient.

Inference

This question requires understanding what the information in the passage implies. The passage explains that Frazier and Mosteller's proposal involves enrolling more patients in clinical trials (lines 18–19) than is the case with the category of patients referred to. The passage then explains that broadening the range of trial participants would allow an evaluation of particular treatments *under various conditions* and *for different patient subgroups* (line 29). This strongly suggests that limiting the patients used to those described in the referred text would limit the number of variables researchers would need to consider.

A The passage suggests that not limiting the patients used in clinical trials will yield more data than restricting them will.
B The passage refers to the costs of clinical trials only as they concern the collection, storage, and analysis of data collected from participants.
C **Correct.** By limiting the patients used to those having the ailment under study, the passage suggests that researchers need to consider fewer variables in their assessment of a treatment.
D The passage suggests that ***not*** limiting the types of patients used in clinical trials will better allow researchers to evaluate subgroups.
E The passage suggests that limiting the types of patients available for clinical trials results in data for specific, rather than average, populations.

The correct answer is C.

502. The author mentions patients' ages (line 32) primarily in order to

(A) identify the most critical variable differentiating subgroups of patients
(B) cast doubt on the advisability of implementing Frazier and Mosteller's proposals about medical research
(C) indicate why progressive diseases may require different treatments at different stages
(D) illustrate a point about the value of enrolling a wide range of patients in clinical trials
(E) substantiate an argument about the problems inherent in enrolling large numbers of patients in clinical trials

Evaluation

Answering this question requires understanding how a particular piece of information functions in the passage as a whole. The passage is concerned with describing the proposals of Frazier and Mosteller. One of these proposals, described in the second paragraph, involves broadening the range of participants used in clinical trials. The passage states that in following this proposal, Frazier and Mosteller suggest that the effectiveness of treatments can be assessed for different patient subgroups. To affirm the value of broadening the range of participants, the passage then cites two examples of criteria by which relevant subgroups might be identified: disease stages and patients' ages.

A The passage makes no judgment as to the value of the subgroups it refers to in relation to broadened participation in clinical trials.
B The passage does not call into question the potential effectiveness of Frazier and Mosteller's proposals.
C The passage's example of patients' ages is not intended to be causally connected to its previous example regarding progressive diseases.
D **Correct.** Patients' ages are referred to in the passage to identify subgroups that could be evaluated if the range of participants in clinical trials were broadened.
E The passage refers to patients' ages in support of Frazier and Mosteller's proposal that more patients be used in clinical trials.

The correct answer is D.

503. According to the passage, which of the following describes a result of the way in which researchers generally conduct clinical trials?

(A) They expend resources on the storage of information likely to be irrelevant to the study they are conducting.
(B) They sometimes compromise the accuracy of their findings by collecting and analyzing more information than is strictly required for their trials.
(C) They avoid the risk of overlooking variables that might affect their findings, even though doing so raises their research costs.
(D) Because they attempt to analyze too much information, they overlook facts that could emerge as relevant to their studies.
(E) In order to approximate the conditions typical of medical treatment, they base their methods of information collection on those used by hospitals.

Supporting ideas

This question asks for an identification of specific information given in the passage. The passage describes the proposals of Frazier and Mosteller as attempting to improve the way clinical trials have generally been conducted. In describing how current trials are generally conducted, the passage states that researchers *collect far more background information on patients than is strictly required for their trials* (lines 4–6) and that they therefore escalate the costs of the trials.

A **Correct.** The passage states that researchers generally collect more information than they need to perform their clinical trials, which drives up the costs of the trials.
B The passage makes no judgment about the accuracy of the information collected by researchers who currently hold clinical trials.
C The passage states that the risk of overlooking relevant information in clinical trials is *never entirely eliminable* (line 11).
D The passage states that researchers generally collect more information than is relevant, not that they overlook relevant information.
E The passage states that, in general, researchers currently collect more information than hospitals do (line 6).

The correct answer is A.

Questions 504–509 refer to the passage on page 408.

504. The primary purpose of the passage is to

(A) assess the validity of a certain view
(B) distinguish between two phenomena
(C) identify the causes of a problem
(D) describe a disturbing trend
(E) allay concern about a particular phenomenon

Main idea

This question requires understanding, in general terms, the purpose of the passage as a whole. The first paragraph identifies an area of concern: declines in amphibian populations may constitute a crisis, one that indicates humans' catastrophic effects on the environment. The rest of the passage then goes on to evaluate, as the second paragraph states, whether claims of crisis-level extinctions as a result of human activity are valid. In making this evaluation, the passage discusses the possible causes of extinctions, biologists' prioritization of population declines over extinctions, and the fact that we lack extensive long-term data on amphibian populations.

A **Correct.** The passage's main purpose is to assess whether the view that humans are causing crisis-level declines in amphibian populations is valid.

B The passage takes care, particularly in the third paragraph, to distinguish between population declines and extinctions, but this is not its primary purpose.

C The passage makes clear that it is difficult to identify the real extent of the problem facing amphibian populations, much less identify its causes.

D The first paragraph notes what may seem to be a disturbing trend—the decline in amphibian populations—but the rest of the passage is concerned not with describing that trend in greater detail, but rather with determining whether it is in fact occurring.

E While the passage provides possible grounds for concluding that concern about declining amphibian populations is overblown, it concludes by suggesting that we might, because we lack data, doom species and ecosystems to extinction. Thus, the overall purpose is not to allay concern.

The correct answer is A.

505. It can be inferred from the passage that the author believes which of the following to be true of the environmentalists mentioned in lines 5–6 ?

(A) They have wrongly chosen to focus on anecdotal reports rather than on the long-term data that are currently available concerning amphibians.
(B) Their recommendations are flawed because their research focuses too narrowly on a single category of animal species.
(C) Their certainty that population declines in general are caused by environmental degradation is not warranted.
(D) They have drawn premature conclusions concerning a crisis in amphibian populations from recent reports of declines.
(E) They have overestimated the effects of chance events on trends in amphibian populations.

Inference

This question asks about the author's view of the environmentalists mentioned in the first paragraph. These environmentalists have claimed, based on amphibian population declines, that the situation is a crisis and that immediate action must be taken. The author, however, states that the declines are only *apparently* drastic and questions whether they are real, thus suggesting that the environmentalists are drawing conclusions in the absence of a complete consideration of the situation.

A The passage indicates that anecdotal reports are insufficient, but so too are other resources. The fourth paragraph of the passage makes clear that there is not enough long-term data available on which to base conclusions about amphibian populations.

B The passage does not indicate that the environmentalists under discussion have conducted research on any animal species.

C The passage does not indicate that the environmentalists in question hold, with certainty, any particular view regarding population declines in general.

D **Correct.** The author argues that the recent declines may have several different causes, and that environmentalists have jumped to a conclusion about the cause of the declines as well as their significance.

E The environmentalists, in attributing population declines to intentional human activity, have more likely underestimated than overestimated the effects of chance events on amphibian populations.

The correct answer is D.

506. It can be inferred from the passage that the author believes which of the following to be true of the amphibian extinctions that have recently been reported?

(A) They have resulted primarily from human activities causing environmental degradation.

(B) They could probably have been prevented if timely action had been taken to protect the habitats of amphibian species.

(C) They should not come as a surprise, because amphibian populations generally have been declining for a number of years.

(D) They have probably been caused by a combination of chance events.

(E) They do not clearly constitute evidence of general environmental degradation.

Inference

The author suggests throughout the passage that recently reported amphibian extinctions may have several different causes: they may be due to any number of chance events, for example, or may simply be the result of a small population that finds itself unable to continue under difficult conditions, whatever causes those conditions.

A The author states in the second paragraph that extinctions may occur without a proximate cause in human activities and does not make a commitment to any particular explanation of the amphibian extinctions.

B That chance events can cause extinctions suggests that even if habitats had been protected, extinctions still might have occurred.

C In the second paragraph, the author says that extinctions *should come as no great surprise*, but this option is imprecise. The amphibian populations have not generally *been declining for a number of years*. The author says in the third paragraph that amphibian populations show strong fluctuations; further, in the fourth paragraph, the author says that there is insufficient long-term data to conclude that amphibian populations have been, or are, in decline.

D The author suggests that the extinctions may have been caused by chance events, but there is not enough data to know whether or not this is probable.

E **Correct.** The reported extinctions could have resulted from several different causes; thus, they are not clear evidence of general environmental degradation.

The correct answer is E.

507. According to the passage, each of the following is true of endangered amphibian species EXCEPT:

(A) They are among the rarest kinds of amphibians.

(B) They generally have populations that are small in size.

(C) They are in constant danger of extinction.

(D) Those with decreasing populations are the most likely candidates for immediate extinction.

(E) They are in danger of extinction due to events that sometimes have nothing to do with human activities.

Application

This question asks what the passage does not say is true of endangered amphibian species. The second paragraph discusses endangered species, stating that they are *always rare, almost always small, and, by definition, under constant threat of extinction*, which may be caused by chance events. The possibility of their extinction, the passage states, depends only on the population size, and not whether that population is increasing or decreasing.

A The second paragraph mentions rarity as a characteristic of endangered amphibian species.

B According to the second paragraph, endangered amphibian species are generally those of small populations.

C The second paragraph states that an endangered population is under constant threat of extinction.

D **Correct.** The last sentence of the second paragraph states that the probability of extinction due to chance events is independent of how a population changes in size. Immediate extinction would more likely come from such events, whereas population decline is gradual, even if fairly rapid.

E Endangered species, according to the second paragraph, may become extinct due to chance events—that is, events that have nothing to do with human activities.

The correct answer is D.

508. Which of the following most accurately describes the organization of the passage?

(A) A question is raised, a distinction regarding it is made, and the question is answered.

(B) An interpretation is presented, its soundness is examined, and a warning is given.

(C) A situation is described, its consequences are analyzed, and a prediction is made.

(D) Two interpretations of a phenomenon are described, and one of them is rejected as invalid.

(E) Two methods for analyzing a phenomenon are compared, and further study of the phenomenon is recommended.

Evaluation

This question asks about the organization of the passage as a whole. In the first paragraph, the author tells about a situation that has been interpreted in a particular way by environmentalists. The passage then proceeds to consider whether that interpretation is valid, and while it does not come to a definitive conclusion on that point, the final paragraph warns about the possible consequences of not taking the action recommended by the environmentalists.

A The passage does initially raise a question regarding whether the environmentalists' interpretation of events is valid, but it does not answer that question, for the appropriate long-term data are not available.

B **Correct.** The passage presents environmentalists' interpretation of recent news regarding amphibians, then examines the soundness of that interpretation. Finally, the author warns that postponing environmental action may have disastrous consequences.

C The first paragraph describes a situation of possibly drastic declines in amphibian populations but does not follow this description with an analysis of its consequences.

D The passage suggests that apparent declines in amphibian populations may or may not constitute a crisis, but it does not reject either idea.

E While the passage does imply, in its final paragraph, that long-term data on amphibian populations should be collected, the passage does not compare two methods for analyzing amphibian populations or population declines in those populations.

The correct answer is B.

509. Which of the following best describes the function of the sentence in lines 35–38 ?

(A) To give an example of a particular kind of study

(B) To cast doubt on an assertion made in the previous sentence

(C) To raise an objection to a view presented in the first paragraph

(D) To provide support for a view presented in the first paragraph

(E) To introduce an idea that will be countered in the following paragraph

Evaluation

The sentence in question discusses the way in which anecdotal reports of population decreases cannot help biologists determine whether those decreases are normal fluctuations, take populations to lower levels that are not actually worrisome, or actually threaten extinctions. This indicates that the view mentioned in the first paragraph—reports of declines indicate a catastrophic crisis—may be mistaken.

A The sentence does not address a particular kind of study; it objects to the use of anecdotal reports in place of actual study.

B The previous sentence describes the possibilities referred to in the sentence in question. The sentence does not cast doubt on any of those possibilities.

C **Correct.** The view that reports of amphibian population declines indicate a crisis, as presented in the first paragraph, is countered by the objection here that there are several possible causes for population declines, and anecdotal reports cannot distinguish among those possibilities.

D The first paragraph is concerned with articulating the view that amphibian population declines constitute a crisis. This sentence does not support that view; instead, it offers reason to question it.

E The sentence introduces the idea that amphibian populations have fluctuated in the past, and the following paragraph supports this idea by stating that several amphibian species that appeared almost extinct in the 1950s and 1960s have recovered. Thus, the paragraph does not counter the sentence.

The correct answer is C.

Questions 510–513 refer to the passage on page 410.

510. The passage mentions which of the following as a factor that affects the role of *P. ochraceus* as a keystone species within different habitats?

(A) The degree to which the habitat is sheltered from waves

(B) The degree to which other animals within a habitat prey on mussels

(C) The fact that mussel populations are often not dominant within some habitats occupied by *P. ochraceus*

(D) The size of the *P. ochraceus* population within the habitat

(E) The fact that there is great species diversity within some habitats occupied by *P. ochraceus*

Supporting idea

This question depends on recognizing what the passage states about the factors affecting *P. ochraceus*'s role as a keystone species, which is different in different habitats. According to the passage, *P. ochraceus* consumes and suppresses mussel populations in some habitats—specifically, those that are wave-exposed—making it a keystone predator in those habitats. But in wave-sheltered habitats, *P. ochraceus* does not play the same role in suppressing mussel populations.

A **Correct.** The passage clearly states that *P. ochraceus*'s role in wave-exposed habitats differs from its role in wave-sheltered habitats.

B The passage says that the impact of *P. ochraceus* predation on mussels is not strong in wave-sheltered habitats, but this is not—at least not at all sites—because other animals are preying on the mussels; rather, at least at some sites, it is because mussels are controlled by sand burial.

C The passage does not suggest that mussel populations are dominant in any habitats occupied by *P. ochraceus*.

D The size of the *P. ochraceus* population affects the size of the mussel population within wave-exposed habitats, but the passage does not suggest that *P. ochraceus*'s role as a keystone species depends on the size of its population within those habitats.

E The only other species the passage mentions in conjunction with *P. ochraceus* habitats is the mussel; the passage does not address species diversity in these habitats.

The correct answer is A.

511. Which of the following hypothetical experiments most clearly exemplifies the method of identifying species' roles that the author considers problematic?

(A) A population of seals in an Arctic habitat is counted in order to determine whether it is the dominant species in that ecosystem.

(B) A species of fish that is a keystone species in one marine ecosystem is introduced into another marine ecosystem to see whether the species will come to occupy a keystone role.

(C) In order to determine whether a species of monkey is a keystone species within a particular ecosystem, the monkeys are removed from that ecosystem and the ecosystem is then studied.

(D) Different mountain ecosystems are compared to determine how geography affects a particular species' ability to dominate its ecosystem.

(E) In a grassland experiencing a changing climate, patterns of species extinction are traced in order to evaluate the effect of climate changes on keystone species in that grassland.

Application

Answering this question depends on recognizing what the author says about identifying species' roles in habitats and then extending that to another situation. The author considers a particular method of studying keystone species problematic: removing a suspected keystone species from its habitat and observing what happens to the ecosystem. The author finds this problematic because interactions among species are complex.

A The author does not discuss counting the members of a population as a problematic way of determining whether that population is a dominant species.

B The method that the author finds problematic has to do with observing what happens to an ecosystem when a keystone species is removed from it, not with observing what happens to a different ecosystem when the species is introduced into it.

C **Correct.** The author states explicitly that removing a species from a habitat in order to determine its keystone status is problematic. Removing the monkeys from their habitat is a clear example of this problematic practice.

D Comparison of habitats in order to determine geography's effect on a particular species' dominance would most likely find favor with the author, for this is the approach the author seems to advocate in investigating *P. ochraceus*'s keystone status.

E The author does not discuss tracing patterns of extinction or changing climates in the passage.

The correct answer is C.

512. Which of the following, if true, would most clearly support the argument about keystone status advanced in the last sentence of the passage (lines 24–31)?

(A) A species of bat is primarily responsible for keeping insect populations within an ecosystem low, and the size of the insect population in turn affects bird species within that ecosystem.

(B) A species of iguana occupies a keystone role on certain tropical islands, but does not play that role on adjacent tropical islands that are inhabited by a greater number of animal species.

(C) Close observation of a savannah ecosystem reveals that more species occupy keystone roles within that ecosystem than biologists had previously believed.

(D) As a keystone species of bee becomes more abundant, it has a larger effect on the ecosystem it inhabits.

(E) A species of moth that occupies a keystone role in a prairie habitat develops coloration patterns that camouflage it from potential predators.

Evaluation

To answer this question, focus on the argument advanced in the last sentence of the passage and identify what information would support that argument. In the last sentence of the passage, the author claims that keystone status depends on context. The author then offers three contextual factors that may affect a species' keystone status: geography, community diversity (i.e., the number of species in a given habitat), and length of species interaction. Evidence supporting this argument would show that context is important to a species' keystone status.

A This scenario does not indicate anything about keystone status; this is simply a description of how species populations in a single ecosystem affect one another.

B **Correct.** That the iguana is a keystone species in a location that has limited species diversity but not a keystone species in a location that has greater species diversity suggests that keystone status does indeed depend on context. Thus, this example supports the author's argument in the last sentence of the passage.

C That biologists were mistaken about keystone species in a particular ecosystem does not have a bearing on whether keystone status is context dependent.

D It is not surprising that an increase in a species' population would lead to that species having a larger effect on its ecosystem—but this does not speak directly to the question of whether keystone status itself depends on context.

E A keystone species enhancing its ability to survive in a single ecosystem does not lend any support to the idea that keystone status depends on context. The moth's keystone status would have to undergo some change for this to have a bearing on the question of context.

The correct answer is B.

513. The passage suggests which of the following about the identification of a species as a keystone species?

(A) Such an identification depends primarily on the species' relationship to the dominant species.

(B) Such an identification can best be made by removing the species from a particular ecosystem and observing changes that occur in the ecosystem.

(C) Such an identification is likely to be less reliable as an ecosystem becomes less diverse.

(D) Such an identification seems to depend on various factors within the ecosystem.

(E) Such an identification can best be made by observing predation behavior.

Inference

Answering this question requires identifying how the passage suggests that keystone species should be identified. The passage identifies a particular way in which keystone status should *not* be determined: removing a species and observing what happens to the ecosystem. The passage also argues that keystone status depends strongly on context: that is, an ecosystem's characteristics, including its geography and inhabitants, determine its keystone species.

A While the passage uses an example of a keystone species, *P. ochraceus*, which preys on a species that would, in the keystone species' absence, be dominant, there is nothing to suggest that a keystone species *must* have a particular relationship with the dominant, or potentially dominant, species in an ecosystem.

B The passage explicitly states that this method of identification would be problematic.

C A reduction in an ecosystem's diversity might alter which species occupy keystone roles in that ecosystem, the passage suggests, but there is no indication that identifying such species would become more difficult.

D **Correct.** If, as the passage suggests, keystone status for any given species depends on the context of the ecosystem in which it lives, then it is likely that identifying keystone species depends strongly on understanding what factors of the ecosystem contribute to creating keystone status. The passage lists such factors as geography, community diversity, and species interaction.

E While the passage uses a predator, *P. ochraceus*, as its example of a keystone species, there is no indication that predation is an essential component of the actual definition of keystone species (*one whose effects are much larger than would be predicted from its abundance*).

The correct answer is D.

Questions 514–516 refer to the passage on page 412.

514. According to the passage, the anatomical evidence provided by the preserved soft bodies of conodonts led scientists to conclude that

(A) conodonts had actually been invertebrate carnivores

(B) conodonts' teeth were adapted from protective bony scales

(C) conodonts were primitive vertebrate suspension feeders

(D) primitive vertebrates with teeth appeared earlier than armored vertebrates

(E) scientists' original observations concerning the phosphatic remains of conodonts were essentially correct

Supporting ideas

This question depends on understanding how a particular type of evidence—the preserved soft bodies of conodonts—supports a particular conclusion stated in the passage. The third paragraph makes this relationship explicit, explaining that certain features of conodonts show them to be more primitive than other vertebrates. Further, those features indicate that they came before ostracoderms and other armored jawless fishes. These remains support the conclusion stated in the second paragraph regarding teeth being more primitive than external armor.

A The passage states explicitly that conodonts were not invertebrates but rather vertebrates.

B This view is attributed to certain traditionalists but is contradicted by other paleontological evidence presented in the second and third paragraphs. According to the third paragraph, the evidence provided by the preserved soft bodies of conodonts undermines this traditional view.

C The final sentence of the passage indicates that the evidence in question supports the conclusion that conodonts were predators rather than suspension feeders.

D **Correct.** The third paragraph explains how conodonts' remains support the conclusion that teeth were more primitive than external armor.

E The second paragraph explains that originally, scientists thought that early vertebrates were not predators—but the remainder of the passage indicates that this idea is inconsistent with more recent evidence described in the passage.

The correct answer is D.

515. The second paragraph in the passage serves primarily to

(A) outline the significance of the 1981 discovery of conodont remains to the debate concerning the development of the vertebrate skeleton

(B) contrast the traditional view of the development of the vertebrate skeleton with a view derived from the 1981 discovery of conodont remains

(C) contrast the characteristics of the ostracoderms with the characteristics of earlier soft-bodied vertebrates

(D) explain the importance of the development of teeth among the earliest vertebrate predators

(E) present the two sides of the debate concerning the development of the vertebrate skeleton

Evaluation

This question depends on understanding the second paragraph in the context of the passage as a whole. The second paragraph begins by noting the traditional view of the vertebrate skeleton—that it was a defense against predators—and then goes on to explain that other paleontologists argued against this idea, claiming instead that vertebrates began as predators and that teeth were a more primary feature than external armor.

A The second paragraph focuses on describing the debate rather than on the distinctive contribution of the 1981 discovery to that debate.

B The second paragraph does not explicitly indicate whether the opposition to the traditional view originally rested on the 1981 discovery of conodont remains. In fact, the surrounding discussion, in the first and third paragraphs, suggests that the discovery in 1981 turned out to support the opposing view, which some paleontologists already held at that time.

C The mention of ostracoderms in the second paragraph merely serves to indicate how the traditionalists' arguments might have seemed plausible. The paragraph as a whole is not devoted to contrasting the ostracoderms with earlier soft-bodied vertebrates.

D The development of teeth figures in the second paragraph, but this development is mentioned first as a feature that some believed to have been adapted from protective scales; only the final sentence of the paragraph connects teeth to early vertebrate predators.

E **Correct.** According to the passage, the debate concerning the development of the vertebrate skeleton hinges on whether vertebrates began as predators, with teeth, or whether skeletal defenses such as external armor evolved first. The primary purpose of the second paragraph is to distinguish these two sides.

The correct answer is E.

516. It can be inferred that on the basis of the 1981 discovery of conodont remains, paleontologists could draw which of the following conclusions?

(A) The earliest vertebrates were sedentary suspension feeders.

(B) Ostracoderms were not the earliest vertebrates.

(C) Defensive armor preceded jaws among vertebrates.

(D) Paired eyes and adaptations for activity are definitive characteristics of vertebrates.

(E) Conodonts were unlikely to have been predators.

Inference

What could paleontologists conclude, based on the 1981 discovery of conodont remains? That discovery, according to the passage, supported the view of certain paleontologists that the earliest vertebrates were predators with teeth—unlike the ostracoderms, which had no jaws.

A According to the second paragraph, traditionalists believed that early vertebrates were sedentary suspension feeders. But the 1981 discovery supported instead the hypothesis that early vertebrates were predators instead.

B **Correct.** According to the third paragraph, the conodonts' body structures indicated that they were more primitive than the ostracoderms, so the ostracoderms must not have been the earliest vertebrates.

C Traditionalists argued that teeth were adapted from bony scales that provided defensive armor, but the 1981 discovery suggested that teeth preceded such scales.

D Paleontologists knew prior to the 1981 discovery that paired eyes and other adaptations are characteristics of vertebrates. They used this knowledge to help them interpret the 1981 discovery.

E The third paragraph indicates that conodonts, given their teeth, were most likely predators.

The correct answer is B.

Questions 517–528 refer to the passage on page 414.

517. The primary purpose of the passage is to

(A) advocate a more positive attitude toward technological change

(B) discuss the implications for employees of the modernization of a telephone exchange

(C) consider a successful challenge to the constructivist view of technological change

(D) challenge the position of advocates of technological determinism

(E) suggest that the social causes of technological change should be studied in real situations

Main idea

This question asks for an assessment of what the passage as a whole is doing. The passage introduces Clark's study as a *solid contribution* (line 3) to the debate between technological determinists and social constructivists. In the second paragraph, Braverman is introduced as holding a position of social constructivism, a position that Clark takes issue with. In the final paragraph, the passage holds that *Clark refutes the extremes of the constructivists* (line 31), and Clark's arguments challenging social constructivism are then described.

A The passage takes no position on the merits of technological change but is concerned only with the role of such change in society.

B The passage mentions telephone exchange workers as an example that helps illustrate the more central debate between determinists and constructivists.

C **Correct.** The passage is mainly concerned with portraying Clark's view as a successful challenge to constructivism.

D The passage describes Clark's view as a successful challenge to social constructivism, not technological determinism.

E The passage is concerned with describing a challenge to social constructivism and not with suggesting the context in which technological change ought to be studied.

The correct answer is C.

518. Which of the following statements about the modernization of the telephone exchange is supported by information in the passage?

(A) The new technology reduced the role of managers in labor negotiations.

(B) The modernization was implemented without the consent of the employees directly affected by it.

(C) The modernization had an impact that went significantly beyond maintenance routines.

(D) Some of the maintenance workers felt victimized by the new technology.

(E) The modernization gave credence to the view of advocates of social constructivism.

Supporting ideas

This question requires recognizing information contained in the passage. The passage states in the first paragraph that Clark's study focused on the modernization of a telephone exchange and the effect this had on maintenance work and workers. After describing Braverman's analysis in the second paragraph as being at odds with Clark's views, the passage discusses Clark's views in more detail in the final paragraph. As part of this discussion, the passage notes that Clark shows how a change from *maintenance-intensive electromechanical switches to semielectronic switching systems* at the telephone exchange *altered work tasks,* *skills, training opportunities, administration, and organization of workers* (lines 42–44). Thus, the passage shows that the modernization of the telephone exchange affected much more than maintenance routines.

- A The passage does not discuss whether new technology reduces the role of managers in labor negotiations.
- B The passage does not discuss the role of employee consent in the modernization of the telephone exchange.
- **C** **Correct.** The passage states that the modernization of the telephone exchange affected tasks, skills, training, administration, and the organization of workers.
- D The passage does not suggest that maintenance workers felt victimized by the modernization of the telephone exchange.
- E The passage describes modernization as a fact viewable from a perspective of social constructivism or technological determinism, but that does not in itself support either view.

The correct answer is C.

519. Which of the following most accurately describes Clark's opinion of Braverman's position?

(A) He respects its wide-ranging popularity.

(B) He disapproves of its misplaced emphasis on the influence of managers.

(C) He admires the consideration it gives to the attitudes of the workers affected.

(D) He is concerned about its potential to impede the implementation of new technologies.

(E) He is sympathetic to its concern about the impact of modern technology on workers.

Inference

Answering this question requires inferring what the passage's author likely believes. The passage describes Braverman's position as one of mainstream social constructivism (lines 23–24), a position that Clark takes issue with. Although it describes Braverman's position, the rest of the passage is devoted to showing how Clark's position takes issue with Braverman's.

In the second paragraph, the passage describes Clark as holding that *technology can be a primary determinant of social and managerial organization* (lines 9–11), which suggests that managers are sometimes subordinate to technological change. In lines 15–17, however, Braverman is described as holding that *the shape of a technological system is subordinate to the manager's desire to wrest control of the labor process from the workers*, which shows that Clark and Braverman are at odds on this point.

- A Since the passage says that Clark believes an important insight *has been obscured by the recent sociological fashion* that Braverman's views exemplify (lines 11–14), one cannot infer that Clark respects the popularity of Braverman's views.
- **B** **Correct.** The passage shows that Clark believes managers to have less influence over how technology affects an organization than Braverman claims that they have.
- C The passage does not indicate that Clark admires any aspect of Braverman's position.
- D The passage does not indicate that Clark considers impediments to modernization.
- E The passage does not indicate that Clark is sympathetic to any concerns attributed to Braverman.

The correct answer is B.

520. The information in the passage suggests that which of the following statements from hypothetical sociological studies of change in industry most clearly exemplifies the social constructivists' version of technological determinism?

(A) It is the available technology that determines workers' skills, rather than workers' skills influencing the application of technology.

(B) All progress in industrial technology grows out of a continuing negotiation between technological possibility and human need.

(C) Some organizational change is caused by people; some is caused by computer chips.

(D) Most major technological advances in industry have been generated through research and development.

(E) Some industrial technology eliminates jobs, but educated workers can create whole new skills areas by the adaptation of the technology.

Application

This question requires understanding different points of view discussed in the passage. In the first paragraph, the passage mentions the debate involving technological determinism and social constructivism. In the second and third paragraphs, the passage uses Braverman's analysis to illustrate the social constructivists' position and in the third paragraph suggests that the constructivists are *misrepresenting technological determinism* (line 24). In lines 29–30, the constructivists are reported to hold that technological determinism views technology as *existing outside society, capable of directly influencing skills and work organization.*

A **Correct.** This statement is consistent with the constructivists' view that technological determinism sees technology as outside of society, influencing workers' skills.

B The passage states that the constructivists hold that *technological determinists are supposed to believe . . . that machinery imposes appropriate forms of order on society* (lines 25–27), suggesting that no negotiation is present.

C According to the description of them in the passage, constructivists portray technological determinists as believing that technology, not people, drives organizational change.

D The passage does not portray either constructivists or determinists as being concerned with technological research and development.

E The passage does not portray either constructivists or determinists as being concerned with technology-driven job elimination or creation.

The correct answer is A.

521. The information in the passage suggests that Clark believes that which of the following would be true if social constructivism had not gained widespread acceptance?

(A) Businesses would be more likely to modernize without considering the social consequences of their actions.

(B) There would be greater understanding of the role played by technology in producing social change.

(C) Businesses would be less likely to understand the attitudes of employees affected by modernization.

(D) Modernization would have occurred at a slower rate.

(E) Technology would have played a greater part in determining the role of business in society.

Inference

Answering this question involves understanding a point of view as it is described in the passage. The passage aligns Clark's study closely with the technological determinists, summarizing his view in lines 9–11: *technology can be a primary determinant of social and managerial organization*. In the following sentence, the passage states that Clark believes that *this possibility is obscured by the recent sociological fashion, exemplified by Braverman's analysis* (lines 11–13). After illustrating Braverman's analysis, the passage then states that it represents *social constructivism*.

A According to the passage, Clark holds that constructivists obscure how modernization might have social consequences.

B **Correct.** According to the passage, Clark sees constructivism as obscuring the possibility that technology plays a primary role in social change.

C The passage does not discuss how the attitudes of employees are perceived by their employers.

D The passage describes a debate about the history and sociology of technology; it does not suggest that sociological analyses affect the pace of modernization.

E The passage describes a debate about the history and sociology of technology; it does not suggest that sociological analyses affect the role that technology plays in business.

The correct answer is B.

522. According to the passage, constructivists employed which of the following to promote their argument?

(A) Empirical studies of business situations involving technological change
(B) Citation of managers supportive of their position
(C) Construction of hypothetical situations that support their view
(D) Contrasts of their view with a misstatement of an opposing view
(E) Descriptions of the breadth of impact of technological change

Supporting ideas

Answering this question involves recognizing information given in the passage. The passage indicates that a debate exists between technological determinists and social constructivists, suggesting that these views are in opposition. The passage goes on to state that *constructivists gain acceptance by misrepresenting technological determinism* (lines 23–24). This misrepresentation is presented as the *alternative to constructivism* (lines 27–28), suggesting that constructivists promoted their own view by contrasting it with a misrepresentation of determinists' views.

A The passage mentions empirical studies in relation to Clark's study but not Braverman's analysis.
B The passage does not mention that managers were supportive of any particular point of view within the sociology of technology.
C The passage does not mention any hypothetical situations as being used by the constructivists in support of their view.
D **Correct.** The passage indicates that the constructivists have come into fashion by contrasting their own views with a misrepresentation of the views of technological determinists.
E The passage does not describe the constructivists as making determinations regarding the degree of impact that technological change has on social or managerial organization.

The correct answer is D.

523. The author of the passage uses the expression "are supposed to" in line 25 primarily in order to

(A) suggest that a contention made by constructivists regarding determinists is inaccurate
(B) define the generally accepted position of determinists regarding the implementation of technology
(C) engage in speculation about the motivation of determinists
(D) lend support to a comment critical of the position of determinists
(E) contrast the historical position of determinists with their position regarding the exchange modernization

Evaluation

This question requires understanding how a particular phrase functions in the passage as a whole. In the third paragraph the passage states that *constructivists gain acceptance by misrepresenting technological determinism* (lines 23–24) and follows this claim with an example of this misrepresentation, stating that *technological determinists are supposed to believe, for example* (lines 25–26). This line implies that the constructivist view of the determinists is inaccurate.

A **Correct.** The passage uses the expression in part to provide an example of the constructivists' misrepresentation of the determinists.
B The passage indicates that the view attributed to the determinists is a misrepresentation, not one that is generally accepted by determinists.
C The expression in the passage is part of a discussion about the motivation of constructivists, not determinists.
D The expression in the passage is part of a discussion that is critical of the constructivists, not the determinists.
E The passage does not describe either the historical position of determinists or their position on the exchange modernization.

The correct answer is A.

524. Which of the following statements about Clark's study of the telephone exchange can be inferred from information in the passage?

(A) Clark's reason for undertaking the study was to undermine Braverman's analysis of the function of technology.
(B) Clark's study suggests that the implementation of technology should be discussed in the context of conflict between labor and management.
(C) Clark examined the impact of changes in the technology of switching at the exchange in terms of overall operations and organization.
(D) Clark concluded that the implementation of new switching technology was equally beneficial to management and labor.
(E) Clark's analysis of the change in switching systems applies only narrowly to the situation at the particular exchange that he studied.

Inference

This question requires understanding what the passage implies in its discussion of a point of view. The details of Clark's views are discussed primarily in the final paragraph. The passage states that on an empirical level, Clark demonstrates that technological change regarding switches at the telephone exchange *altered work tasks, skills, training opportunities, administration, and organization of workers* (lines 42–44). The passage goes on to state Clark's contention that these changes even influenced negotiations between management and labor unions.

A The passage indicates that Clark's study addressed the extremes of both technological determinism and social constructivism. It cites Braverman as a proponent of social constructivism but provides no evidence that Clark's motivation in beginning his study was specifically to target an analysis offered by Braverman.

B The passage indicates that Clark attributed some organizational change to the way labor and management negotiated the introduction of technology but does not mention conflict between them.

C **Correct.** According to the passage, Clark concludes that changes to the technology of switches had an influence on several aspects of the overall operations and organization of the telephone exchange.

D The passage does not indicate that Clark assesses the benefits of technological change to either labor or management.

E The passage indicates that Clark believes the change in switching technology influenced many aspects of the overall operations of the telephone exchange.

The correct answer is C.

Questions 525–529 refer to the passage on page 416.

525. The passage implies that which of the following was a reason that the proportion of verdicts in favor of patentees began to increase in the 1830s ?

(A) Patent applications approved after 1836 were more likely to adhere closely to patent law.
(B) Patent laws enacted during the 1830s better defined patent rights.
(C) Judges became less prejudiced against patentees during the 1830s.
(D) After 1836, litigated cases became less representative of the population of patent disputes.
(E) The proportion of patent disputes brought to trial began to increase after 1836.

Inference

The question asks which statement can be reasonably inferred, from information provided in the passage, to be a reason for the increase in proportion of verdicts favoring patentees, starting in the 1830s. The second paragraph argues that what changed in that decade was not judges' attitudes toward patent law, but the types of patent cases that were litigated. It explains that a law passed in 1836 required that, for the first time in U.S. history, applications for patents had to be examined for their adherence to patent law before a patent would be issued. This information implies that patents granted after 1836 were more likely to adhere to patent law and were thus more likely to be upheld in court.

A **Correct**. The passage implies that patents granted after the 1836 law went into effect were more likely to adhere to patent law.

B The passage does not indicate that any law mentioned made changes to the definition of patent rights; rather, the passage indicates that the patent system was revised to require that patent applications be reviewed for adherence to existing law.

C The passage rejects the explanation that judges' attitudes toward patent rights became more favorable.

D The passage indicates that the population of disputes that were litigated changed after 1836, but it does not suggest that the population of litigated disputes differed from that of patent disputes as a whole.

E The passage does not indicate any change in the proportion of patent disputes brought to trial.

The correct answer is A.

526. The passage implies that the scholars mentioned in line 8 would agree with which of the following criticisms of the American patent system before 1830?

(A) Its definition of property rights relating to inventions was too vague to be useful.

(B) Its criteria for the granting of patents were not clear.

(C) It made it excessively difficult for inventors to receive patents.

(D) It led to excessive numbers of patent-infringement suits.

(E) It failed to encourage national economic growth.

Inference

This question asks about a statement implied by the passage. The scholars mentioned in line 8 question whether U.S. patent law achieved its goal. That goal is described in the first sentence of the passage: to encourage America's economic growth. Thus, it is reasonable to conclude that the scholars would criticize the pre-1830 patent system for failing to encourage economic growth.

A The scholars contend that judges rejected patents for arbitrary reasons, not because the definition of property rights was vague.

B The passage does not indicate that the scholars were critical of the criteria for granting patents.

C The scholars are concerned with inventors' attempts to protect their patents, not the difficulty of acquiring a patent in the first place.

D The passage does not imply that the scholars in question believed that too many patent-infringement suits were brought to court, but rather that too few succeeded.

E **Correct.** The scholars doubt that patent law helped to achieve its goal, which was to encourage economic growth.

The correct answer is E.

527. It can be inferred from the passage that the frequency with which pre-1830 cases have been cited in court decisions is an indication that

(A) judicial support for patent rights was strongest in the period before 1830

(B) judicial support for patent rights did not increase after 1830

(C) courts have returned to judicial standards that prevailed before 1830

(D) verdicts favoring patentees in patent-infringement suits did not increase after 1830

(E) judicial bias against patentees persisted after 1830

Inference

The question asks what is indicated by the frequency with which pre-1830 cases have been cited in court decisions. The second paragraph rejects some scholars' claims that judges prior to the 1830s were *antipatent*, while judges after that time were more accepting of patent rights. The passage supports its critique by pointing out that decisions made by judges before the 1830s have been cited as precedents by later judges just as frequently as post-1830s decisions have been. This implies that later judges' attitudes toward patent rights were similar to those of pre-1830s judges. Thus, there is no reason to believe judges' attitudes toward patent rights changed at that time.

A The passage argues that judicial support for patents did not change in the 1830s.
B **Correct**. Pre-1830s court decisions have been cited as frequently as later decisions, suggesting no change in judges' attitudes.
C The passage does not indicate that judicial standards changed from, and then returned to, those that prevailed before 1830.
D Although actual numbers of favorable verdicts are not mentioned, the passage indicates that the proportion of verdicts decided in favor of patentees did, in fact, increase beginning in the 1830s.
E The passage rejects the notion that judges were biased against patentees either before or after 1830.

The correct answer is B.

528. It can be inferred from the passage that the author and the scholars referred to in line 21 disagree about which of the following aspects of the patents defended in patent-infringement suits before 1830?

(A) Whether the patents were granted for inventions that were genuinely useful
(B) Whether the patents were actually relevant to the growth of the United States economy
(C) Whether the patents were particularly likely to be annulled by judges
(D) Whether the patents were routinely invalidated for reasons that were arbitrary
(E) Whether the patents were vindicated at a significantly lower rate than patents in later suits

Inference

The question depends on recognizing differences between two explanations—one favored by the scholars mentioned in line 21, the other favored by the author—for the frequency with which patents were invalidated in U.S. courts prior to 1830. The first paragraph describes the scholars' view that judges before 1830 were *antipatent* and rejected patentees' claims for *arbitrary reasons*. The author of the passage rejects that view. As an alternate explanation, the author in the second paragraph implies that earlier patents often violated copyright law; this view is supported with reference to an 1836 revision to the patent system which instituted a procedure by which patent applications were inspected to ensure adherence to patent law.

A The author and the scholars are both focused on protecting inventors' property rights, not with their inventions' utility.
B Although the passage suggests that the scholars thought America's patent system did not help encourage economic growth, there is no suggestion that either the scholars or the author believes actual patents defended in court were irrelevant to economic growth.
C Both the scholars and the author believe that patents defended in court prior to 1830 were more likely to be invalidated than were patents in later legal disputes.
D **Correct.** The scholars claim that judges before 1830 decided against patentees for arbitrary reasons, but the passage suggests that the patents may have been invalidated because they failed to adhere to patent law.
E Both the scholars and the author accept that patents were upheld in court less often before 1830 than after.

The correct answer is D.

529. The author of the passage cites which of the following as evidence challenging the argument referred to in lines 14–15 ?

(A) The proportion of cases that were decided against patentees in the 1820s
(B) The total number of patent disputes that were litigated from 1794 to 1830
(C) The fact that later courts drew upon the legal precedents set in pre-1830 patent cases
(D) The fact that the proportion of judicial decisions in favor of patentees began to increase during the 1830s
(E) The constitutional rationale for the 1836 revision of the patent system

Supporting idea

The question asks what evidence the author brings to bear against the argument referred to in lines 14–15. In the first paragraph, the author summarizes scholars' arguments to the conclusion that judges' attitudes toward patent rights shifted in the 1830s, based on the fact that judges earlier had routinely ruled against patentees in lawsuits whereas judges after that time provided more protection for patent rights. In the second paragraph the author challenges the claim that judges' attitudes shifted. The author provides evidence that judges after the 1830s cited legal precedents set in pre-1830s cases, suggesting that their views had not changed.

A The proportion of cases decided against patentees in the 1920s is cited as evidence that supports the scholars' argument in the first paragraph, not as evidence challenging their views.
B The total number of disputes litigated is not mentioned in the passage.
C **Correct.** The fact that judges after 1830 cited earlier cases as precedents is used as evidence to challenge scholars' claims that judges' attitudes shifted around 1830.
D The change in the proportion of decisions in favor of patentees is a fact that both the scholars and the author of the passage attempt to explain.
E No constitutional rationale for the 1836 law is mentioned in the passage.

The correct answer is C.

Questions 530–536 refer to the passage on page 418.

530. The author of the passage discusses Krontiris primarily to provide an example of a writer who

(A) is highly critical of the writings of certain Renaissance women
(B) supports Kelly's view of women's status during the Renaissance
(C) has misinterpreted the works of certain Renaissance women
(D) has rejected the views of both Burckhardt and Kelly
(E) has studied Renaissance women in a wide variety of social and religious contexts

Evaluation

This question focuses on the author's reason for mentioning Krontiris's work. The passage states that Krontiris, in her discussion of six Renaissance women writers, is an example of scholars who are optimistic about women's achievements but also suggest that these women faced significant obstacles. She is a writer who, in other words, agrees with neither Kelly's negative views nor Burckhardt's positive approach.

A The passage indicates that Krontiris uses the Renaissance women writers' works as historical evidence, not that she offered any criticism of the works themselves.
B Krontiris's work, according to the author, is cautiously optimistic about women's achievements during the Renaissance. This contradicts Kelly's view that the status of women declined during this time.
C The author suggests that Krontiris may have erred in taking her six subjects as representative of all women during the Renaissance, not that she made any misinterpretations of their actual writing.
D **Correct.** The author uses Krontiris as an example of those feminist scholars who have rejected the overgeneralized approaches of both Kelly and Burckhardt.
E The author makes clear that Krontiris's study focuses on literate Renaissance women, who constituted a small minority.

The correct answer is D.

531. According to the passage, Krontiris's work differs from that of the scholars mentioned in line 12 in which of the following ways?

(A) Krontiris's work stresses the achievements of Renaissance women rather than the obstacles to their success.
(B) Krontiris's work is based on a reinterpretation of the work of earlier scholars.
(C) Krontiris's views are at odds with those of both Kelly and Burkhardt.
(D) Krontiris's work focuses on the place of women in Renaissance society.
(E) Krontiris's views are based exclusively on the study of a privileged group of women.

Supporting idea

This question asks what the passage directly states about the difference between Krontiris's work and the feminist scholars mentioned in the first paragraph. The feminist scholars mentioned in the first paragraph explore differences among Renaissance women, particularly their social status and religion, and thus complicate Burckhardt's and Kelly's generalizations. Krontiris's work, on the other hand, focuses on Renaissance women writers, who are a distinctly privileged and small social group.

A The second paragraph makes clear that Krontiris addresses the obstacles faced by Renaissance women.

B The passage does not suggest that Krontiris is reinterpreting or drawing on reinterpretations of the work of earlier scholars.

C The second paragraph shows that Krontiris's work does complicate both Burckhardt's and Kelly's views, but in this, she is in agreement with the feminist scholars mentioned in the first paragraph.

D Both Krontiris and the feminist scholars mentioned in the first paragraph are concerned with the place of women in Renaissance society.

E **Correct.** The feminist scholars mentioned in the first paragraph are concerned with women of different social classes and religions, whereas Krontiris's work focuses on a limited social group.

The correct answer is E.

532. According to the passage, feminist scholars cite Burckhardt's view of Renaissance women primarily for which of the following reasons?

(A) Burckhardt's view forms the basis for most arguments refuting Kelly's point of view.

(B) Burckhardt's view has been discredited by Kelly.

(C) Burckhardt's view is one that many feminist scholars wish to refute.

(D) Burckhardt's work provides rich historical evidence of inequality between Renaissance women and men.

(E) Burckhardt's work includes historical research supporting the arguments of the feminist scholars.

Supporting idea

This question asks what the passage says explicitly about why feminist scholars reference Burckhardt's view of Renaissance women. The first paragraph states that Burckhardt's view is that Renaissance women enjoyed *perfect equality* with men, and then follows that by noting how feminist scholars have *repeatedly cited* this view to contrast it with extensive evidence of women's inequality during the Renaissance.

A The passage does not indicate that any feminist scholars cite Burckhardt to refute Kelly's view. It uses Krontiris as an example of scholars who refute Kelly's point of view to a certain degree, but Krontiris does not use Burckhardt's view as her basis for doing so; Krontiris argues against Burckhardt as well.

B According to the first paragraph, Kelly's work was in certain ways inconsistent with Burckhardt's view, but that is not a reason why Burckhardt's view is cited by feminist scholars. Rather, according to the passage, they cite it in order to argue against it.

C **Correct.** Many feminist scholars wish to refute Burckhardt's view that Renaissance women and men were equal.

D As the first paragraph makes clear, Burckhardt's work emphasizes equality, not inequality, between Renaissance women and men.

E The passage does not discuss the historical research on which Burckhardt based his work.

The correct answer is C.

533. It can be inferred that both Burckhardt and Kelly have been criticized by the scholars mentioned in line 12 for which of the following?

(A) Assuming that women writers of the Renaissance are representative of Renaissance women in general

(B) Drawing conclusions that are based on the study of an atypical group of women

(C) Failing to describe clearly the relationship between social status and literacy among Renaissance women

(D) Failing to acknowledge the role played by Renaissance women in opposing cultural stereotypes

(E) Failing to acknowledge the ways in which social status affected the creative activities of Renaissance women

Inference

Line 12 refers to feminist scholars who have rejected both Kelly's and Burckhardt's views of the status of Renaissance women. The next sentence states that the feminist scholars use class and religious differences among Renaissance women to argue against Kelly's and Burckhardt's generalizations, which were based on upper-class Italian women.

A The second paragraph suggests that Krontiris at times conflates Renaissance women writers and women in general, but the passage does not indicate that the feminist scholars believe this of Kelly or Burckhardt.

B **Correct.** The feminist scholars mentioned study different types of Renaissance women and so reject Kelly's and Burckhardt's conclusions that were based on a group that was not in fact typical.

C Krontiris, not Kelly and Burckhardt, is the scholar who, according to the passage, fails to address the relationship between literacy and social status.

D The passage provides no grounds for determining whether Kelly, Burckhardt, or the feminist scholars mentioned in the first paragraph dealt with Renaissance women's opposition to cultural stereotypes; Krontiris's work is concerned with this question.

E The first paragraph suggests that feminist scholars criticized Kelly and Burckhardt for failing to acknowledge the ways in which social status complicates any generalizations that can be made about Renaissance women's lives, not their creative activities specifically.

The correct answer is B.

534. The author of the passage suggests that Krontiris incorrectly assumes that

(A) social differences among Renaissance women are less important than the fact that they were women

(B) literacy among Renaissance women was more prevalent than most scholars today acknowledge

(C) during the Renaissance, women were able to successfully oppose cultural stereotypes relating to gender

(D) Renaissance women did not face many difficult social obstacles relating to their gender

(E) in order to attain power, Renaissance women attacked basic assumptions in the ideologies that oppressed them

Inference

The first statement the author makes about Krontiris, in the second paragraph, concerns what the author characterizes as a problem with Krontiris's work. Krontiris takes the Renaissance women writers she studies as representative of all Renaissance women; the author says that designating *women* as the most important grouping fails to consider whether other social differences might make for differences in experience.

A **Correct.** The author indicates that Krontiris's error lies in assuming that women's identity as women trumps social and other differences.

B The author does not suggest that Krontiris assumes inappropriate literacy levels among Renaissance women, but rather that Krontiris does not give sufficient consideration to the idea that women who could read and write most likely led lives very different from those of women who could not read and write.

C The author says that Krontiris suggests that there were many cultural stereotypes that women were not able to oppose effectively.

D Krontiris, according to the author, acknowledges the many social obstacles faced by women on the basis of their gender.

E According to the author, Krontiris's concluding remarks suggest that Renaissance women *seldom attacked the basic assumptions in the ideologies that oppressed them.*

The correct answer is A.

535. The last sentence in the passage serves primarily to

(A) suggest that Krontiris's work is not representative of recent trends among feminist scholars

(B) undermine the argument that literate women of the Renaissance sought to oppose social constraints imposed on them

(C) show a way in which Krontiris's work illustrates a "cautiously optimistic" assessment of Renaissance women's achievements

(D) summarize Krontiris's view of the effect of literacy on the lives of upper- and middle-class Renaissance women

(E) illustrate the way in which Krontiris's study differs from the studies done by Burckhardt and Kelly

Evaluation

The function of the final sentence of the passage is to indicate how Krontiris's work takes neither a completely positive nor completely negative view of Renaissance women's experiences—i.e., how her work is representative of those authors who are cautiously optimistic about the achievements of Renaissance women.

A The passage discusses Krontiris's work as an example of the trend described in the latter part of the first paragraph and mentioned in the first line of the second paragraph. The last sentence in the passage shows that Krontiris's work is in fact representative of recent trends among feminist scholars.

B The last sentence in the passage states that Renaissance women's opposition to cultural stereotypes was circumscribed, but it also suggests that these women did gain some power for themselves. Thus, the sentence does not serve primarily to undermine the argument that the women sought to oppose social constraints.

C **Correct.** Krontiris's work illustrates the "cautiously optimistic" view by embracing both the idea that Renaissance women could gain a certain amount of power and the idea that the extent of their opposition was limited.

D The last sentence in the passage summarizes Krontiris's view, but that view does not, according to the passage, take into account the effect of literacy on the members of a particular social class.

E The main function of the final sentence of the passage is to take up the idea of the *cautiously optimistic* assessment offered in the penultimate sentence. This does mark a significant departure from both Burckhardt and Kelly, but the distinction between their work and that of other feminist scholars is marked more clearly earlier in the passage.

The correct answer is C.

536. The author of the passage implies that the women studied by Krontiris are unusual in which of the following ways?

(A) They faced obstacles less formidable than those faced by other Renaissance women.

(B) They have been seen by historians as more interesting than other Renaissance women.

(C) They were more concerned about recording history accurately than were other Renaissance women.

(D) Their perceptions are more likely to be accessible to historians than are those of most other Renaissance women.

(E) Their concerns are likely to be of greater interest to feminist scholars than are the ideas of most other Renaissance women.

Inference

The women Krontiris studied are unusual, the author suggests, because they were literate, thus putting them among the minority of Renaissance women. That they could write, however, means that their written reflections are part of the historical record, whereas the direct impressions of experiences had by Renaissance women who could not write about their lives are lost to history.

A The author implies that the obstacles faced by Krontiris's subjects may have been different from those faced by other women, not that they were less formidable.
B The author does not imply that the women studied by Krontiris are seen as more interesting; rather, the author indicates that their work is that which is available for study.
C The women Krontiris studies were able to record their own history because they, unlike most other Renaissance women, were literate. This does not imply that they were more concerned with recording history accurately.
D **Correct.** Because Krontiris's subjects were literate, they were able to write down, and thus preserve for historians, their perceptions in a way that most other Renaissance women were not.
E The author does not suggest that feminist scholars in general are more interested in the concerns of middle- and upper-class literate women than they are with women of other classes.

The correct answer is D.

Questions 537–540 refer to the passage on page 420.

537. The passage implies which of the following about the five asteroids mentioned in line 12 ?

(A) Their rotation rates are approximately the same.
(B) They have undergone approximately the same number of collisions.
(C) They are monoliths.
(D) They are composed of fragments that have escaped the gravity of larger asteroids.
(E) They were detected only recently.

Inference

In line 12, *five observed asteroids*, refers to the five asteroids whose rotation rates are exceptions to the strict limit on the rate of rotation found in all other observed asteroids. These five asteroids all have diameters smaller than 200 meters. The passage indicates that if asteroids were all monoliths—that is, single rocks—then their rotation rates would form a bell curve when graphed, but if asteroids were piles of rubble, the tail of the bell curve indicating very fast rotation rates would be missing. Among asteroids larger than 200 meters, this tail is missing, and only the five asteroids described as exceptions have rotation rates falling at the very high end of the bell curve.

A All that the passage states about the rotation rates of these five asteroids is that they do not obey a strict limit. The passage does not rule out that their rates of rotation are significantly different from one another.
B According to the passage, frequent collisions occur among asteroids. But the passage does not suggest that asteroids that are of similar sizes, or that have particularly high rotation rates, will be similar in terms of the number of collisions that they have undergone to reach those distinctive states.
C **Correct.** The second paragraph states that *most small asteroids* should be monolithic, and the five observed asteroids are all smaller than 200 meters in diameter.
D The five asteroids are most likely not composed of fragments because, as the passage states, small asteroids should be monoliths.
E The passage notes that researchers have observed these five asteroids, along with others, but it does not indicate when these asteroids were originally detected.

The correct answer is C.

538. The discovery of which of the following would call into question the conclusion mentioned in line 16 ?

(A) An asteroid 100 meters in diameter rotating at a rate of once per week
(B) An asteroid 150 meters in diameter rotating at a rate of 20 times per hour
(C) An asteroid 250 meters in diameter rotating at a rate of once per week
(D) An asteroid 500 meters in diameter rotating at a rate of once per hour
(E) An asteroid 1,000 meters in diameter rotating at a rate of once every 24 hours

Application

The conclusion that the text in line 16 points to is that asteroids with diameters greater than 200 meters are *multicomponent structures or rubble piles*. To call that conclusion into question, an observation would have to suggest that asteroids larger than 200 meters across are not such multicomponent structures. According to the first paragraph, rubble piles cannot be fast rotators: spinning faster than once every few hours would make them fly apart.

A Nothing in the passage suggests that the behavior of an asteroid 100 meters in diameter is relevant to a conclusion about the behavior of asteroids greater than 200 meters in diameter.

B Nothing in the passage suggests that the behavior of an asteroid 150 meters in diameter would have any effect on a conclusion about the constitution of asteroids with diameters greater than 200 meters.

C An asteroid 250 meters in diameter rotating at a rate of once per week would be rotating at a slow enough rate to hold together a pile of rubble. Thus, this observation would be entirely consistent with the conclusion about asteroids larger than 200 meters in diameter.

D **Correct.** Assuming that an asteroid composed of a pile of rubble is of a great enough density, a rotation rate greater than one revolution every few hours would make it fly apart. So a 500-meter asteroid rotating at a rate of once per hour—that is, faster than the crucial speed—would fly apart if it were not a monolith. The conclusion states that all asteroids larger than 200 meters are multicomponent structures (that is, are not monoliths), so the discovery of a 500-meter asteroid rotating at a rate of once an hour would call into question that conclusion.

E An asteroid rotating at a rate of once every 24 hours would, regardless of size, be rotating much more slowly than the *once every few hours* that the passage claims would make a pile of rubble of a sufficient density fly apart. So an asteroid with a diameter of 1,000 meters that rotated once per day could be a pile of rubble and not conflict with the conclusion.

The correct answer is D.

539. According to the passage, which of the following is a prediction that is based on the strength of the gravitational attraction of small asteroids?

(A) Small asteroids will be few in number.
(B) Small asteroids will be monoliths.
(C) Small asteroids will collide with other asteroids very rarely.
(D) Most small asteroids will have very fast rotation rates.
(E) Almost no small asteroids will have very slow rotation rates.

Supporting ideas

Regarding small asteroids, the second paragraph states that they have feeble gravity. Any fragments from impacts would escape that gravity, and thus, the passage states, the small asteroids *should be monolithic*.

A Small asteroids could be few in number, but the passage does not offer such a prediction.

B **Correct.** This prediction is offered in the second paragraph, based on the fact that small asteroids do not have strong gravitational attraction. Any impact fragments will easily escape the weak gravitational attraction of the small asteroids.

C The passage discusses large asteroids collisions in more detail than small-asteroid collisions, but it provides no basis for predicting how often large and small asteroids will, comparatively, be involved in such collisions.

D The first paragraph indicates that the rotation rates of small asteroids can exceed the upper limit on the rotation rates of large asteroids, but it does not indicate that most small asteroids have rotation rates that exceed this upper limit.

E The passage only indicates that there are few observed exceptions to the upper limit on rotation rates of large asteroids, and these exceptions are all smaller than 200 meters in diameter; the passage does not indicate that there are few small asteroids that have very slow rotation rates.

The correct answer is B.

540. The author of the passage mentions "escape velocity" (see line 22) in order to help explain which of the following?

(A) The tendency for asteroids to become smaller rather than larger over time

(B) The speed with which impact fragments reassemble when they do not escape an asteroid's gravitational attraction after a collision

(C) The frequency with which collisions among asteroids occur

(D) The rotation rates of asteroids smaller than 200 meters in diameter

(E) The tendency for large asteroids to persist after collisions

Evaluation

This question asks about the purpose of the author's use of the phrase *escape velocity* in the second paragraph. The author is discussing what occurs after an asteroid collision, in which a large asteroid might be blasted to bits. The bits, according to the author, will move slower than their *mutual escape velocity*—that is, the speed at which they would have to move to get away from each other and not reassemble, under the influence of gravity, into a rubble pile.

A The author is emphasizing the asteroid bits that do not escape rather than those that do. Asteroids may become smaller over time, but the fact that most bits move slower than their escape velocity would not help to explain this shrinkage.

B That the bits of asteroid move slower than their escape velocity helps explain why the fragments reassemble, but it does not help explain the speed with which they reassemble.

C According to the author, asteroid collisions occur frequently, but the escape velocity of the resulting fragments does not help to explain that frequency.

D The concept of escape velocity may help explain why small asteroids are monoliths, but it has no relevance, at least as far as the passage indicates, to those asteroids' rotation rates.

E **Correct.** After a collision, it is the asteroid fragments' failure to reach escape velocity that allows the fragments' gravitational pull to reassemble them into a rubble pile.

The correct answer is E.

Questions 541–543 refer to the passage on page 422.

541. The author of the passage mentions calculations about tunneling time and barrier thickness in order to

(A) suggest that tunneling time is unrelated to barrier thickness

(B) explain the evidence by which Wigner and Eisenbud discovered the phenomenon of tunneling

(C) describe data recently challenged by Raymond Chiao and colleagues

(D) question why particles engaged in quantum tunneling rarely achieve extremely high speeds

(E) explain the basis for Wigner and Eisenbud's hypothesis

Evaluation

This question asks why the author discusses calculations about tunneling time and barrier thickness. According to the passage, these calculations provided the grounds for Wigner and Eisenbud's hypothesis that tunneling particles may travel faster than light.

A The passage states that tunneling time is related to barrier thickness, up to the point at which tunneling time reaches a maximum.

B The passage indicates that the phenomenon of tunneling was noted at least as early as 1932. It provides no evidence that Wigner and Eisenbud discovered it.

C The passage uses Chiao's work to support the idea that tunneling particles may move faster than light, not challenge it.

D The author describes calculations about tunneling time and barrier thickness in order to explain that particles engaged in quantum tunneling may in fact achieve extremely high speeds, not to explain the rarity of the phenomenon.

E **Correct.** The calculations about tunneling time and barrier thickness supported Wigner and Eisenbud's hypothesis that quantum tunneling could occur at speeds faster than that of light.

The correct answer is E.

542. The passage implies that if tunneling time reached no maximum in increasing with barrier thickness, then

(A) tunneling speed would increase with barrier thickness

(B) tunneling speed would decline with barrier thickness

(C) tunneling speed would vary with barrier thickness

(D) tunneling speed would not be expected to increase without limit

(E) successful tunneling would occur even less frequently than it does

Inference

The passage states that because tunneling time reaches a maximum, then tunneling speed must increase as barrier thickness increases. But if tunneling time did not reach such a maximum, then speed need not increase without limit; the particle could have as low a speed in thicker barriers as in thinner ones and take longer to tunnel through a barrier.

A If tunneling time could not reach a maximum, then speed might increase, decrease, or remain the same as barrier thickness increases.

B If tunneling time could not reach a maximum, then speed might increase, decrease, or remain the same as barrier thickness increases.

C Tunneling speed could vary with barrier thickness if tunneling time could not reach a maximum, but there is no basis in the passage on which to conclude that this is definitely so.

D **Correct.** The tunneling particle could have as low a speed in thicker barriers as in thinner ones and simply take longer to make its way through a thicker barrier.

E The passage states that the probability of successful tunneling declines as the thickness of the barrier increases. However, it does not address the issue of whether the differences in probability of successful tunneling are due to the greater time required to go through thicker barriers.

The correct answer is D.

543. Which of the following statements about the earliest scientific investigators of quantum tunneling can be inferred from the passage?

(A) They found it difficult to increase barrier thickness continually.

(B) They anticipated the later results of Chiao and his colleagues.

(C) They did not suppose that tunneling particles could travel faster than light.

(D) They were unable to observe instances of successful tunneling.

(E) They made use of photons to study the phenomenon of tunneling.

Inference

This question asks about the earliest investigators of quantum tunneling. The passage notes that quantum tunneling's *extreme rapidity* was observed in 1932; thus, the earliest investigators of this phenomenon knew of its existence at that time. Not until 1955 did Wigner and Eisenbud hypothesize that the particles traveled faster than light. Thus, it is logical to infer that the earliest investigators did not imagine such a speed.

A There is nothing in the passage to suggest that the earliest investigators of quantum tunneling had difficulty manipulating barrier thickness.

B The passage states that Chiao and his colleagues measured photons moving at 1.7 times the speed of light—but the passage does not provide evidence that the earliest investigators anticipated such speeds.

C **Correct.** The passage suggests that prior to 1955, investigators of quantum tunneling had not hypothesized that the particles could travel faster than the speed of light.

D The passage indicates that by 1932, investigators had noted the rapidity of quantum tunneling; although this does not entail that they observed the phenomenon, it is consistent with their having been able to do so.

E The passage indicates that Chiao's work involves photons, but it does not indicate the type of particles used or observed by the earliest investigators of the phenomenon.

The correct answer is C.

8.5 Answer Key

544. E
545. C
546. E
547. A
548. A
549. B
550. E
551. E
552. C
553. E
554. A
555. A
556. D
557. B
558. C
559. A
560. C
561. B
562. D
563. D
564. C
565. E
566. E
567. E
568. B
569. A
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571. B
572. E
573. D
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575. E
576. C
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582. C
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609. C
610. E
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612. D
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614. C
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633. D
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635. A
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637. C
638. B
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643. C
644. B
645. E
646. D
647. A
648. C
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652. B
653. D
654. B
655. D
656. C
657. C
658. D
659. E
660. E
661. D
662. D
663. B
664. E
665. C
666. A
667. B

8.6 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 exam. Remember that it is the problem solving strategy that is important, not the specific details of a particular question.

544. Neuroscientist: Memory evolved to help animals react appropriately to situations they encounter by drawing on the past experience of similar situations. But this does not require that animals perfectly recall every detail of all their experiences. Instead, to function well, memory should generalize from past experiences that are similar to the current one.

The neuroscientist's statements, if true, most strongly support which of the following conclusions?

(A) At least some animals perfectly recall every detail of at least some past experiences.

(B) Perfectly recalling every detail of all their past experiences could help at least some animals react more appropriately than they otherwise would to new situations they encounter.

(C) Generalizing from past experiences requires clear memories of most if not all the details of those experiences.

(D) Recalling every detail of all past experiences would be incompatible with any ability to generalize from those experiences.

(E) Animals can often react more appropriately than they otherwise would to situations they encounter if they draw on generalizations from past experiences of similar situations.

Argument Construction

Situation A neuroscientist claims that memory evolved to help animals learn how to react appropriately by generalizing from past experiences but that this does not require animals to remember all details of those experiences.

Reasoning *What conclusion would the neuroscientist's theory about memory most strongly support?* The neuroscientist asserts that the evolutionary function of memory is to help animals learn to react appropriately by drawing on generalizations from similar experiences they have had. If memory is to serve this function, drawing on generalizations must actually help animals learn to react more appropriately than they otherwise would, even when they do not remember all the details of past experiences.

A Even if no animal ever recalls all the details of any past experience, animals could still learn through generalizations, as the neuroscientist claims.

B This statement could be false even if all of what the neuroscientist says is true. Even if it were never helpful for any animal to recall every detail of all its past experiences, animals could still benefit by learning through generalizations.

C Generalizations from experiences might be made while the experiences are occurring, so that only the generalizations and not the details need to be remembered.

D The neuroscientist only claims that remembering perfect details is not required for memory to serve its function, not that such perfect recall is incompatible with memory serving its function.

E **Correct.** If the evolutionary function of memory is to help animals react more appropriately by drawing on generalizations from past experiences, it follows that animal memories can often successfully serve this function in this manner.

The correct answer is E.

545. Astronomer: Most stars are born in groups of thousands, each star in a group forming from the same parent cloud of gas. Each cloud has a unique, homogeneous chemical composition. Therefore, whenever two stars have the same chemical composition as each other, they must have originated from the same cloud of gas.

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

(A) In some groups of stars, not every star originated from the same parent cloud of gas.
(B) Clouds of gas of similar or identical chemical composition may be remote from each other.
(C) Whenever a star forms, it inherits the chemical composition of its parent cloud of gas.
(D) Many stars in vastly different parts of the universe are quite similar in their chemical compositions.
(E) Astronomers can at least sometimes precisely determine whether a star has the same chemical composition as its parent cloud of gas.

Argument Evaluation

Situation Most stars are born in groups, any one of which forms from a parent gas cloud with a unique, homogenous chemical composition.

Reasoning What would be additional evidence that any two stars with the same chemical composition originated from the same gas cloud? The implicit reasoning is that since the chemical composition of each gas cloud is unique and homogenous, any two stars that formed from gas with the same chemical composition must have originated from the same cloud. The astronomer then infers that if two stars have the same composition now, they must have originated from the same cloud. This inference requires the assumption that the composition each star has now depends only on the composition of the cloud in which it originated. Any evidence that supports this assumption will strengthen the argument.

A Whether or not stars born in different clouds of gas are ever in the same "group" is not clearly relevant to whether or not they ever have the same chemical composition.

B How remote clouds of similar compositions are from each other is not clearly relevant to whether stars that have the same chemical composition may have formed from different clouds of gas. Also, the suggestion that different gas clouds may have identical compositions conflicts with the astronomer's premise that the composition of each cloud from which stars form is unique.

C **Correct.** If each star's composition is identical to that of its parent cloud, and each cloud's composition is unique, then any two stars identical in composition must have formed from the same parent cloud.

D If anything, this would suggest that stars with the same composition might have formed from different clouds, so it would weaken rather than strengthen the argument.

E If astronomers could do this, they might be able to obtain additional evidence for or against the position taken in the argument, but this, in itself, provides no reason to suppose that the evidence would support, rather than weaken, that position. They might find that the stars' compositions do not precisely correlate with the compositions of the stars' parent gas clouds.

The correct answer is C.

546. With employer-paid training, workers have the potential to become more productive not only in their present employment but also in any number of jobs with different employers. To increase the productivity of their workforce, many firms are planning to maintain or even increase their investments in worker training. But some training experts object that if a trained worker is hired away by another firm, the employer that paid for the training has merely subsidized a competitor. They note that such hiring has been on the rise in recent years.

Which of the following would, if true, contribute most to defeating the training experts' objection to the firms' strategy?

(A) Firms that promise opportunities for advancement to their employees get, on average, somewhat larger numbers of job applications from untrained workers than do firms that make no such promise.

(B) In many industries, employees that take continuing-education courses are more competitive in the job market.

(C) More and more educational and training institutions are offering reduced tuition fees to firms that subsidize worker training.

(D) Research shows that workers whose training is wholly or partially subsidized by their employer tend to get at least as much training as do workers who pay for all their own training.

(E) For most firms that invest in training their employees, the value added by that investment in employees who stay exceeds the value lost through other employees' leaving to work for other companies.

Evaluation of a Plan

Situation Many firms pay to train their workers in order to increase their workforces' productivity. But in recent years firms have been increasingly hiring away from each other workers who have had such training.

Reasoning *What would most help address the concern that firms that pay to train workers are thereby subsidizing competitors that hire away those workers?* In order for the employer-paid training to be worthwhile for a given firm despite the risk of subsidizing competitors that may hire away the trained workers, that firm has to gain more benefits from the training than it loses by subsidizing such competitors. Any evidence that this is true for most firms would help to address the experts' concern.

A A typical firm does not necessarily want larger numbers of applications from unqualified workers. And if hired, those workers can still be hired away by competitors after the firm has paid to train them, just as the experts warned.

B This suggests that in many industries, companies, rather than investing in employee training, prefer to hire employees who already have specifically relevant training (perhaps funded by other companies). If anything, this slightly supports, rather than defeats, the training experts' view. No firm has an interest in making its own employees more competitive in the job market unless the firm is likely to benefit from their being so.

C Even firms that pay reduced tuition fees for worker training may lose the money they pay for those fees and effectively subsidize competitors that hire the trained employees away. So this does not defeat the training experts' objection.

D The more highly trained workers—regardless of whether their training was company subsidized or not—would presumably be prime targets for recruitment by competing firms, just as the experts warned. The research finding in question does not help defeat the experts' objection.

E **Correct.** This explicitly indicates that most firms gain more than they lose from the general practice of firms paying to train their workers.

The correct answer is E.

547. Candle Corporation's television stations are likely to have more income from advertisers than previously. This is because advertisers prefer to reach people in the 18- to 49-year-old age group and the number of people in that group watching Candle television is increasing. Furthermore, among Candle viewers, the percentage of viewers 18 to 49 years old is increasing.

Which of the following, if true, would most strengthen the argument that Candle Corporation will receive more income from advertisers?

(A) Advertisers carefully monitor the demographic characteristics of television audiences and purchase advertising time to reach the audiences they prefer to reach.

(B) Among people over 49 years old, fewer viewers of Candle stations buy products advertised on television than do viewers of other stations.

(C) There will be increasingly more advertisements on television that are directed at viewers who are over 49 years old.

(D) Candle stations plan to show reruns of television shows during hours when other stations run shows for the first time.

(E) People 18 to 49 years old generally have less disposable income to spend than do people over 49 years old.

Argument Evaluation

Situation Both the number and the percentage of Candle television viewers who are 18 to 49 years old are increasing. Advertisers prefer to reach people in this age group.

Reasoning *What evidence, when combined with the cited facts, would most support the prediction that Candle will receive more income from advertisers?* The argument assumes that the increasing number and percentage of Candle viewers in the age group that advertisers prefer to reach will probably encourage advertisers to spend more on advertising with Candle. This assumption could be supported by evidence that the advertisers realize that Candle is getting more viewers in that preferred age range or by evidence that this awareness will influence the advertisers' purchase of advertising time.

A **Correct.** Advertisers monitoring demographics will probably realize that Candle has increasing numbers of viewers in their preferred age range. If they purchase advertising to reach viewers in that age range, then they will probably purchase more advertising time with Candle.

B This gives advertisers less reason to advertise on Candle to reach viewers over 49 years old. Other things being equal, that makes Candle likely to receive less income from advertisers, not more income.

C Since the percentage of Candle viewers 18 to 49 years old is growing, the percentage over 49 years old is probably shrinking. This could make advertisers seeking to reach older viewers less inclined to advertise on Candle even as they increase their overall television advertising.

D Advertisers are not necessarily inclined to purchase more advertising during showings of reruns than during original airings of television shows and may even be inclined to purchase less advertising during such showings.

E This gives advertisers less incentive to try to reach audiences between 18 and 49 years old and hence less reason to purchase advertising on Candle.

The correct answer is A.

548. A provincial government plans to raise the gasoline tax to give people an incentive to drive less, reducing traffic congestion in the long term. However, skeptics point out that most people in the province live in areas where cars are the only viable transportation to jobs and stores and therefore cannot greatly change their driving habits in response to higher gasoline prices.

In light of the skeptics' objection, which of the following, if true, would most logically support the prediction that the government's plan will achieve its goal of reducing traffic congestion?

(A) The revenue from the tax will be used to make public transportation a viable means of transportation to jobs and stores for far more people.

(B) The tax will encourage many residents to switch to more fuel-efficient cars, reducing air pollution and other problems.

(C) Because gasoline has been underpriced for decades, the province has many neighborhoods where cars are the only viable means of transportation.

(D) Most residents who cannot greatly change their driving habits could compensate for high gasoline prices by reducing other expenses.

(E) Traffic congestion is an especially serious problem for people for whom cars are the only viable means of transportation.

Evaluation of a Plan

Situation A provincial government plans to raise the gasoline tax in order to reduce traffic congestion by discouraging people from driving. But skeptics point out that most people in the province have no viable form of transportation other than driving.

Reasoning *What would suggest that raising the gasoline tax will reduce traffic congestion even though most people in the province have no viable form of transportation other than driving?* The skeptics point out that since most people in the province have no way to reach jobs or stores except by car, they will not be able to reduce their driving much even if the gasoline tax increases. Any evidence that raising the gasoline tax would reduce traffic congestion despite this obstacle would help to support the plan in light of the skeptics' objection.

A **Correct.** If the tax will fund these public transit improvements, then far more people will have a viable means of transportation other than driving, undermining the basis of the skeptics' objection.

B People switching to fuel-efficient cars would not reduce traffic congestion.

C This essentially only tends to support the skeptics' objection. Unless the plan somehow helps to alleviate the necessity of driving (by, for example, making alternative transportation available), the information provided gives no reason to suppose that the higher costs would significantly reduce traffic congestion.

D If residents cannot greatly change their driving habits, then the tax will not reduce traffic congestion.

E This suggests that many residents in the province could benefit if the plan did reduce traffic congestion, but it does not provide a reason to believe the plan will have that effect.

The correct answer is A.

549. Editorial: The roof of Northtown's municipal equipment-storage building collapsed under the weight of last week's heavy snowfall. The building was constructed recently and met local building-safety codes in every particular, except that the nails used for attaching roof supports to the building's columns were of a smaller size than the codes specify for this purpose. Clearly, this collapse exemplifies how even a single, apparently insignificant departure from safety standards can have severe consequences.

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

(A) The only other buildings to suffer roof collapses from the weight of the snowfall were older buildings constructed according to less exacting standards than those in the codes.

(B) The amount of snow that accumulated on the roof of the equipment-storage building was greater than the predicted maximum that was used in drawing up the safety codes.

(C) Because the equipment-storage building was not intended for human occupation, some safety-code provisions that would have applied to an office building did not apply to it.

(D) The municipality of Northtown itself has the responsibility for ensuring that buildings constructed within its boundaries meet the provisions of the building-safety codes.

(E) Because the equipment-storage building was used for storing snow-removal equipment, the building was almost completely empty when the roof collapsed.

Argument Evaluation

Situation The roof of a recently constructed building collapsed under heavy snowfall. The only way the building did not meet safety standards was that some nails for the roof supports were smaller than prescribed by the building codes.

Reasoning *What would make it less likely that the building's collapse resulted from a single, apparently minor departure from safety standards?* The building met safety standards except for the size of the nails. So if the collapse exemplifies how a departure from safety standards can have severe consequences, as the conclusion claims, then the size of the nails had to be responsible for the collapse. Thus, evidence that a factor other than the size of the nails could fully account for the collapse would weaken the argument.

A This suggests that the snow would not have been heavy enough to collapse the roof if the construction had completely met the safety standards, so it strengthens, rather than weakens, the argument.

B **Correct.** This suggests that the snow could have collapsed the roof even if the nails had met the safety standards, thus casting doubt on the assumption that the nails' inadequacy was responsible for the collapse.

C The claim that the safety requirements for this building were weaker than some others tends slightly to strengthen, rather than weaken, the hypothesis that the bad consequences resulted partly from a failure to comply. Even if safety-code provisions for an equipment-storage building differ from those for an office building, they may still be adequate to ensure the roof's stability.

D The question of who was responsible for ensuring compliance with the safety codes is irrelevant to whether a failure to comply was responsible for the roof's collapse.

E This suggests that the alleged consequences of failing to meet safety standards were less severe than they could have been, but it is irrelevant to determining the cause of the collapse.

The correct answer is B.

550. Political theorist: Even with the best spies, area experts, and satellite surveillance, foreign policy assessments can still lack important information. In such circumstances intuitive judgment is vital. A national leader with such judgment can make good decisions about foreign policy even when current information is incomplete, since __________.

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

(A) the central reason for failure in foreign policy decision making is the absence of critical information

(B) those leaders whose foreign policy decisions have been highly ranked have also been found to have good intuitive judgment

(C) both intuitive judgment and good information are required for sound decision making

(D) good foreign policy decisions often lead to improved methods of gathering information

(E) intuitive judgment can produce good decisions based on past experience, even when there are important gaps in current information

Argument Construction

Situation National leaders sometimes must make foreign policy decisions while lacking important information.

Reasoning *What would most help support the claim that a national leader with intuitive judgment can make good foreign policy decisions without complete information?* The word *since* preceding the blank indicates that the blank should be filled with a premise supporting the statement immediately before the blank. So an observation that supports the claim that a national leader with intuitive judgment can make good foreign policy decisions without complete information would logically complete the argument.

A This gives us no reason to suppose that intuitive judgment helps national leaders avoid such failures.

B This does not specify who ranked the foreign policy decisions, nor how they determined the rankings, so it gives us no reason to accept those rankings. For all we know, the anonymous rankers may have used the dubious rankings they created as the sole evidence for their so-called findings about which leaders have good intuitive judgment.

C This implies that intuitive judgment alone is inadequate without good information, so it undermines rather than supports the claim that national leaders can make good foreign policy decisions with intuitive judgment while lacking complete information.

D This gives us no reason to suppose that good foreign policy decisions can be made in the first place by leaders lacking important information.

E **Correct.** This suggests that national leaders can make good foreign policy decisions using intuitive judgment based on their past foreign policy experience, even without complete information about the current situations they're facing.

The correct answer is E.

551. During the earliest period of industrialization in Britain, steam engines were more expensive to build and operate than either windmills or water mills, the other practicable sources of power for factories. Yet despite their significant cost disadvantage, steam-powered factories were built in large numbers well before technical improvements brought their cost down. Furthermore, they were built even in regions where geographical conditions permitted the construction of wind- and water-powered factories close to major markets.

Which of the following, if true, most helps to explain the proliferation of steam-powered factories during the earliest period of industrialization in Britain?

(A) In many areas of Britain, there were fewer steam-powered factories than wind- or water-powered factories in the earliest period of industrialization.

(B) Unlike wind- or water-powered factories, steam-powered factories were fueled with coal, which sometimes had to be transported significant distances from the mine to the site of the factory.

(C) It was both difficult and expensive to convert a factory from wind power or water power to steam power.

(D) In the early period of industrialization, many goods sold in towns and cities could not be mass-produced in factories.

(E) In Britain, the number of sites where a wind- or water-powered factory could be built was insufficient to provide for all of the demand for factory-produced goods at the time.

Argument Construction

Situation Although steam engines were more expensive than windmills and water mills in early industrial Britain, many steam-powered factories were built even in regions where the construction of wind- and water-powered factories was geographically feasible.

Reasoning *Why might steam-powered factories have proliferated despite their cost disadvantage?* Early industrialists would have needed some positive reason to choose steam over less expensive power sources for their factories. For example, steam engines might have operated faster or more effectively than windmills or water mills. Or steam engines might have received government subsidies. Or conditions restricting the number or locations of windmills and water mills might have forced industrialists to use steam power instead.

A This suggests that the steam-powered factories did not initially proliferate as widely as they might have, but it does not explain why they proliferated to the extent that they did.

B The inconvenience of transporting coal for steam-powered factories would have made those factories less likely to proliferate, not more likely.

C The difficulty of converting factories to steam power would have made steam-powered factories less likely to proliferate, not more likely.

D The technological inability to mass-produce popular products in factories would have made factories in general less likely to proliferate, including steam-powered factories.

E **Correct.** The inadequate number of sites for wind- and water-powered factories might have encouraged early industrialists to build steam-powered factories instead, since the high demand for factory-produced goods could have made these factories profitable despite their cost disadvantage.

The correct answer is E.

552. Snowmaking machines work by spraying a mist that freezes immediately on contact with cold air. Because the sudden freezing kills bacteria, QuickFreeze is planning to market a wastewater purification system that works on the same principle. The process works only when temperatures are cold, however, so municipalities using it will still need to maintain a conventional system.

Which of the following, if true, provides the strongest grounds for a prediction that municipalities will buy QuickFreeze's purification system despite the need to maintain a conventional purification system as well?

(A) Bacteria are not the only impurities that must be removed from wastewater.
(B) Many municipalities have old wastewater purification systems that need to be replaced.
(C) Conventional wastewater purification systems have not been fully successful in killing bacteria at cold temperatures.
(D) During times of warm weather, when it is not in use, QuickFreeze's purification system requires relatively little maintenance.
(E) Places where the winters are cold rarely have a problem of water shortage.

Evaluation of a Plan

Situation QuickFreeze is planning to market wastewater purification systems that work by spraying a mist that freezes on contact with cold air. The sudden freezing kills bacteria. Because the system works only at cold temperatures, municipalities using it will still need to maintain a conventional system.

Reasoning *Which statement provides the strongest grounds for thinking that at least some municipalities will buy the purification system despite the need to maintain a conventional purification system as well?* The passage tells us why a municipality using a QuickFreeze wastewater purification system would still need a conventional system. But why would a municipality want the QuickFreeze system *in addition* to a conventional system? If conventional systems are not fully effective at cold temperatures, the QuickFreeze system would allow municipalities that sometimes experience cold temperatures to purify their wastewater more effectively.

A There is no basis in the passage for determining whether the QuickFreeze system will help remove impurities other than bacteria from wastewater. If it does not, this answer choice implies that the QuickFreeze system would not be sufficient for purifying wastewater. This would actually undermine the prediction.

B The passage states that municipalities using the QuickFreeze system would still need a conventional system. Thus, the old conventional wastewater systems would still need to be replaced with new conventional systems. This answer choice provides no reason to think municipalities would buy the QuickFreeze system.

C **Correct.** This statement, if true, would strengthen the prediction, because it provides a valid reason why the QuickFreeze system could be needed alongside conventional ones: it is more effective in cold weather.

D Although this claim does undercut one reason for thinking municipalities might *not* be likely to purchase the QuickFreeze system, it provides little reason to think that they will purchase such a system. Perhaps in times of cold weather, the QuickFreeze system is very expensive to maintain.

E The issue of whether or not there are water shortages in places where winters are cold is not directly relevant. If conventional wastewater systems are sufficient to purify water in such places, municipalities would not need the QuickFreeze system (as they would still need to maintain a conventional purification system).

The correct answer is C.

553. Suncorp, a new corporation with limited funds, has been clearing large sections of the tropical Amazon forest for cattle ranching. This practice continues even though greater profits can be made from rubber tapping, which does not destroy the forest, than from cattle ranching, which does destroy the forest.

Which of the following, if true, most helps to explain why Suncorp has been pursuing the less profitable of the two economic activities mentioned above?

(A) The soil of the Amazon forest is very rich in nutrients that are important in the development of grazing lands.

(B) Cattle-ranching operations that are located in tropical climates are more profitable than cattle-ranching operations that are located in cold-weather climates.

(C) In certain districts, profits made from cattle ranching are more heavily taxed than profits made from any other industry.

(D) Some of the cattle that are raised on land cleared in the Amazon are killed by wildcats.

(E) The amount of money required to begin a rubber-tapping operation is twice as high as the amount needed to begin a cattle ranch.

Argument Construction

Situation Suncorp is a new corporation with limited funds. It has been clearing large sections of the tropical Amazon forest for ranching, even though rubber-tapping would be more profitable.

Reasoning *What would explain why Suncorp is clearing sections of the rain forest for ranching, even though rubber tapping would be more profitable?* Because Suncorp has limited funds, if rubber tapping has much higher start-up costs, Suncorp might not have enough money to start rubber-tapping operations. If cattle ranching has much lower start-up costs than rubber tapping, Suncorp might be able to afford such an operation.

A This statement gives a reason why cattle ranching in the Amazon might be more profitable than one might otherwise think it would be. However, we already know from the passage that rubber tapping would be more profitable than cattle ranching. So, this answer choice does not help explain why cattle ranching might be preferable to rubber tapping.

B The comparison between the profitableness of cattle ranching in tropical climates and in cold-weather climates is irrelevant. The passage only covers cattle ranching in the tropical Amazon forest. This answer choice would at most explain why Suncorp is undertaking cattle ranching in the Amazon rather than in some cold-weather location.

C This statement makes what needs to be explained harder to understand, for it indicates that cattle ranching in the Amazon might be less profitable than one would otherwise think.

D Like answer choice (C), this statement indicates a disadvantage of cattle ranching in the Amazon. So, it does not explain why cattle ranching would be preferred to some other economic activity.

E **Correct.** Because it costs less to begin cattle ranching than it does to begin rubber tapping, Suncorp—which has limited funds—would have a reason to pursue cattle ranching over a potentially more profitable activity.

The correct answer is E.

554. Archaeologists use technology to analyze ancient sites. It is likely that this technology will advance considerably in the near future, allowing archaeologists to gather more information than is currently possible. If they study certain sites now, they risk contaminating or compromising them for future studies. Therefore, in order to maximize the potential for gathering knowledge in the long run, a team of archaeologists plans to delay the examination of a newly excavated site.

Which of the following would be most useful to investigate for the purpose of evaluating the plan's prospects for achieving its goal?

(A) Whether any of the contents of the site will significantly deteriorate before the anticipated technology is available

(B) Whether there will continue to be improvements on the relevant technology

(C) Whether the team can study a site other than the newly excavated site for the time being

(D) Whether the site was inhabited by a very ancient culture

(E) Whether the anticipated technology will damage objects under study

Evaluation of a Plan

Situation To avoid prematurely compromising a newly excavated site, an archaeological team plans to postpone examining it until more advanced technology is developed that will let them gather more information from it. Their goal is to maximize the potential for gathering knowledge.

Reasoning *What would be most helpful to investigate in order to assess how likely it is that delaying examination of the site will maximize the potential for gathering knowledge from it?* In order to maximize (or even increase) the potential for gathering knowledge from the site by delaying its examination, the risk of compromising the site by examining it now has to be greater than the risk that the site will be compromised as much or more by delaying the examination. The delay might also increase the risk that the site will never be examined at all—for example, the team might lose its funding while it delays, or changes in local political conditions might prevent the site's future examination. Investigating any of these risks could be helpful in assessing the likelihood that the team's plan will achieve its goal.

A **Correct.** If any of the site's contents will significantly deteriorate before the technology becomes available, that could reduce the ability to gather future information from the site even more than examining and compromising the site now would.

B The passage already tells us that it is likely the technology *will advance considerably in the near future*. Given this information, further inquiry into whether there will be any ongoing (perhaps minor) improvements is somewhat redundant and probably of minimal value with respect to evaluating the plan's likelihood of success.

C Even if the team can study a second site in the meanwhile, they might maximize the overall potential for gathering knowledge by delaying the examination of either site, both sites, or neither site until more advanced technology is available.

D The age of the culture that inhabited the site is irrelevant to assessing the risks of delaying the site's examination until more advanced technology is available.

E Even if the anticipated technology will damage or destroy the objects under study, it might still maximize the amount of knowledge that can be gathered from those objects. Without any comparison between the damage risk that would be incurred by proceeding with the current technology and the damage risk that would be incurred by waiting, the mere fact that some damage would occur is irrelevant.

The correct answer is A.

555. A newly discovered painting seems to be the work of one of two seventeenth-century artists, either the northern German Johannes Drechen or the Frenchman Louis Birelle, who sometimes painted in the same style as Drechen. Analysis of the carved picture frame, which has been identified as the painting's original seventeenth-century frame, showed that it is made of wood found widely in northern Germany at the time, but rare in the part of France where Birelle lived. This shows that the painting is most likely the work of Drechen.

Which of the following is an assumption that the argument requires?

(A) The frame was made from wood local to the region where the picture was painted.

(B) Drechen is unlikely to have ever visited the home region of Birelle in France.

(C) Sometimes a painting so resembles others of its era that no expert is able to confidently decide who painted it.

(D) The painter of the picture chose the frame for the picture.

(E) The carving style of the picture frame is not typical of any specific region of Europe.

Argument Construction

Situation The original frame of a seventeenth-century painting that seems to be by either the northern German Johannes Drechen or the Frenchman Louis Birelle is made of a type of wood much more common in northern Germany than in France, suggesting that Drechen was the painter.

Reasoning *What must be true in order for the facts presented to support the conclusion that the painting is by Drechen?* The argument is that in the seventeenth century, the type of wood in the frame was more common in northern Germany where Drechen was from than in France where Birelle was from, so probably Drechen painted the picture. In order for this inference to be plausible, the argument must implicitly assume that the frame's wood was from the same region the painter was from. And in order to justify this assumed connection between the wood and the region the painter was from, the argument must also assume that the painter painted the picture in that region.

A **Correct.** If the frame were not made of wood local to the region where the picture was painted, or if that region in turn were not where the painter was from, then the cited fact about where the wood was more common would be irrelevant to the conclusion about who painted the picture.

B The argument is compatible with the plausible hypothesis that Drechen visited France at some point during his lifetime but did not frame this or any painting with French wood.

C Even if experts always felt confident in deciding who painted any picture, examining the wood in the picture frame might help them decide correctly.

D The argument is compatible with the plausible hypothesis that the picture was sold to a local customer who then chose a frame of local wood.

E The argument would be even stronger if this were false and the carving style of the frame were typical of northern Germany specifically.

The correct answer is A.

556. Beginning in 1966 all new cars sold in Morodia were required to have safety belts and power steering. Previously, most cars in Morodia were without these features. Safety belts help to prevent injuries in collisions, and power steering helps to avoid collisions in the first place. But even though in 1966 one-seventh of the cars in Morodia were replaced with new cars, the number of car collisions and collision-related injuries did not decline.

Which of the following, if true about Morodia, most helps to explain why the number of collisions and collision-related injuries in Morodia failed to decline in 1966?

(A) Because of a driver-education campaign, most drivers and passengers in cars that did have safety belts used them in 1966.

(B) Most of the new cars bought in 1966 were bought in the months of January and February.

(C) In 1965, substantially more than one-seventh of the cars in Morodia were replaced with new cars.

(D) An excessive reliance on the new safety features led many owners of new cars to drive less cautiously in 1966 than before.

(E) The seat belts and power steering put into new cars sold in 1966 had to undergo strict quality-control inspections by manufacturers, whether the cars were manufactured in Morodia or not.

Argument Construction

Situation Starting in 1966, new cars sold in Morodia were required to have safety belts and power steering. But the numbers of car collisions and collision-related injuries did not decline that year.

Reasoning *What could explain why the newly required safety features did not reduce the numbers of collisions and collision-related injuries in 1966?* The passage says that power steering helps to prevent collisions and that safety belts help to prevent collision-related injuries. Since most Morodian cars previously lacked these features, and one-seventh of them were replaced with new cars in 1966, the proportion of cars with these features must have increased that year. This should have reduced the numbers of collisions and collision-related injuries unless some other factor counteracted the reductions. Evidence of any such countervailing factor would help to explain why the numbers did not decrease.

A Increased usage of safety belts should have reduced the number of collision-related injuries, so it would not help explain why this number did not decrease.

B If the new cars bought in 1966 were mostly purchased early in the year, the increased proportion of cars with the newly required safety features should have started more significantly reducing the numbers of collisions and collision-related injuries early in the year, producing greater reductions for the year as a whole.

C However, many cars were replaced in the year before the safety features were required, in 1966 the replacement of one-seventh of all Morodian cars should still have increased the overall proportion of Morodian cars with the safety features and thus reduced the numbers of collisions and collision-related injuries.

D **Correct.** If many owners of the cars with the new safety features drove less cautiously, their recklessness could have increased the overall numbers of collisions and collision-related injuries despite any benefits from the safety features.

E Strict quality-control inspections should have made the safety features more reliable, further reducing the numbers of collisions and collision-related injuries.

The correct answer is D.

557. In order to reduce the number of items damaged while in transit to customers, packaging consultants recommended that the TrueSave mail-order company increase the amount of packing material so as to fill any empty spaces in its cartons. Accordingly, TrueSave officials instructed the company's packers to use more packing material than before, and the packers zealously acted on these instructions and used as much as they could. Nevertheless, customer reports of damaged items rose somewhat.

Which of the following, if true, most helps to explain why acting on the consultants' recommendation failed to achieve its goal?

(A) The change in packing policy led to an increase in expenditure on packing material and labor.

(B) When packing material is compressed too densely, it loses some of its capacity to absorb shock.

(C) The amount of packing material used in a carton does not significantly influence the ease with which a customer can unpack the package.

(D) Most of the goods that TrueSave ships are electronic products that are highly vulnerable to being damaged in transit.

(E) TrueSave has lost some of its regular customers as a result of the high number of damaged items they received.

Evaluation of a Plan

Situation Mail-order company TrueSave wants to reduce the number of items damaged while in transit to customers. Packaging consultants recommended that to achieve this goal, the company should use more packing material to fill empty spaces in its cartons. The company's packers began using as much packing material as they could, yet reports of damaged items rose rather than fell.

Reasoning *What would help explain why the company's acting on the recommendation did not achieve its goal?* The recommendation involved increasing the amount of packing material, so there must have been something about that increase that led to more damage. More damage would be likely to result if stuffing more packing material into shipping boxes made the packaging less effective.

A An increase in expenditure on packing material and labor might affect the company's profitability, but it would have no effect on whether items were damaged in transit.

B **Correct.** This statement adequately explains why more items, rather than fewer, were damaged in transit.

C If customers were able to remove their items just as easily from boxes filled with more packing material as from boxes using less packing material, the items would be unaffected by an increase in the amount of packing material used.

D The kind of goods TrueSave ships most frequently is not relevant to the question of why increasing the amount of packing material failed to reduce the number of items damaged in transit, since they most likely shipped this same kind of goods both before and after making the recommended change.

E The loss of regular customers helps explain why TrueSave turned to the packaging consultants for help, but it does not help explain why those consultants' recommendation failed to reduce the number of items damaged in transit.

The correct answer is B.

558. Parland's alligator population has been declining in recent years, primarily because of hunting. Alligators prey heavily on a species of freshwater fish that is highly valued as food by Parlanders, who had hoped that the decline in the alligator population would lead to an increase in the numbers of these fish available for human consumption. Yet the population of this fish species has also declined, even though the annual number caught for human consumption has not increased.

Which of the following, if true, most helps to explain the decline in the population of the fish species?

(A) The decline in the alligator population has meant that fishers can work in some parts of lakes and rivers that were formerly too dangerous.

(B) Over the last few years, Parland's commercial fishing enterprises have increased the number of fishing boats they use.

(C) The main predator of these fish is another species of fish on which alligators also prey.

(D) Many Parlanders who hunt alligators do so because of the high market price of alligator skins, not because of the threat alligators pose to the fish population.

(E) In several neighboring countries through which Parland's rivers also flow, alligators are at risk of extinction as a result of extensive hunting.

Argument Construction

Situation Due to hunting, Parland's alligator population has been declining. Parlanders had hoped that the population of a certain prized species of freshwater fish that alligators prey on would have increased as a result, but the population of this freshwater fish has actually declined.

Reasoning *What would explain why the population of the freshwater species has declined?* Suppose alligators prey not only on the prized freshwater fish but also on another species of fish that is the main predator of those fish. If there are fewer alligators to prey on the predator fish, there may well be more of the predator fish. An increase in the population of the predator fish could help explain why the population of the prized freshwater fish has declined: there are now more of the predator fish around to prey on them.

A Though this statement suggests that the population of the prized fish species may have declined due to their being caught in greater numbers by fishers, the passage tells us that the number of these fish caught for human consumption has not increased. Therefore, this statement cannot explain the species' decline in population.

B The passage tells us that the number of fish caught for human consumption has not increased. This answer choice does not provide any explanation for why the population of these fish has declined.

C **Correct.** Since alligators prey on the predator fish, a decline in the alligator population could result in an increase in the population of the predator fish, which could lead to an increase in nonhuman consumption of the prized freshwater fish.

D We already know from the passage that hunting has led to a decline in the population of alligators. It is irrelevant what motivated the hunting of alligators.

E The fact that alligators are at risk of extinction due to hunting in neighboring countries does not help explain why the prized freshwater fish species is declining in population. If it is puzzling why the fish population is declining despite the reduction in Parland's alligator population, it would be just as puzzling if the alligator population elsewhere was declining.

The correct answer is C.

559. A certain automaker aims to increase its market share by deeply discounting its vehicles' prices for the next several months. The discounts will cut into profits, but because they will be heavily advertised the manufacturer hopes that they will attract buyers away from rival manufacturers' cars. In the longer term, the automaker envisions that customers initially attracted by the discounts may become loyal customers.

In assessing the plan's chances of achieving its aim, it would be most useful to know which of the following?

(A) Whether the automaker's competitors are likely to respond by offering deep discounts on their own products

(B) Whether the advertisements will be created by the manufacturer's current advertising agency

(C) Whether some of the automaker's models will be more deeply discounted than others

(D) Whether the automaker will be able to cut costs sufficiently to maintain profit margins even when the discounts are in effect

(E) Whether an alternative strategy might enable the automaker to enhance its profitability while holding a constant or diminishing share of the market

Evaluation of a Plan

Situation An automaker is planning to offer deep discounts on its vehicles' prices in order to increase its market share. The automaker's profit margins will be reduced by this action. By advertising the discounts, the automaker hopes to attract customers who might otherwise be inclined to buy rival manufacturers' cars. These customers would ideally then develop loyalty to the automaker's cars.

Reasoning *What would it be most useful to know in assessing whether offering deep discounts will enable the automaker to increase its market share?* To achieve an increase in market share, the automaker would have to take customers away from other automakers. Under what circumstances would other automakers be able to retain their customers, if those customers are more likely to purchase cars from automakers that offer deep discounts (and then remain loyal to those automakers)? The other automakers might try to retain their customers by matching the discounts. Thus it would be useful to know whether the other automakers would indeed offer such discounts.

A **Correct.** If the answer to this question were yes, the plan would probably not achieve its aim of increasing market share. If the answer were no, the plan would have a good chance of succeeding.

B Since there is no information about the effectiveness of the automaker's current advertising, it would not be useful to know whether the same advertising agency will produce the ads publicizing the discount.

C Knowing whether some models will be more deeply discounted than others might help in assessing which of the automaker's models will sell best, but it would not help in assessing the overall chance of the automaker increasing its market share.

D The discounts the automaker plans to offer will cut into profits, according to the information given, so the question of whether the automaker can maintain profit margins while the discounts are in effect has already been answered.

E While it might be useful to the automaker to know about alternative strategies, such knowledge does not help in assessing the likelihood that the plan under discussion will achieve its aim.

The correct answer is A.

560. In virtually any industry, technological improvements increase labor productivity, which is the output of goods and services per person-hour worked. In Parland's industries, labor productivity is significantly higher than it is in Vergia's industries. Clearly, therefore, Parland's industries must, on the whole, be further advanced technologically than Vergia's are.

The argument is most vulnerable to which of the following criticisms?

(A) It offers a conclusion that is no more than a paraphrase of one of the pieces of information provided in its support.
(B) It presents as evidence in support of a claim information that is inconsistent with other evidence presented in support of the same claim.
(C) It takes one possible cause of a condition to be the actual cause of that condition without considering any other possible causes.
(D) It takes a condition to be the effect of something that happened only after the condition already existed.
(E) It makes a distinction that presupposes the truth of the conclusion that is to be established.

Argument Evaluation

Situation Technological improvements in nearly every industry increase labor productivity, which is the output of goods and services per person-hour worked. Because labor productivity is significantly higher in Parland than Vergia, Parland's industries are, in general, more technologically advanced than Vergia's.

Reasoning *To which criticism is the argument most vulnerable?* Though one factor, such as technological advancements, may lead to greater labor productivity, it may not be the only such factor, or even a necessary factor, leading to great labor productivity. Therefore, the mere fact that one region's labor is more productive than another's is not sufficient to establish that the former region is more technologically advanced than the latter region is.

A The conclusion is not merely a paraphrase of the pieces of information provided in its support. Indeed, the problem with the argument is that the conclusion goes too far beyond what the premises merit.

B The premises of the argument are not inconsistent with one another.

C **Correct.** This accurately describes the flaw in the argument because the reasons given in the argument for its conclusion would be good reasons only if there were no other plausible explanations for Parland's greater labor productivity.

D The argument does not mention how long Parland has had more productive labor, or when technological improvements would have occurred.

E Neither of the premises contains anything that presupposes the conclusion to be true.

The correct answer is C.

561. Chaco Canyon, a settlement of the ancient Anasazi culture in North America, had massive buildings. **It must have been a major Anasazi center**. Analysis of wood samples shows that some of the timber for the buildings came from the Chuska and San Mateo mountains, 50 miles from Chaco Canyon. **Only a major cultural center would have the organizational power to import timber from 50 miles away**.

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

(A) The first is a premise used to support the argument's main conclusion; the second is the argument's main conclusion.

(B) The first is the argument's main conclusion; the second is a premise used to support that conclusion.

(C) The first is one of two premises used to support the argument's main conclusion; the second is the other of those two premises.

(D) The first is a premise used to support the argument's main conclusion; the second is a premise used to support another conclusion drawn in the argument.

(E) The first is inferred from another statement in the argument; the second is inferred from the first.

Argument Construction

Situation The ancient Anasazi settlement at Chaco Canyon had massive buildings, for which some of the timber came from mountains 50 miles away.

Reasoning *What roles do the statement that Chaco Canyon must have been a major Anasazi center and the statement that only a major center would have the organizational power to import timber from 50 miles away play in the argument?* The first and third sentences in the passage are both factual observations. Since no further support is provided for either of them, neither can be a conclusion in the argument. The fourth sentence is a speculative generalization about major cultural centers. None of the other statements gives us any reason to think this generalization is true, so it cannot be a conclusion in the argument, either. However, the third and fourth sentences together imply that Chaco Canyon was a major cultural center, and the first sentence indicates that it was Anasazi. So together, the first, third, and fourth sentences all support the claim that Chaco Canyon was a major Anasazi cultural center and thus more generally a major Anasazi center, as the second sentence asserts. Therefore, the first, third, and fourth sentences are all premises that jointly support the second sentence as a conclusion.

A As explained above, the first boldface sentence is a conclusion supported by the latter, not the other way around.

B **Correct.** As explained above, the first boldface sentence is the argument's only stated conclusion, and in that sense its main conclusion, while all the other sentences are premises used to support it.

C As explained above, the first boldface sentence is the argument's conclusion, not a premise used to support the conclusion.

D As explained above, the first boldface sentence is the argument's only stated conclusion, and there is no reason to suppose that the argument is intended to lead to any other tacit conclusion that the second boldface sentence is intended to support.

E As explained above, the first boldface sentence is inferred from the three other statements in the argument together, not from any one of them alone. The second boldface sentence is a speculative generalization that cannot be, and is not meant to be, inferred from the former or from any other statement in the argument.

The correct answer is B.

562. The Maxilux car company's design for its new luxury model, the Max 100, included a special design for the tires that was intended to complement the model's image. The winning bid for supplying these tires was submitted by Rubco. Analysts concluded that the bid would only just cover Rubco's costs on the tires, but Rubco executives claim that winning the bid will actually make a profit for the company.

Which of the following, if true, most strongly justifies the claim made by Rubco's executives?

(A) In any Maxilux model, the spare tire is exactly the same make and model as the tires that are mounted on the wheels.

(B) Rubco holds exclusive contracts to supply Maxilux with the tires for a number of other models made by Maxilux.

(C) The production facilities for the Max 100 and those for the tires to be supplied by Rubco are located very near each other.

(D) When people who have purchased a carefully designed luxury automobile need to replace a worn part of it, they almost invariably replace it with a part of exactly the same make and type.

(E) When Maxilux awarded the tire contract to Rubco, the only criterion on which Rubco's bid was clearly ahead of its competitors' bids was price.

Argument Construction

Situation Rubco won a bid for supplying tires for the Max 100, a new luxury model by Maxilux. The bid would barely cover the cost of the tires, but Rubco executives claim that winning the bid will be profitable.

Reasoning *What would support the executives' claim?* Rubco is not expected to make a profit from supplying the tires for the new cars, so we must look for some other way that Rubco could derive a profit as a result of winning the bid. If by winning the bid Rubco created an inevitable market for itself in replacement tires—on which Rubco could earn a profit—then the executives' claim may be justified.

A We have already been told that the bid is expected to barely cover the costs of supplying the tires on the new cars, so the analysts mentioned in the passage have presumably already taken into account that there is a spare tire supplied for the Max 100.

B If winning the bid led Rubco to win more exclusive contracts with the Maxilux, that might help support the executives' claim. But this statement indicates only that Rubco already has several exclusive contracts to supply Maxilux with tires, not that winning the bid has led to, or will lead to, more such contracts, which is what would be needed.

C As in answer choice (A), this is relevant to the costs of supplying the tires for the Max 100, but presumably this was taken into account by the analysts when they concluded that the bid would barely cover Rubco's costs on the tires.

D **Correct.** This indicates that by winning the bid Rubco has created a way to profit from the contract with Maxilux, specifically, by creating a market for replacement tires.

E This is likely one of the reasons that Rubco's bid only just covers Rubco's costs on the tires; it does nothing to justify the executives' claims that the bid will lead to a profit for Rubco.

The correct answer is D.

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

Most bicycle helmets provide good protection for the top and back of the head, but little or no protection for the temple regions on the sides of the head. A study of head injuries resulting from bicycle accidents showed that a large proportion were caused by blows to the temple area. Therefore, if bicycle helmets protected this area, the risk of serious head injury in bicycle accidents would be greatly reduced, especially since ________.

(A) among the bicyclists included in the study's sample of head injuries, only a very small proportion had been wearing a helmet at the time of their accident

(B) even those bicyclists who regularly wear helmets have a poor understanding of the degree and kind of protection that helmets afford

(C) a helmet that included protection for the temples would have to be somewhat larger and heavier than current helmets

(D) the bone in the temple area is relatively thin and impacts in that area are thus very likely to cause brain injury

(E) bicyclists generally land on their arm or shoulder when they fall to the side, which reduces the likelihood of severe impacts on the side of the head

Argument Construction

Situation Bicycle helmets protect the top and back of the head, but not the sides or temples. A study found that a large proportion of head injuries caused by biking accidents were caused by blows to the temple area.

Reasoning *Why would the risk of serious head injury in bicycle accidents be greatly reduced if bicycle helmets protected the temple regions?* If for some reason a serious head injury is particularly likely when there is impact to the temple area, then bicycle helmets that protect that area would be apt to reduce the number of serious head injuries from bicycle accidents. One such reason is that the bone in the temple area is relatively thin.

A This point is irrelevant because it gives us no information about the seriousness or the likelihood of injuries due to impact to the temple area.

B Whether bicyclists who regularly wear helmets have a good understanding of what protection their helmets afford is not relevant as to whether serious head injuries are particularly likely to occur from impact to the temple area.

C This point is relevant only to what a helmet that protected the temple area would be like, not to the seriousness of injuries resulting from impact to that area. If anything, this point counts as a reason *against* the conclusion, not *for* it. If such helmets are heavier and larger, they may be used less than they otherwise would be. If fewer helmets are used, then improvements to helmet design will have less of an effect in reducing serious head injuries.

D **Correct.** This statement provides a reason why the temple area of the rider's head needs protection: impacts to this area are very likely to cause brain injuries.

E This is largely irrelevant. Even if it suggests that head injuries do not generally result from bicyclists falling to the side, it does not indicate that such injuries are rare or that there is not great risk of serious injury in those cases in which there is impact to the temple area.

The correct answer is D.

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

In a typical year, Innovair's airplanes are involved in 35 collisions while parked or being towed in airports, with a resulting yearly cost of $1,000,000 for repairs.

To reduce the frequency of ground collisions, Innovair will begin giving its ground crews additional training, at an annual cost of $500,000. Although this will cut the number of ground collisions by about half at best, the drop in repair costs can be expected to be much greater, since __________.

(A) most ground collisions happen when ground crews are rushing to minimize the time a delayed airplane spends on the ground
(B) a ground collision typically occurs when there are no passengers on the airplane
(C) the additional training will focus on helping ground crews avoid those kinds of ground collisions that cause the most costly damage
(D) the $500,000 cost figure for the additional training of ground crews includes the wages that those crews will earn during the time spent in actual training
(E) most ground collisions have been caused by the least experienced ground-crew members

Evaluation of a Plan

Situation An airline will give its ground crews additional training to reduce the frequency of the collisions its airplanes are involved in while parked or being towed in airports.

Reasoning *What premise would most logically support the conclusion that the additional training will reduce repair costs from ground collisions much more than it reduces the number of such collisions?* The key word *since* before the blank shows that the argument should be completed with a premise that supports the preceding claim that the *drop in repair costs can be expected to be much greater*. A suitable premise might provide evidence that the training will disproportionately help to prevent the ground collisions that result in the higher repair costs as opposed to the less serious collisions that result in lower repair costs.

A We are given no reason to believe that the additional training would affect how much ground crews rush to minimize delays.

B The number of passengers is not clearly relevant to the repair costs resulting from a ground collision and in any case would not be affected by additional ground crew training.

C **Correct.** If the training especially helps the ground crews avoid those kinds of collisions that cause the most costly damage, then it will probably reduce repair costs even more than it reduces the number of collisions.

D Whether the cited expense for training includes wages is irrelevant to whether the training will reduce repair costs more than it reduces the number of collisions.

E This suggests that the additional training may help reduce the number of collisions, not that it will reduce repair costs more than it reduces the number of collisions.

The correct answer is C.

565. Hunter: **Many people blame hunters alone for the decline in Greenrock National Forest's deer population over the past ten years.** Yet clearly, black bears have also played an important role in this decline. In the past ten years, the forest's protected black bear population has risen sharply, and examination of black bears found dead in the forest during the deer hunting season showed that a number of them had recently fed on deer.

In the hunter's argument, the portion in boldface plays which of the following roles?

(A) It is the main conclusion of the argument.
(B) It is a finding that the argument seeks to explain.
(C) It is an explanation that the argument concludes is correct.
(D) It provides evidence in support of the main conclusion of the argument.
(E) It introduces a judgment that the argument opposes.

Argument Construction

Situation The hunter claims that hunters have been identified by many people as the sole cause of the decline in Greenrock National Forest's deer population. But the hunter argues that black bears have also contributed to the deer population decline. Black bears are protected and have increased in number, and they have been found to have fed recently on deer.

Reasoning *What role in the argument is played by the hunter's statement that many people blame hunters alone for the decline in the national forest's deer population?* In this statement, the hunter claims that many people have judged hunters responsible for the decline. The hunter then goes on to offer evidence supporting a different judgment: that hunters are not solely responsible, but that black bears are also to blame.

A The hunter's main conclusion is that black bears have also contributed to the decline in the deer population.

B The argument seeks to offer a reason for the finding that the deer population has declined, not the finding that people blame hunters for that decline.

C The hunter does not conclude that blaming hunters for the decline in the deer population is correct; rather, the hunter suggests that black bears should also be blamed.

D The hunter believes that hunters are *not* solely responsible for the decline in the deer population, so people's suggestion that they *are* responsible does not support the hunter's main conclusion.

E **Correct.** The boldfaced statement cites a judgment that the hunter attributes to many people, and that the hunter argues is incorrect. The hunter opposes the judgment that hunters alone are responsible for the decline in the deer population.

The correct answer is E.

566. Many agriculturally intensive areas of the world are beginning to encounter water scarcity problems. As a result, many farmers in these areas are likely to reduce their output as the water supply they need in order to maintain production shrinks. However, one group of farmers in such a region plans to increase their production by implementing techniques for water conservation.

Which of the following, if true, would most strongly support the prediction that the group's plan will succeed?

(A) Farmers who can gain a larger share of the food market in their regions will be better positioned to control more water resources.
(B) Most agricultural practices in areas with water shortages are water-intensive.
(C) Other regions of the world not facing water shortages are likely to make up for the reduction in agricultural output.
(D) Demand for agricultural products in the group's region is not expected to decline.
(E) More than half the water used for agriculture in the farmers' region is lost to evaporation or leakage from irrigation channels.

Evaluation of a Plan

Situation Farmers in many agriculturally intensive regions will probably reduce their output because the regions' water supplies are dwindling, but one group of farmers in such a region plans to use water conservation techniques to increase their output.

Reasoning *What would provide evidence that water conservation techniques will help the farmers increase production despite their region's dwindling water supplies?* In order for the water conservation techniques to be effective, they must result in significantly more water becoming available for the farmers to use. Because overall supplies are shrinking, rather than growing, that can only happen if the farmers are currently losing or wasting a great deal of water in ways that could be prevented with water conservation techniques.

A This suggests an advantage the farmers will gain if their water conservation plan enables them to increase production, but it provides no evidence that the plan actually will enable them to increase production.

B This suggests that the plan would have to yield quite a lot of conserved water in order for the farmers to increase production, but it offers no evidence that the plan will do so. Thus, it provides some reason to question whether the plan will succeed.

C Whether regions without water shortages will increase production is not directly relevant to the question of whether a particular measure would lead to increased production in one region that does have a water shortage.

D This has some slight, indirect relevance to the question of whether the farmers' plan will succeed: it suggests that if the farmers do manage to increase production, they will continue to have a market for what they produce. However, it does not address the issue of whether they will be able to increase production. Furthermore, even if demand for agricultural products in the group's region were expected to decline, it could still remain high enough to support the farmers' increased output from their water conservation plan.

E **Correct.** This suggests that the farmers are losing a lot of water in ways that the water conservation techniques might prevent, so it provides evidence that employing some such techniques could enable the farmers to save enough water to increase their output.

The correct answer is E.

567. Physician: The hormone melatonin has shown promise as a medication for sleep disorders when taken in synthesized form. Because the long-term side effects of synthetic melatonin are unknown, however, I cannot recommend its use at this time.

Patient: Your position is inconsistent with your usual practice. You prescribe many medications that you know have serious side effects, so concern about side effects cannot be the real reason you will not prescribe melatonin.

The patient's argument is flawed because it fails to consider that

(A) the side effects of synthetic melatonin might be different from those of naturally produced melatonin
(B) it is possible that the physician does not believe that melatonin has been conclusively shown to be effective
(C) sleep disorders, if left untreated, might lead to serious medical complications
(D) the side effects of a medication can take some time to manifest themselves
(E) known risks can be weighed against known benefits, but unknown risks cannot

Argument Evaluation

Situation The physician refuses to prescribe synthetic melatonin to treat sleep disorders despite this medication's promise. The reason the physician offers for this refusal is that the long-term side effects of synthetic melatonin are unknown. The patient responds that because the physician prescribes other medications that are known to have serious side effects, it cannot be a concern for synthetic melatonin's side effects that is prompting the physician's refusal to prescribe that medication.

Reasoning *What does the patient's argument fail to consider?* The patient says that the inconsistency in the physician's position lies in the physician's unwillingness to prescribe synthetic melatonin coupled with a willingness to prescribe other medications that are known to have serious side effects. But notice that the physician does not say that synthetic melatonin has *serious* side effects; rather, the physician points out that the long-term side effects of synthetic melatonin are unknown. The physician most likely prescribes medications that have serious side effects because the medications' benefits outweigh the risks posed by their side effects. In the case of synthetic melatonin, however, this kind of decision cannot be made.

A The patient's argument has to do with whether the physician's refusal to prescribe synthetic melatonin is consistent with the physician's usual prescription practices. The question of whether naturally produced melatonin has different side effects than synthetic melatonin has no bearing on that argument.

B It is quite reasonable for the patient's argument not to mention this possibility, especially since the physician expresses a belief that synthetic melatonin may be effective—but expresses no belief about whether or not it has been conclusively shown to be effective.

C Awareness that sleep disorders can lead to serious medical complications most likely prompts the patient's desire for treatment—but the patient's not mentioning this possible consequence of sleep disorders does not indicate a flaw in the argument.

D The patient makes clear that the physician prescribes medications that have serious side effects; the time those side effects take to manifest themselves is not relevant to the argument.

E **Correct.** The patient's argument is flawed in failing to consider this key difference between known risks and unknown risks. If the patient had considered this key difference, the patient would have realized that the physician's position is not at all inconsistent, and that the physician's refusal to prescribe is genuinely based on a concern about an unknown risk.

The correct answer is E.

568. Hollywood restaurant is replacing some of its standard tables with tall tables and stools. The restaurant already fills every available seat during its operating hours, and the change in seating arrangements will not result in an increase in the restaurant's seating capacity. Nonetheless, the restaurant's management expects revenue to increase as a result of the seating change without any concurrent change in menu, prices, or operating hours.

Which of the following, if true, provides the best reason for the expectation?

(A) One of the taller tables takes up less floor space than one of the standard tables.

(B) Diners seated on stools typically do not linger over dinner as long as diners seated at standard tables.

(C) Since the restaurant will replace only some of its standard tables, it can continue to accommodate customers who do not care for the taller tables.

(D) Few diners are likely to avoid the restaurant because of the new seating arrangement.

(E) The standard tables being replaced by tall tables would otherwise have to be replaced with new standard tables at a greater expense.

Argument Construction

Situation Hollywood restaurant is replacing some of its tables with taller tables and stools, and the management expects this will increase revenue, despite the fact that the restaurant already fills all of its available seats and that this change will not increase seating capacity. Furthermore, there will not be any change in menu, prices, or operating hours.

Reasoning *What would strongly support the management's expectation?* Since the new seating will not increase the restaurant's seating capacity, the management's expectations must be based on a belief that the change to taller tables and stools will somehow change diners' behavior, perhaps by leading them to order more food, or to stay at their tables for a shorter time, thereby allowing the restaurant to serve more diners during its operating hours without increasing seating capacity. If diners seated at tall tables and on tall stools spend less time lingering over their dinners, then they will leave sooner, opening up the tables for more diners. Because the restaurant, before the change, already fills every available seat during its operating hours, it is reasonable to think that it will be able to serve more diners than it currently does, thereby selling more food and thus increasing revenue.

A This would be relevant if we could infer from it that seating capacity will increase. However, the passage indicates that the new seating arrangement will not result in greater capacity.

B **Correct.** Because the restaurant will be able to serve more meals during its operating hours, the restaurant's revenue can be expected to increase.

C This may indicate that the restaurant is less likely to alienate customers who do not care for tall tables and stools, but that only supports the claim that the restaurant will not lose customers and therefore lose revenue; it does not indicate that the restaurant will see revenue increase.

D Again, this merely indicates that there will not be a loss—or much loss—of revenue, not that there will be an increase in revenue.

E Less expensive tables will decrease the restaurant's costs, but it will not increase the restaurant's revenue.

The correct answer is B.

569. A major network news organization experienced a drop in viewership in the week following the airing of a controversial report on the economy. The network also received a very large number of complaints regarding the report. The network, however, maintains that negative reactions to the report had nothing to do with its loss of viewers.

Which of the following, if true, most strongly supports the network's position?

(A) The other major network news organizations reported similar reductions in viewership during the same week.
(B) The viewers who registered complaints with the network were regular viewers of the news organization's programs.
(C) Major network news organizations publicly attribute drops in viewership to their own reports only when they receive complaints about those reports.
(D) This was not the first time that this network news organization has aired a controversial report on the economy that has inspired viewers to complain to the network.
(E) Most network news viewers rely on network news broadcasts as their primary source of information regarding the economy.

Argument Construction

Situation A major network news organization aired a controversial report on the economy, and the following week the network's viewership declined. The network claims that the loss of viewers was not connected with negative reactions to the report.

Reasoning *Which statement most strongly supports the network's position?* If other major news network organizations had similar drops in viewership, it is implausible to think that the controversial report accounted for the other organizations' drops in viewership. On the other hand, it is not implausible to suppose that whatever did cause the drop in the viewership experienced by other network news organizations—e.g., holidays, weather, popular non-news programming—also had that effect on the organization that ran the controversial report. This would give some reason to believe that it was not the report that accounts for the organization's drop in viewership.

A **Correct.** This statement indicates that something other than the airing of the report could account for the subsequent drop in the organization's viewership.

B If anything, this statement tends to undermine the network's claim, because it suggests that the report offended people who otherwise might have continued to watch the organization's programming.

C Since the network did in fact receive complaints about the report, this statement is irrelevant.

D The fact that the network has received complaints before about controversial reports on the economy that the network's news organization has aired tells us nothing about whether this recent report caused a subsequent drop in viewership.

E The fact that viewers turn to network news broadcasts as their primary source of information about the economy tells us nothing about whether viewers might stop watching a particular network news organization's programs as a result of its airing a controversial report on the economy.

The correct answer is A.

570. Only a reduction of 10 percent in the number of scheduled flights using Greentown's airport will allow the delays that are so common there to be avoided. Hevelia airstrip, 40 miles away, would, if upgraded and expanded, be an attractive alternative for fully 20 percent of the passengers using Greentown airport. Nevertheless, experts reject the claim that turning Hevelia into a full-service airport would end the chronic delays at Greentown.

Which of the following, if true, most helps to justify the experts' position?

(A) Turning Hevelia into a full-service airport would require not only substantial construction at the airport itself, but also the construction of new access highways.

(B) A second largely undeveloped airstrip close to Greentown airport would be a more attractive alternative than Hevelia for many passengers who now use Greentown.

(C) Hevelia airstrip lies in a relatively undeveloped area but would, if it became a full-service airport, be a magnet for commercial and residential development.

(D) If an airplane has to wait to land, the extra jet fuel required adds significantly to the airline's costs.

(E) Several airlines use Greentown as a regional hub, so that most flights landing at Greentown have many passengers who then take different flights to reach their final destinations.

Evaluation of a Plan

Situation To avoid the delays now common at Greentown's airport, the number of scheduled flights there would need to be reduced by 10 percent. If the nearby Hevelia airstrip were expanded and upgraded, it would be an attractive alternative for 20 percent of Greentown airport's passengers. Still, experts do not believe that the delays at Greentown would end even if Hevelia were turned into a full-service airport.

Reasoning *Which statement most supports the experts' position?* If the number of flights at Greentown's airport did not drop by at least 10 percent, despite the fact that 20 percent of the passengers who currently use Greentown's airport would find nearby Hevelia airstrip an attractive alternative, then the delays would not be avoided. Airlines generally use certain airports as regional hubs—an airport through which an airline routes most of its traffic—so, even if many passengers would be willing to use Hevelia airstrip, the number of flights at Greentown may not decline significantly, or at all.

A The experts' position concerns what would happen to the flight delays at Greentown airport if the Hevelia airstrip were converted into a full-service airport. So the fact that there are great costs involved in making such a conversion—possibly making such a conversion unlikely—has no bearing on the effects such a conversion would have on flight delays at Greentown if the conversion were to be carried out.

B This statement indicates that the undeveloped airstrip near Greentown might be a better way to alleviate flight delays at Greentown, but it tells us nothing about the effects that converting the Hevelia airstrip to a full-service airport would have were it to be carried out.

C This in no way explains why converting the Hevelia airstrip into a full-service airport would not alleviate the problem with flight delays at Greentown.

D This provides a reason to think that reducing the number of flights at Greentown might make the airport more efficient. But that has no bearing on the effect that converting the Hevelia airstrip to a full-service airport might have on flight delays at Greentown.

E **Correct.** This statement provides support for the experts' position because it gives a reason for thinking that the number of scheduled flights at Greentown would not be reduced, even if Hevelia airstrip became an attractive alternative for some 20 percent of Greentown's passengers.

The correct answer is E.

571. For similar cars and comparable drivers, automobile insurance for collision damage has always cost more in Greatport than in Fairmont. Police studies, however, show that cars owned by Greatport residents are, on average, slightly less likely to be involved in a collision than cars in Fairmont. Clearly, therefore, insurance companies are making a greater profit on collision-damage insurance in Greatport than in Fairmont.

In evaluating the argument, it would be most useful to compare

(A) the level of traffic congestion in Greatport with the level of traffic congestion in Fairmont

(B) the cost of repairing collision damage in Greatport with the cost of repairing collision damage in Fairmont

(C) the rates Greatport residents pay for other forms of insurance with the rates paid for similar insurance by residents of Fairmont

(D) the condition of Greatport's roads and streets with the condition of Fairmont's roads and streets

(E) the cost of collision-damage insurance in Greatport and Fairmont with that in other cities

Argument Evaluation

Situation A particular kind of insurance, that for collision damage, costs more in Greatport than in Fairmont. The cars of Greatport residents are, however, less likely to be involved in collisions than are cars of Fairmont residents. So insurance companies must be making a greater profit on collision-damage insurance in Greatport than in Fairmont.

Reasoning *What would it help to consider in evaluating the argument?* Insurance companies would make greater profits on collision-damage insurance in Greatport than they make in Fairmont if they pay out less money in response to Greatport residents' claims than they do in response to Fairmont's residents' claims. That Greatport residents' cars are involved in fewer collisions than are Fairmont's residents' cars supports this—if there are fewer collisions overall, then the insurance companies might pay out less money overall. But the number of collisions is only one factor contributing to how much money an insurance company pays out in response to claims; another factor is the amount of damage inflicted on the cars involved in collisions and how much it costs to repair that damage. These costs would need to be considered before concluding that insurance companies' profits on collision-damage insurance are greater in Greatport than in Fairmont.

A The level of traffic congestion probably contributes to the frequency of collisions in each town. The information given, however, includes the statement that Greatport cars are less likely to be involved in collisions than are Fairmont cars. Why this occurs—whether, for example, traffic congestion is a contributory factor—is not relevant.

B **Correct.** This is clearly a factor that would affect the profitability of insurance in the two towns—and is therefore highly relevant to evaluating the argument, especially its conclusion.

C The argument's conclusion is about insurance companies' profits on collision-damage insurance alone, so other types of insurance, and the rates paid for them, are not relevant.

D The condition of the roads and streets in each town probably contributes to the frequency of collisions in each town. The information given, however, includes the statement that Greatport cars are less likely to be involved in collisions than are Fairmont cars. Why this is so—whether, for example, the condition of the roads is a contributory cause—is not relevant.

E Since the argument is concerned solely with collision-insurance costs and profits in Greatport and Fairmont, comparing the cost of insurance in those towns with the cost of insurance elsewhere would provide no useful insight.

The correct answer is B.

572. The air quality board recently informed Coffee Roast, a small coffee roasting firm, of a complaint regarding the smoke from its roaster. Recently enacted air quality regulations require machines roasting more than 10 pounds of coffee to be equipped with expensive smoke-dissipating afterburners. The firm, however, roasts only 8 pounds of coffee at a time. Nevertheless, the company has decided to purchase and install an afterburner.

Which of the following, if true, most strongly supports the firm's decision?

(A) Until settling on the new air quality regulations, the board had debated whether to require afterburners for machines roasting more than 5 pounds of coffee at a time.
(B) Coffee roasted in a machine equipped with an afterburner has its flavor subtly altered.
(C) The cost to the firm of an afterburner is less than the cost of replacing its roaster with a smaller one.
(D) Fewer complaints are reported in areas that maintain strict rules regarding afterburners.
(E) The firm has reason to fear that negative publicity regarding the complaints could result in lost sales.

Evaluation of a Plan

Situation After being informed of a complaint about smoke from its coffee roaster, a firm decided to purchase and install an afterburner to reduce or eliminate emissions of smoke, even though the roaster roasts too little coffee at a time for an afterburner to be legally required.

Reasoning *What would have been a good reason for the firm to buy and install the afterburner?* The only factors mentioned that might give the firm reason to buy an afterburner are the complaint about smoke and the regulations requiring an afterburner. Since the regulations do not apply in this case, the complaint is more likely to have motivated the firm's decision. Any serious potential consequences the firm might have faced from failure to address the complaint could have provided a good reason to buy and install the afterburner.

A If this debate had still been ongoing when the firm made its decision, uncertainty about the pending regulations might have justified the decision. But the debate had already been settled before the firm decided to purchase the afterburner, and the regulations clearly did not require one.

B An unspecified alteration in flavor is not clearly a good reason to use an afterburner—the afterburner might worsen the flavor.

C The firm's roaster was already small enough that the regulations did not require it to be replaced, even without an afterburner.

D This reason relates only to rules regarding afterburners, not to Coffee Roast's purchase of an afterburner, which was not mandated by regulations. Furthermore, it could be that the air quality regulations recently enacted are among the strictest in any region, which could result in fewer complaints regardless of whether Coffee Roast installs an afterburner.

E **Correct.** Since installing an afterburner is a plausible way to address the complaint and prevent future complaints, the firm has plausible reasons to believe this strategy will help it avoid the negative publicity and lost sales it fears. These considerations could have reasonably justified its decision.

The correct answer is E.

573. The tulu, a popular ornamental plant, does not reproduce naturally, and is only bred and sold by specialized horticultural companies. Unfortunately, the tulu is easily devastated by a contagious fungal rot. The government ministry plans to reassure worried gardeners by requiring all tulu plants to be tested for fungal rot before being sold. However, infected plants less than 30 weeks old have generally not built up enough fungal rot in their systems to be detected reliably. And many tulu plants are sold before they are 24 weeks old.

Which of the following, if performed by the government ministry, could logically be expected to overcome the problem with their plan to test for the fungal rot?

(A) Releasing a general announcement that tulu plants less than 30 weeks old cannot be effectively tested for fungal rot
(B) Requiring all tulu plants less than 30 weeks old to be labeled as such
(C) Researching possible ways to test tulu plants less than 24 weeks old for fungal rot
(D) Ensuring that tulu plants not be sold before they are 30 weeks old
(E) Quarantining all tulu plants from horticultural companies at which any case of fungal rot has been detected until those tulu plants can be tested for fungal rot

Evaluation of a Plan

Situation There is a contagious fungal rot that devastates the tulu, a popular ornamental plant. To reassure worried gardeners, the government ministry plans to require that tulu plants be tested for the rot before being sold. However, many tulu plants are sold before they are 24 weeks old, yet fungal rot in plants less than 30 weeks old generally cannot be detected reliably.

Reasoning *What could the government ministry do to overcome the problem?* The problem arises from the fact that tulu plants are frequently sold before they are 24 weeks old, which is too soon for any fungal rot that is present to have built up enough in their root systems to be detected. Since the goal of the testing is to ensure that infected tulu plants not be sold, an obvious solution would be to make sure that no plants are sold before they are old enough for fungal rot to have built up to a detectable level. Thus, tulu plants should not be sold before they are 30 weeks old.

A Releasing such an announcement would help overcome the problem if it guaranteed that no one would buy or sell tulu plants before the plants were 30 weeks old, but it is far from certain that such an announcement would guarantee this.

B Since some people may not be aware of the significance of such labeling, such labeling might have very little effect.

C There is no guarantee that such research will be successful at reducing the age at which tulu plants can be reliably tested.

D **Correct.** If the government ensures that no tulu plants less than 30 weeks of age are sold, then the specific problem mentioned in the passage would be overcome.

E This will not help overcome the problem. Such a quarantine program might lead horticultural companies to start selling tulu plants only if they are less than 24 weeks old, thereby minimizing the chance of quarantine by minimizing the chance of detection.

The correct answer is D.

574. People who do regular volunteer work tend to live longer, on average, than people who do not. It has been found that "doing good," a category that certainly includes volunteer work, releases endorphins, the brain's natural opiates, which induce in people a feeling of well-being. Clearly, there is a connection: Regular releases of endorphins must in some way help to extend people's lives.

Which of the following, if true, most seriously undermines the force of the evidence given as support for the hypothesis that endorphins promote longevity?

(A) People who do regular volunteer work are only somewhat more likely than others to characterize the work they do for a living as "doing good."

(B) Although extremely high levels of endorphins could be harmful to health, such levels are never reached as a result of the natural release of endorphins.

(C) There are many people who have done some volunteer work but who do not do such work regularly.

(D) People tend not to become involved in regular volunteer work unless they are healthy and energetic to begin with.

(E) Releases of endorphins are responsible for the sense of well-being experienced by many long-distance runners while running.

Argument Evaluation

Situation People who volunteer regularly live longer on average than people who do not. Doing good work, including volunteer work, releases endorphins, which induce a feeling of well-being.

Reasoning *What additional findings would suggest that the cited evidence does not indicate that endorphins increase longevity?* The argument implicitly assumes that the reason regular volunteers tend to live longer is that volunteering lengthens their lives. It further assumes that no factor that is correlated with volunteering, other than the endorphin release, would plausibly explain how volunteering could have this effect. Findings that cast doubt on either of these assumptions would undermine the connection between the cited evidence and the conclusion that endorphins promote longevity.

A Volunteering might greatly boost volunteers' endorphin levels even if the work the volunteers do for a living is no different from other people's work.

B Even if unnaturally high endorphin levels could harm health, the levels attainable through volunteer work may promote health.

C The argument is about an observed correlation in a certain group of people (those who regularly do volunteer work). How many people are outside that group (i.e., do not regularly do volunteer work) is independent of the question of what causes the observed correlation. Even if some people volunteer only occasionally, volunteering regularly may promote longevity by causing regular releases of endorphins.

D **Correct.** This suggests that the initially better health of people who choose to volunteer could fully explain the cited correlation between volunteering and longevity.

E Unless we are also given evidence that long-distance runners tend not to live longer than other people, this does not undermine the purported evidence in the argument. Endorphins might promote longevity in both regular volunteers and long-distance runners.

The correct answer is D.

575. In Mernia commercial fossil hunters often sell important fossils they have found, not to universities or museums, but to individual collectors, who pay much better but generally do not allow researchers access to their collections. To increase the number of fossils available for research, some legislators propose requiring all fossils that are found in Mernia to be sold only to universities or museums.

Which of the following, if true, most strongly indicates that the legislators' proposal will fail to achieve its goal?

(A) Some fossil hunters in Mernia are not commercial fossil hunters, but rather are amateurs who keep the fossils that they find.

(B) Most fossils found in Mernia are common types that have little scientific interest.

(C) Commercial fossil hunters in Mernia currently sell some of the fossils they find to universities and museums.

(D) Many universities in Mernia do not engage in fossil research.

(E) Most fossils are found by commercial fossil hunters, and they would give up looking for fossils if they were no longer allowed to sell to individual collectors.

Evaluation of a Plan

Situation Fossil hunters in Mernia often sell important fossils to collectors who do not make them accessible to researchers. To increase the number of fossils available for research, some legislators propose requiring all fossils found in Mernia to be sold only to universities or museums.

Reasoning *What would most strongly suggest that requiring all fossils found in Mernia to be sold only to universities or museums would not increase the number of fossils available for research?* To increase the number of fossils available for research, the proposed requirement will have to be implemented and effectively enforced. It will presumably have to increase the total number of fossils sold to universities and museums. And those institutions will have to make more of the fossils in their collections available to researchers than the private collectors do. Evidence that any of those conditions will not be fulfilled would suggest that the legislators' proposal will fail to achieve its goal.

A Even if the legislation does not affect fossils kept by amateurs, it might still result in many more fossils being sold to universities or museums rather than to private collectors, and thus might still increase the number of fossils available for research.

B Even if few Mernian fossils are interesting to researchers, the legislation could still achieve its goal of making more fossils available for research.

C Even if commercial fossil hunters already sell a few fossils to universities and museums, the legislation could encourage them to sell many more fossils.

D The universities that do not engage in fossil research presumably will not be interested in buying fossils even if the legislation passes. But the fossil hunters can just sell their fossils to other universities and museums that do engage in fossil research.

E **Correct.** This suggests that if the legislation passes, fossils will simply be left in the ground rather than sold to private collectors. That would not increase the total number of fossils available for research.

The correct answer is E.

576. The Eurasian ruffe, a fish species inadvertently introduced into North America's Great Lakes in recent years, feeds on the eggs of lake whitefish, a native species, thus threatening the lakes' natural ecosystem. To help track the ruffe's spread, government agencies have produced wallet-sized cards about the ruffe. The cards contain pictures of the ruffe and explain the danger they pose; the cards also request anglers to report any ruffe they catch.

Which of the following, if true, would provide most support for the prediction that the agencies' action will have its intended effect?

(A) The ruffe has spiny fins that make it unattractive as prey.

(B) Ruffe generally feed at night, but most recreational fishing on the Great Lakes is done during daytime hours.

(C) Most people who fish recreationally on the Great Lakes are interested in the preservation of the lake whitefish because it is a highly prized game fish.

(D) The ruffe is one of several nonnative species in the Great Lakes whose existence threatens the survival of lake whitefish populations there.

(E) The bait that most people use when fishing for whitefish on the Great Lakes is not attractive to ruffe.

Evaluation of a Plan

Situation The Eurasian ruffe, a species not native to the Great Lakes, is threatening the native lake whitefish. Government agencies hope that wallet-sized cards identifying the ruffe, explaining the danger they pose, and asking anglers to report their ruffe catches will help them track the ruffe's spread.

Reasoning *What point would support the idea that the agencies' action will have its intended effect?* The cards are intended to help government agencies track the ruffe's spread. They will be useful for this purpose only if anglers actually report the ruffe they catch. Thus anything that increases the odds of anglers' doing such reporting would make it more likely that the cards will have their intended effect.

A If ruffe are unattractive as prey, they will probably spread more quickly in the Great Lakes. This will most likely have little effect on whether the wallet-sized cards will help government agencies track the ruffe.

B If ruffe feed at night, while fishing is done in the daytime, it is unlikely that anglers would catch ruffe. Thus few catches would be reported to government agencies, making it more difficult for those agencies to track the spread of ruffe.

C **Correct.** This statement properly identifies a point that supports the prediction that the agencies' action will have its intended effect—that is, those who are interested in preserving the lake whitefish will be likely to report catches of ruffe, which threaten whitefish, thus enabling the agencies' tracking of the spread of ruffe.

D That the ruffe is one of several nonnative species threatening the Great Lakes lessens the odds that the whitefish will survive, but this has no effect on the question of whether the wallet-sized cards will help government agencies track the ruffe's spread.

E This would make it likely that anglers would catch few ruffe. If anglers do not catch many ruffe, there will not be many to report to government agencies, which would in turn make it more difficult for those agencies to track the ruffe's spread.

The correct answer is C.

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

Although the number of large artificial satellites orbiting the Earth is small compared to the number of small pieces of debris in orbit, the large satellites interfere more seriously with telescope observations because of the strong reflections they produce. Because many of those large satellites have ceased to function, the proposal has recently been made to eliminate interference from nonfunctioning satellites by exploding them in space. This proposal, however, is ill conceived, since ________.

(A) many nonfunctioning satellites remain in orbit for years

(B) for satellites that have ceased to function, repairing them while they are in orbit would be prohibitively expensive

(C) there are no known previous instances of satellites' having been exploded on purpose

(D) the only way to make telescope observations without any interference from debris in orbit is to use telescopes launched into extremely high orbits around the Earth

(E) a greatly increased number of small particles in Earth's orbit would result in a blanket of reflections that would make certain valuable telescope observations impossible

Evaluation of a Plan

Situation Many large artificial satellites orbiting Earth no longer function. Reflections from these satellites interfere with telescope observations. A proposal has been made to eliminate this interference by exploding these satellites in space.

Reasoning *Why is the proposal ill conceived?* If exploding the large artificial satellites—thereby creating a large amount of debris—would result in an increase in interference with telescope observation, the proposal would be self-defeating, and therefore would be ill conceived.

A The fact that many nonfunctioning satellites remain in orbit for years would seem to make the proposal *more* attractive. If large nonfunctioning artificial satellites generally do not remain in orbit for years—e.g., if they fall out of orbit—then there might be no need to explode the satellites. Therefore this statement is not correct.

B This statement, too, makes the proposal more attractive—the opposite of what is called for. If nonfunctioning satellites cannot be repaired, then that eliminates one possible reason for not blowing them up.

C The fact that there are no known instances of intentional explosions of satellites does not show that the plan is ill conceived. At most this might suggest that the consequences of such an explosion are not well understood, but even that is not very strongly suggested. For instance, if large artificial satellites have accidentally blown up, scientists may have studied the results and have good reason to believe that no ill effects will result from exploding the satellites.

D This is not a cogent reason for thinking the proposal to be ill conceived. Even if the proposal would not eliminate *all interference* with ground based telescopes, it might still greatly reduce interference.

E **Correct.** If exploding large nonfunctioning satellites would lead to more interference, then we have a reason to think that the proposal is ill conceived.

The correct answer is E.

578. Thyrian lawmaker: Thyria's Cheese Importation Board inspects all cheese shipments to Thyria and rejects shipments not meeting specified standards. Yet only 1 percent is ever rejected. Therefore, since the health consequences and associated economic costs of not rejecting that 1 percent are negligible, whereas the board's operating costs are considerable, for economic reasons alone the board should be disbanded.

Consultant: I disagree. The threat of having their shipments rejected deters many cheese exporters from shipping substandard product.

The consultant responds to the lawmaker's argument by

(A) rejecting the lawmaker's argument while proposing that the standards according to which the board inspects imported cheese should be raised
(B) providing evidence that the lawmaker's argument has significantly overestimated the cost of maintaining the board
(C) objecting to the lawmaker's introducing into the discussion factors that are not strictly economic
(D) pointing out a benefit of maintaining the board, which the lawmaker's argument has failed to consider
(E) shifting the discussion from the argument at hand to an attack on the integrity of the cheese inspectors

Argument Construction

Situation The Thyrian lawmaker argues that the Cheese Importation Board should be disbanded, because its operating costs are high and it rejects only a small percentage of the cheese it inspects. The consultant disagrees, pointing out that the board's inspections deter those who export cheese to Thyria from shipping substandard cheese.

Reasoning *What strategy does the consultant use in the counterargument?* The consultant indicates to the lawmaker that there is a reason to retain the board that the lawmaker has not considered. The benefit the board provides is not that it identifies a great deal of substandard cheese and rejects it (thus keeping the public healthy), but that the possibility that their cheese could be found substandard is what keeps exporters from attempting to export low-quality cheese to Thyria.

A The consultant does reject the lawmaker's argument, but the consultant does not propose higher standards. Indeed, in suggesting that the board should be retained, the consultant implies that the board's standards are appropriate.

B The consultant does not provide any evidence related to the board's cost.

C The only point the lawmaker raises that is not strictly economic is about the health consequences of disbanding the board, but the consultant does not address this point at all.

D **Correct.** This statement properly identifies the strategy the consultant employs in his or her counterargument. The consultant points out that the board provides a significant benefit that the lawmaker did not consider.

E The consultant does not attack the integrity of the cheese inspectors; to the contrary, the consultant says that their inspections deter the cheese exporters from shipping substandard cheese.

The correct answer is D.

579. The growing popularity of computer-based activities was widely expected to result in a decline in television viewing, since it had been assumed that people lack sufficient free time to maintain current television-viewing levels while spending increasing amounts of free time on the computer. That assumption, however, is evidently false: In a recent mail survey concerning media use, a very large majority of respondents who report increasing time spent per week using computers report no change in time spent watching television.

Which of the following would it be most useful to determine in order to evaluate the argument?

(A) Whether a large majority of the survey respondents reported watching television regularly

(B) Whether the amount of time spent watching television is declining among people who report that they rarely or never use computers

(C) Whether the type of television programs a person watches tends to change as the amount of time spent per week using computers increases

(D) Whether a large majority of the computer owners in the survey reported spending increasing amounts of time per week using computers

(E) Whether the survey respondents' reports of time spent using computers included time spent using computers at work

Argument Evaluation

Situation The argument is intended to debunk the assumption that people lack sufficient free time to maintain television-viewing levels while spending increasing amounts of free time on the computer. To do so, it cites a survey of media use in which a large majority of respondents who spend increasing amounts of time using computers also claim to have not altered the amount of time they spend watching television.

Reasoning *What would it be most useful to know in order to evaluate the argument?* The argument uses the survey results to claim that people have enough free time to both maintain their television viewing levels and spend increasing amounts of free time on the computer. But the survey, as reported here, did not address whether people are spending their *free time* on the computer; the respondents reported increasing *time* spent per week using computers. Since the argument is about free time, it is important to know whether this is actually what the respondents were reporting.

A The argument is concerned with the *change* in the amount of television watched by those whose computer use increased, so whether the survey's respondents reported watching television regularly is irrelevant.

B The argument is concerned with the change in the amount of television watched by those whose computer use has increased, so it does not matter whether the amount of time spent watching television among people who do not use computers is declining, remaining the same, or increasing.

C The argument is concerned with the *amount* of television watched by those whose computer use has increased, not the type of television programs such a person does or does not watch.

D The argument here is concerned with people who report spending increasing amounts of time on the computer; what computer owners do is a separate question.

E **Correct.** This statement properly identifies something that would be useful to know in evaluating the argument: whether the survey data included time spent using computers at work—if it did, this would make the data misleading as evidence for the argument's conclusion.

The correct answer is E.

580. Although the school would receive financial benefits if it had soft drink vending machines in the cafeteria, we should not allow them. Allowing soft drink machines there would not be in our students' interest. If our students start drinking more soft drinks, they will be less healthy.

The argument depends on which of the following?

(A) If the soft drink vending machines were placed in the cafeteria, students would consume more soft drinks as a result.
(B) The amount of soft drinks that most students at the school currently drink is not detrimental to their health.
(C) Students are apt to be healthier if they do not drink soft drinks at all than if they just drink small amounts occasionally.
(D) Students will not simply bring soft drinks from home if the soft drink vending machines are not placed in the cafeteria.
(E) The school's primary concern should be to promote good health among its students.

Argument Construction

Situation Allowing soft drink vending machines in a school cafeteria would financially benefit the school, but students who drink more soft drinks would become less healthy.

Reasoning *What must be true in order for the claim that students drinking more soft drinks would cause them to become less healthy to justify the conclusion that soft drink vending machines should not be allowed in the cafeteria?* The argument is that because drinking more soft drinks would be unhealthy for the students, allowing the vending machines would not be in the students' interest, so the vending machines should not be allowed. This reasoning depends on the implicit factual assumption that allowing the vending machines would result in the students drinking more soft drinks. It also depends on the implicit value judgment that receiving financial benefits should be less important to the school than preventing a situation that would make the students less healthy.

A **Correct.** If the cafeteria vending machines would not result in students consuming more soft drinks, then allowing the machines would not harm the students' health in the way the argument assumes.

B Even if the amount of soft drinks the students currently drink were unhealthy, enabling the students to drink more could make them even less healthy.

C Even if drinking small amounts of soft drinks occasionally would not harm the students, vending machines in the cafeteria could lead the students to drink excessive amounts.

D Even if students who cannot buy soft drinks in the cafeteria sometimes bring them from home instead, adding vending machines in the cafeteria could increase the students' overall soft drink consumption.

E A concern does not have to be the primary one in order to be valid and important. It could be held that promoting students' good health should not be the schools' primary concern but should still be a more important concern than the financial benefits from the vending machines.

The correct answer is A.

581. Many athletes inhale pure oxygen after exercise in an attempt to increase muscular reabsorption of oxygen. Measured continuously after exercise, however, the blood lactate levels of athletes who inhale pure oxygen are practically identical, on average, to those of athletes who breathe normal air. The lower the blood lactate level is, the higher the muscular reabsorption of oxygen is.

If the statements above are all true, they most strongly support which of the following conclusions?

(A) Athletes' muscular reabsorption of oxygen is not increased when they inhale pure oxygen instead of normal air.

(B) High blood lactate levels cannot be reduced.

(C) Blood lactate levels are a poor measure of oxygen reabsorption by muscles.

(D) The amount of oxygen reabsorbed by an athlete's muscles always remains constant.

(E) The inhaling of pure oxygen has no legitimate role in athletics.

Argument Construction

Situation Blood lactate levels after exercise are practically identical in athletes who breathe normal air and in those who inhale pure oxygen after exercise. The lower the blood lactate level, the higher the muscular reabsorption of oxygen.

Reasoning *What conclusion do the stated facts most strongly support?* We are told that lower blood lactate levels correspond consistently to higher muscular reabsorption of oxygen. Since athletes who breathe pure oxygen after exercise have blood lactate levels practically identical to those in athletes who breathe normal air, probably muscular reabsorption of oxygen does not differ significantly between athletes who breathe pure oxygen and those who breathe pure air.

A **Correct.** As explained above, the stated facts suggest that muscular reabsorption of oxygen does not differ significantly between athletes who breathe pure oxygen and those who breathe pure air. So breathing pure oxygen instead of normal air after exercise probably does not increase athletes' muscular reabsorption of oxygen.

B None of the statements indicates that blood lactate levels cannot be reduced by means other than inhaling pure oxygen.

C We are told that blood lactate levels are negatively correlated with muscular reabsorption of oxygen. This negative correlation might allow muscular reabsorption of oxygen to be precisely determined by measuring blood lactate levels.

D Muscular reabsorption of oxygen might vary for reasons unrelated to whether an athlete has been inhaling pure oxygen.

E Inhaling pure oxygen might have some legitimate role unrelated to muscular reabsorption of oxygen.

The correct answer is A.

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

Sviatovin is a medieval Moringian text whose author and exact date of composition are unknown. However, the events in the life of Prince Sviatov that the text describes occurred in 1165, and in the diagram of Sviatov's family that accompanies the text his father, who died in 1167, is identified as still living. Thus *Sviatovin* must have been written between 1165 and 1167, assuming that ________.

(A) the life of Prince Sviatov is not the subject of any other medieval Moringian texts
(B) the author of *Sviatovin* intended it to provide as accurate a report about Prince Sviatov's exploits as possible
(C) the diagram accurately represents the composition of Sviatov's family at the time Sviatovin was written
(D) *Sviatovin* is the earliest Moringian text whose composition can be dated to within a few years
(E) *Sviatovin* was not written by Sviatov's father himself

Argument Construction

Situation A medieval Moringian text was written about Prince Sviatov. It is not known exactly when the text was written, but the events described in it occurred in 1165 and a diagram in the text indicates that Sviatov's father—who died in 1167—was alive at the time it was composed.

Reasoning *What completion of the blank would provide the best reason for believing the argument's conclusion?* The argument's conclusion is that the book *Sviatovin* was written between 1165 and 1167. The reasoning given is this: It could not have been written before 1165 because it includes events that took place in that year. It could not have been written after 1167 because Sviatov's father died in that year. A diagram in the book suggests he was alive when the book was written. Was the diagram correct in that suggestion? The argument depends on assuming that it was.

A The argument focuses on one text and its date of composition. The argument does not need to make any assumptions about other texts.

B The argument does not assume this. Issues about the accurate reporting of Sviatov's exploits (or about the author's intention to report them accurately) are irrelevant to the argument, which hinges on the accuracy of the diagram that accompanies the text. The diagram does not report Sviatov's exploits.

C **Correct.** The reasoning in the argument assumes that the diagram was correct in representing the Prince's father as still living when the text was composed. If his father was not living when the text was written, then the information that his father actually died in 1167 is no guarantee that the text was composed by then.

D See the explanation for answer choice (A) above. The degree of precision with which scholars have succeeded in dating other Moringian texts is entirely irrelevant.

E The conclusion concerns when *Sviatovin* was written and not by whom it was written. If, contrary to answer choice (E), it were known that the author was Sviatov's father, this would actually provide strong support for the argument's conclusion. Thus answer choice (E) does not provide a good reason for the argument's conclusion.

The correct answer is C.

583. A study of ticket sales at a summer theater festival found that people who bought tickets to individual plays had a no-show rate of less than 1 percent, while those who paid in advance for all ten plays being performed that summer had a no-show rate of nearly 30 percent. This may be at least in part because the greater the awareness customers retain about the cost of an item, the more likely they are to use it.

Which of the following would, if true, best serve as an alternative explanation of the results of the study?

(A) The price per ticket was slightly cheaper for those who bought all ten tickets in advance.

(B) Many people who attended the theater festival believed strongly that they should support it financially.

(C) Those who attended all ten plays became eligible for a partial refund.

(D) Usually, people who bought tickets to individual plays did so immediately prior to each performance that they attended.

(E) People who arrived just before the performance began could not be assured of obtaining seats in a preferred location.

Argument Construction

Situation People who bought tickets to individual plays at a theater festival had a much lower no-show rate than did people who paid in advance for all ten plays.

Reasoning *What factor other than greater awareness of the ticket costs could explain why people who bought tickets individually were more likely to attend the plays?* The passage suggests that people who bought tickets individually were more likely to attend the plays because they were more vividly aware of what they had paid for each ticket. But there are other possible explanations—perhaps the people who bought the tickets individually were more eager to attend each play for its own sake, or had other characteristics or incentives that made them more likely to attend the plays.

A A slight price difference would not plausibly explain why the no-show rate was thirty times greater among those who bought all the tickets in advance than among those who bought them individually.

B This could be true of many people who bought their tickets individually as well as many who bought them in advance.

C This would provide an added incentive for those who bought tickets in advance to attend all the plays.

D **Correct.** If people who bought individual tickets usually did so right before each performance, they would have much less time after buying the tickets to change their minds about whether to attend than would people who bought all the tickets in advance.

E If anything, this might present an additional difficulty for those who bought individual tickets without advance planning, so it would not help to explain the lower no-show rate among buyers of individual tickets.

The correct answer is D.

584. Although there is no record of poet Edmund Spenser's parentage, we do know that as a youth Spenser attended the Merchant Tailors' School in London for a period between 1560 and 1570. Records from this time indicate that the Merchant Tailors' Guild then had only three members named Spenser: Robert Spenser, listed as a gentleman; Nicholas Spenser, elected the Guild's Warden in 1568; and John Spenser, listed as a "journeyman cloth-maker." Of these, the last was likely the least affluent of the three—and most likely Edmund's father, since school accounting records list Edmund as a scholar who attended the school at a reduced fee.

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

(A) Anybody in sixteenth century London who made clothing professionally would have had to be a member of the Merchant Tailors' Guild.

(B) The fact that Edmund Spenser attended the Merchant Tailors' School did not necessarily mean that he planned to become a tailor.

(C) No member of the Guild could become Guild warden in sixteenth century London unless he was a gentleman.

(D) Most of those whose fathers were members of the Merchant Tailors' Guild were students at the Merchant Tailors' School.

(E) The Merchant Tailors' School did not reduce its fees for the children of the more affluent Guild members.

Argument Construction

Situation Records indicate that the poet Edmund Spenser attended the Merchant Tailors' School for a reduced fee as a youth. There is no record of his parentage, but at the time the Merchant Tailors' Guild had only three members named Spenser, of whom the least affluent was probably John Spenser.

Reasoning *What must be true in order for the cited facts to support the conclusion that John Spenser was probably Edmund Spenser's father?* The implicit reasoning is that since Edmund Spenser attended the Merchant Tailors' School at a reduced fee, his father must have been poor. And since John Spenser was probably the poorest of the three men named Spenser in the Merchant Tailors' Guild, he was probably Edmund Spenser's father. This reasoning assumes that only the children of poor parents had reduced fees at the Merchant Tailors' School, that the children at the school generally had fathers in the Merchant Tailors' Guild, that children in that time and place generally shared their fathers' surnames, and that the two other Spensers in the Merchant Tailors' Guild were not poor enough for their children to qualify for reduced fees.

A John Spenser, as a tailor and member of the guild, could have been Edmund Spenser's father even if some other professional tailors did not belong to the guild and did not have children at the school.

B Although Edmund Spenser became a poet as an adult, he and all his classmates might have attended the school as children because they planned to become tailors.

C The argument assumes that a Guild's Warden probably would have been wealthier than a journeyman cloth-maker, but that might have been probable even if the Guild's Warden were not a "gentleman."

D Even if most children of fathers in the guild did not attend the school, all the children who did attend the school might have had fathers in the guild.

E **Correct.** If the school reduced its fees for children of wealthier guild members, then the fact that Edmund Spenser's fees were reduced would not provide evidence that his father was the poorest of the three Spensers in the guild, as the argument requires.

The correct answer is E.

585. Trancorp currently transports all its goods to Burland Island by truck. The only bridge over the channel separating Burland from the mainland is congested, and trucks typically spend hours in traffic. Trains can reach the channel more quickly than trucks, and freight cars can be transported to Burland by barges that typically cross the channel in an hour. Therefore, to reduce shipping time, Trancorp plans to switch to trains and barges to transport goods to Burland.

Which of the following would be most important to know in determining whether Trancorp's plan, if implemented, is likely to achieve its goal?

(A) Whether transportation by train and barge would be substantially less expensive than transportation by truck

(B) Whether there are boats that can make the trip between the mainland and Burland faster than barges can

(C) Whether loading the freight cars onto barges is very time consuming

(D) Whether the average number of vehicles traveling over the bridge into Burland has been relatively constant in recent years

(E) Whether most trucks transporting goods into Burland return to the mainland empty

Evaluation of a Plan

Situation Transporting goods to Burland Island by truck takes many hours, because the trucks must take the congested single bridge that reaches the island. Trains can get goods to the channel separating Burland from the mainland more quickly than trucks can, and the freight cars can then be loaded onto barges that can cross the channel in an hour. Trancorp plans to reduce shipping time by switching from trucks to trains and barges.

Reasoning *What would it be most important to know in determining whether Trancorp will achieve its goal of reducing shipping time?* Trancorp's plan could fail to reduce shipping time if there were some aspect of the new shipping process, involving the trains and the barges, that took more time than anticipated.

A The goal of Trancorp's plan is to reduce shipping time. This might lower costs—but whether or not it does so is not directly relevant to whether or not the plan's goal is achieved.

B Trancorp's plan involves the use of barges. If some boats can make the trip between the mainland and Burland faster than barges can, that might be something to consider for the future, but it has nothing to do with whether the current plan will reduce shipping time.

C **Correct.** This statement properly identifies something that would be important in determining whether Trancorp's plan for reducing shipping time will achieve its goal—that is, whether loading the freight cars onto the barges will use up all the time saved by not using trucks.

D Regardless of variation in traffic, the bridge, according to the information provided in the passage, is congested and typically causes trucking delays. Given this information, the degree of variation is not helpful in evaluating Transcorp's plan.

E The state of the trucks returning to the mainland has nothing to do with whether Trancorp's plan for reducing shipping time will achieve its goal.

The correct answer is C.

586. Rainwater contains hydrogen of a heavy form called deuterium. The deuterium content of wood reflects the deuterium content of rainwater available to trees during their growth. Wood from trees that grew between 16,000 and 24,000 years ago in North America contains significantly more deuterium than wood from trees growing today. But water trapped in several North American caves that formed during that same early period contains significantly less deuterium than rainwater in North America contains today.

Which of the following, if true, most helps to reconcile the two findings?

(A) There is little deuterium in the North American caves other than the deuterium in the water trapped there.

(B) Exposure to water after a tree has died does not change the deuterium content of the wood.

(C) Industrialization in North America over the past 100 years has altered the deuterium content of rain.

(D) Trees draw on shallow groundwater from rain that falls during their growth, whereas water trapped in caves may have fallen as rainwater thousands of years before the caves formed.

(E) Wood with a high deuterium content is no more likely to remain preserved for long periods than is wood with a low deuterium content.

Argument Construction

Situation In North America, wood from trees that grew 16,000 to 24,000 years ago contains more deuterium than wood from trees growing today. But water in caves that formed during that same period contains less deuterium than rainwater contains today.

Reasoning *What could explain the puzzling discrepancy between the observed deuterium levels in wood and in caves?* Since the deuterium content of wood from trees reflects the deuterium content of rainwater available to the trees while they grew, the deuterium levels observed in wood suggests that North American rainwater contained more deuterium 16,000 to 24,000 years ago than it contains today. But this conclusion seems at odds with the low deuterium levels in water in caves that formed 16,000 to 24,000 years ago. Several factors might explain the discrepancy: the water in those caves might not be rainwater from the period when the caves formed; or some natural process might have altered the deuterium levels in the cave water or the wood; or the wood or caves in which deuterium levels were measured might be statistically abnormal somehow.

A If the caves had absorbed deuterium out of the rainwater trapped in them, there would probably be deuterium in the cave walls. So the observation that there is little deuterium in the caves apart from that in the water eliminates one possible explanation for the oddly low deuterium levels in the cave water.

B This suggests that the deuterium levels in the wood accurately reflect higher deuterium levels in rainwater that fell 16,000 to 24,000 years ago, but it does not explain why the deuterium levels are so low in water in the caves that formed then.

C This could explain why deuterium levels in rainwater have changed, but it does not help explain the discrepancy between the high deuterium levels in the wood and the low deuterium levels in the cave water.

D **Correct.** If the water in the caves fell as rainwater thousands of years before the caves formed, it may date from a period when rainwater contained much less deuterium than during the period 16,000 to 24,000 years ago, and much less than today.

E If wood with high deuterium content were more likely to be preserved, then wood from 16,000 to 24,000 years ago might have a high deuterium content even if the rainwater then had a low deuterium content. So the observation that wood with more deuterium is not more likely to be preserved eliminates one possible explanation for the discrepancy.

The correct answer is D.

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

NowNews, although still the most popular magazine covering cultural events in Kalopolis, has recently suffered a significant drop in advertising revenue because of falling circulation. Many readers have begun buying a competing magazine that, at 50 cents per copy, costs less than *NowNews* at $1.50 per copy. In order to boost circulation and thus increase advertising revenue, *NowNews's* publisher has proposed making it available at no charge, but this proposal has a serious drawback, since ________.

(A) Those Kalopolis residents with the greatest interest in cultural events are regular readers of both magazines.

(B) One reason *NowNews's* circulation fell was that its competitor's reporting on cultural events was superior.

(C) The newsstands and stores that currently sell *NowNews* will no longer carry it if it is being given away for free.

(D) At present, 10 percent of the total number of copies of each issue of *NowNews* are distributed free to students on college campuses in the Kalopolis area.

(E) *NowNews's* competitor would begin to lose large amounts of money if it were forced to lower its cover price.

Argument Construction

Situation *NowNews* is suffering declines in circulation and advertising revenue due to competition from a lower-priced magazine. The publisher proposes offering *NowNews* for free to reverse these declines.

Reasoning *What would suggest that the publisher's proposal will fail to increase circulation and advertising revenue?* The proposal's intended effect is simply to increase advertising revenue by increasing circulation. Any evidence that offering the magazine for free will not result in more copies being circulated or will not attract advertisers would therefore be evidence of a drawback in the proposal. So a statement offering such evidence would logically complete the argument.

A The fact that certain highly motivated Kalopolis residents still read *NowNews* even at a cost of $1.50 per issue leaves open the possibility that providing the magazine free might still boost readership.

B This suggests that improving its cultural reporting might help *NowNews* increase its circulation, not that the publisher's proposal will fail to do so.

C **Correct.** If the proposal leads newsstands and stores to stop carrying *NowNews*, circulation and advertising revenue would probably decline as a result.

D Even if 10 percent of the copies of *NowNews* are already distributed for free, distributing the remaining 90 percent for free could still increase circulation and advertising revenue as the publisher intends.

E Forcing a competing magazine to lower its cover price and lose lots of money would be an advantage rather than a drawback of the proposal, as far as the publisher of *NowNews* was concerned.

The correct answer is C.

588. Archaeologist: Researchers excavating a burial site in Cyprus found a feline skeleton lying near a human skeleton. Both skeletons were in the same sediment at the same depth and equally well-preserved, suggesting that the feline and human were buried together about 9,500 years ago. This shows that felines were domesticated around the time farming began, when they would have been useful in protecting stores of grain from mice.

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

(A) Archaeologists have not found any remains of stores of grain in the immediate vicinity of the burial site.

(B) The burial site in Cyprus is substantially older than any other known burial site in which a feline skeleton and a human skeleton appear to have been buried together.

(C) Paintings found near the burial site seem to show people keeping felines as domestic companions, but do not show felines hunting mice.

(D) In Cyprus, there are many burial sites dating from around 9,500 years ago in which the remains of wild animals appear to have been buried alongside human remains.

(E) Before felines were domesticated, early farmers had no effective way to protect stores of grain from mice.

Argument Evaluation

Situation A human skeleton and a feline skeleton were apparently buried together in Cyprus about 9,500 years ago.

Reasoning *What would most strongly suggest that the skeletons do not show that felines were domesticated around the time farming began?* The argument implicitly assumes that farming in Cyprus began around 9,500 years ago, so evidence against that assumption would weaken the argument. The argument could also be weakened by evidence that felines were domesticated much earlier, that the feline skeleton was not from a domesticated cat, or that the two skeletons were not actually buried together around 9,500 years ago.

A Even if archaeologists searched for evidence of a grain store, the fact that no such evidence was found near the burial site is at best only weak evidence that no grain store existed there or slightly farther away.

B The lack of corroborating evidence from other burial sites would weaken the argument slightly but would still be compatible with the hypothesis that this site revealed one of the very first burials of a domesticated cat.

C This would cast doubt on the hypothesis that cats were domesticated mainly to protect stores of grain, but not on the argument's conclusion that cats were domesticated around the time farming began.

D **Correct.** If many wild animals were buried alongside humans in Cyprus around 9,500 years ago, then the feline skeleton is just as likely to be that of a wild animal than that of a domesticated cat.

E Since this would provide an additional reason why early farmers might have domesticated the local cats, it would strengthen rather than weaken the argument.

The correct answer is D.

589. The heavy traffic in Masana is a growing drain on the city's economy—the clogging of the streets of the central business district alone cost the economy more than $1.2 billion over the past year. In order to address this problem, officials plan to introduce congestion pricing, by which drivers would pay to enter the city's most heavily trafficked areas during the busiest times of the day.

Which of the following, if true, would most strongly indicate that the plan will be a success?

(A) Approximately one-fifth of the vehicles in the central business district are in transit from one side of the city to the other.

(B) Planners expect that, without congestion pricing, traffic in Masana is likely to grow by 6 percent in the next five years.

(C) In other urban areas, congestion pricing has strongly encouraged carpooling (sharing of rides by private commuters).

(D) Several studies have shown that a reduction in traffic of 15 percent in Masana could result in 5,500 or more new jobs.

(E) Over 30 percent of the vehicles in the city's center are occupied by more than one person.

Evaluation of a Plan

Situation Traffic congestion in Masana has been harming the city's economy. To address the problem, officials plan to make drivers pay to enter the city's most heavily trafficked areas during the busiest times of day.

Reasoning *What would most strongly suggest that the plan will reduce the harm to Masana's economy from traffic congestion?* In order to succeed, the plan will have to be implemented and effectively enforced. Furthermore, the prices drivers pay will have to be high enough to significantly change their behavior in ways that reduce the amount of traffic congestion in the city. Finally, the economic benefits from the reduced traffic congestion will have to substantially outweigh any economically damaging side effects of the congestion pricing. Any evidence that any of these conditions will hold would provide at least some support for the prediction that the plan will succeed.

A This provides no evidence that the congestion pricing would affect the behavior of either the one-fifth of drivers whose vehicles traverse the city or of the other four-fifths of drivers, nor does it give any evidence that the plan would produce overriding economic benefits.

B This indicates that the traffic problem will grow worse if the plan is not implemented, but it does not provide any evidence that the plan will help address the problem.

C **Correct.** This indicates that similar plans have successfully changed drivers' behavior in other cities in a way likely to reduce the number of cars on the road in heavily trafficked areas at busy times of day without producing harmful economic side effects. Thus, it provides evidence that the strategy could also be successful in Masana.

D Although this suggests that reducing traffic congestion would be economically beneficial, it doesn't provide any evidence that the plan will succeed in reducing traffic congestion.

E This suggests that many drivers in the city center are already carpooling, which, if anything, indicates that the plan will be less able to further affect those drivers' behavior and thus could be less effective than it might otherwise be.

The correct answer is C.

590. Economist: The most economically efficient way to reduce emissions of air pollutants is to tax them in proportion to the damage they are likely to cause. But in Country Y, many serious pollutants are untaxed and unregulated, and policy makers strongly oppose new taxes. Therefore, the best way to achieve a reduction in air pollutant emissions in Country Y would be to institute fixed upper limits on them.

Which of the following is an assumption of the economist's argument?

(A) Policy makers in Country Y oppose all new taxes equally strongly, regardless of any benefits they may provide.
(B) Country Y's air pollutant emissions would not fall significantly if they were taxed in proportion to the damage they are likely to cause.
(C) Policy makers in Country Y strongly favor reductions in air pollutant emissions.
(D) Country Y's policy makers believe that air pollutant emissions should be reduced with maximum economic efficiency.
(E) Policy makers in Country Y do not oppose setting fixed upper limits on air pollutant emissions as strongly as they oppose new taxes.

Argument Construction

Situation Although taxing air pollution emissions in proportion to the damage they cause is the most economically efficient way to reduce those emissions, many serious pollutants in Nation Y are untaxed and unregulated, and the nation's policy makers strongly oppose new taxes. Therefore, fixed upper limits on such emissions would more effectively reach this goal.

Reasoning *What must be true in order for the factors the economist cites to support the claim that fixing upper limits on air pollutant emissions in Nation Y would be the best way to reduce those emissions?* Political opposition to taxation in Nation Y is the only factor the economist cites to support the argument's conclusion that it would be best to institute fixed upper limits on air pollutants. In order for the premise to support the conclusion, there must be less political opposition in Nation Y to instituting such limits than there would be to the proportional taxation approach the economist prefers.

A Even if the policy makers oppose some new taxes less than others, they could still oppose the proportional taxation approach strongly enough for it to be utterly infeasible.

B Even if the proportional taxation scheme would significantly reduce emissions, it still might not be the best approach for Nation Y if it would generate too much political opposition to be viable there.

C Even if policy makers in Nation Y do not strongly favor reducing emissions, fixing upper limits on emissions might still be a better and more politically feasible way to reduce emissions than any alternative is.

D Since fixing upper emissions limits would be no more economically efficient than the proportional taxation scheme, the policy makers' support for economic efficiency would not make the former approach any more politically feasible than the latter.

E **Correct.** If the policy makers opposed fixing upper emissions limits as strongly as they oppose new taxes, then their opposition to new taxes would no longer support the conclusion that fixing the emissions limits is a better way to reduce emissions.

The correct answer is E.

591. Humans get Lyme disease from infected ticks. Ticks get infected by feeding on animals with Lyme disease, but the ease of transmission from host animal to tick varies. With most species of host animal, transmission of Lyme disease to ticks is extremely rare, but white-footed mice are an exception, readily passing Lyme disease to ticks. And white-footed mouse populations greatly expand, becoming the main food source for ticks, in areas where biodiversity is in decline.

The information in the passage most strongly supports which of the following?

(A) In areas where many humans are infected with Lyme disease, the proportion of ticks infected with Lyme disease is especially high.

(B) Very few animals that live in areas where there are no white-footed mice are infected with Lyme disease.

(C) Humans are less at risk of contracting Lyme disease in areas where biodiversity is high.

(D) Ticks feed on white-footed mice only when other host species are not available to them.

(E) The greater the biodiversity of an area, the more likely any given host animal in that area is to pass Lyme disease to ticks.

Argument Construction

Situation White-footed mice readily pass Lyme disease to ticks, which pass it to humans. White-footed mouse populations expand where biodiversity is declining.

Reasoning *What conclusion do the stated facts support?* Since declining biodiversity causes white-footed mouse populations to increase, and white-footed mice are especially likely to pass Lyme disease to ticks, and ticks pass it to humans, declining biodiversity could reasonably be expected to increase the incidence of Lyme disease in both ticks and humans.

A In areas where many humans are infected with Lyme disease, the total number of ticks may be unusually high, so even if the number of infected ticks is unusually high, the proportion of infected ticks may not be unusually high

B Most animals with Lyme disease may get it from sources other than ticks that have fed on infected mice.

C **Correct.** If biodiversity is high, then any biodiversity decline that has already begun has likely not yet reached a point where white-footed mouse populations have greatly expanded, so the risk of people contracting Lyme disease is still relatively less than in areas where biodiversity is low and where significant decline in biodiversity has likely already occurred.

D Even if ticks feed on white-footed mice when few other species are available for them to feed on, they may also sometimes feed on white-footed mice when there are many other species for them to feed on.

E The passage suggests that the overall incidence of Lyme disease is probably lower in more biodiverse areas, so any given host animal in those areas would probably be less likely to pass Lyme disease to a tick.

The correct answer is C.

592. Many industrialized nations are trying to reduce atmospheric concentrations of carbon dioxide, a gas released by the burning of fossil fuels. One proposal is to replace conventional cement, which is made with calcium carbonate, by a new “eco-cement.” This new cement, made with magnesium carbonate, absorbs large amounts of carbon dioxide when exposed to the atmosphere. Therefore, using eco-cement for new concrete building projects will significantly help reduce atmospheric concentrations of carbon dioxide.

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

(A) The cost of magnesium carbonate, currently greater than the cost of calcium carbonate, probably will fall as more magnesium carbonate is used in cement manufacture.

(B) Eco-cement is strengthened when absorbed carbon dioxide reacts with the cement.

(C) Before the development of eco-cement, magnesium-based cement was considered too susceptible to water erosion to be of practical use.

(D) The manufacture of eco-cement uses considerably less fossil fuel per unit of cement than the manufacture of conventional cement does.

(E) Most building-industry groups are unaware of the development or availability of eco-cement.

Argument Evaluation

Situation Many nations are trying to reduce atmospheric concentrations of carbon dioxide. One proposed method is to use a new type of "eco-cement" that absorbs carbon dioxide from air.

Reasoning *What evidence, combined with the cited facts, would most support the prediction that using eco-cement will significantly help reduce atmospheric concentrations of carbon dioxide?* The prediction assumes that the use of eco-cement would be an effective way to reduce carbon dioxide levels. Any evidence supporting this assumption will support the prediction.

A Since eco-cement uses magnesium carbonate, the prediction that magnesium carbonate prices will fall suggests that a potential financial barrier to widespread eco-cement use will diminish. However, those prices may not fall enough to make eco-cement cost-competitive with regular cement.

B Even if absorbed carbon dioxide strengthens eco-cement, the strengthened eco-cement might still be much weaker than regular cement and thus might never become widely used, in which case it will not significantly help reduce atmospheric concentrations of carbon dioxide.

C Even if eco-cement is less susceptible to water erosion than earlier forms of magnesium-based cement were, it might still be much more susceptible to water erosion than regular cement is, and thus might never become widely used.

D **Correct.** This suggests that manufacturing eco-cement produces much less carbon dioxide than manufacturing regular cement does, so it supports the claim that widespread use of eco-cement would be an effective way to reduce carbon dioxide levels.

E If anything, this lack of awareness makes it less likely that eco-cement will become widely used, which in turn makes it less likely that eco-cement will significantly help reduce atmospheric concentrations of carbon dioxide.

The correct answer is D.

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

Davison River farmers are currently deciding between planting winter wheat this fall or spring wheat next spring. Winter wheat and spring wheat are usually about equally profitable. Because of new government restrictions on the use of Davison River water for irrigation, per acre yields for winter wheat, though not for spring wheat, would be much lower than average. Therefore, planting spring wheat will be more profitable than planting winter wheat, since ________.

(A) the smaller-than-average size of a winter wheat harvest this year would not be compensated for by higher winter wheat prices

(B) new crops of spring wheat must be planted earlier than the time at which standing crops of winter wheat are ready to be harvested

(C) the spring wheat that farmers in the Davison River region plant is well adapted to the soil of the region

(D) spring wheat has uses that are different from those of winter wheat

(E) planting spring wheat is more profitable than planting certain other crops, such as rye

Argument Construction

Situation Farmers in the Davison River region must choose between planting winter wheat in the fall and planting spring wheat next spring. The crops tend to be equally profitable. This year's winter wheat crop yield is likely to be lower than average. The spring wheat yield should not be lower than average. Thus, for these reasons (plus one that the argument omits), spring wheat will be more profitable than winter wheat.

Reasoning *Which point would logically complete the argument?* What would ensure spring wheat's profitability over winter wheat? Since the yield per acre of winter wheat is likely to be lower than usual, there will most likely be less winter wheat to sell. Winter wheat could match its usual profitability if the price farmers receive for it were to rise. If its price does not rise, however, it is unlikely to match its usual profitability. It would thus be unlikely to match spring wheat's profitability.

A **Correct.** If this is true, it would mean that smaller-than-average winter wheat yields would translate into lower-than-usual profits on winter wheat (while spring wheat would be as profitable as winter wheat would normally be). This would justify the conclusion that spring wheat will be more profitable than winter wheat.

B This provides support for the idea that farmers must choose between planting winter wheat and planting spring wheat, but it does not help determine which would be more profitable to plant.

C This does not help explain why spring wheat is likely to be more profitable than winter wheat, because it gives no information about how well winter wheat is adapted to the soil of the region.

D That spring wheat and winter wheat have different uses is not helpful in supporting a conclusion about which kind of wheat will be more profitable. It might help to know which of their uses are more profitable than others.

E Since the question is whether it will be more profitable to plant winter wheat or to plant spring wheat, the fact that spring wheat is more profitable than nonwheat crops is not relevant.

The correct answer is A.

594. Advertisement: When your car's engine is running at its normal operating temperature, any major brand of motor oil will protect it about as well as Tuff does. When the engine is cold, it is a different story: Tuff motor oil flows better at lower temperatures than its major competitors do. So, if you want your car's engine to have maximum protection, you should use Tuff.

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

(A) Tuff motor oil provides above-average protection for engines that happen to overheat.
(B) Tuff motor oil is periodically supplied free of charge to automobile manufacturers to use in factory-new cars.
(C) Tuff motor oil's share of the engine oil market peaked three years ago.
(D) Tuff motor oil, like any motor oil, is thicker and flows less freely at cold temperatures than at hot temperatures.
(E) Tuff motor oil is manufactured at only one refinery and shipped from there to all markets.

Argument Evaluation

Situation An advertisement argues that since Tuff motor oil flows better than its major competitors at low temperatures and works about as well as they do at normal temperatures, it provides *maximum protection* for car engines.

Reasoning *What additional evidence would suggest that Tuff motor oil provides the best available protection for car engines?* The argument requires the assumptions that no type of motor oil other than the "major brands" provides superior protection, that flowing better at lower temperatures ensures superior protection at those temperatures, and that Tuff protects car engines at least as well as its competitors do at above-normal temperatures. Any evidence supporting any of these assumptions would strengthen the argument.

A **Correct.** If Tuff provides above-average protection when engines overheat, in addition to the solid protection it provides at normal and low temperatures, it may well provide the best available protection overall.

B The company that makes Tuff might give automobile manufacturers free motor oil as a promotional gimmick even if Tuff is an inferior product.

C Tuff's sales might have declined over the past three years because consumers have realized that Tuff is an inferior product.

D The similar responses of Tuff and other motor oils to temperature changes do not suggest that Tuff provides better protection overall than those other motor oils do.

E Even if Tuff is manufactured at only one refinery, it may still be an inferior product.

The correct answer is A.

595. *The Testament of William Thorpe* was published around 1530 as an appendix to Thorpe's longer Examination. Many scholars, however, doubt the attribution of the *Testament* to Thorpe because, whereas the *Examination* is dated 1406, the *Testament* is dated 1460. One scholar has recently argued that the 1460 date be amended to 1409, based on the observation that when these numbers are expressed as Roman numerals, MCCCCLX and MCCCCIX, it becomes easy to see how the dates might have become confused through scribal error.

Which of the following, if true, would most support the scholar's hypothesis concerning the date of the *Testament*?

(A) The sole evidence that historians have had that William Thorpe died no earlier than 1460 was the presumed date of publication of the *Testament*.

(B) In the preface to the 1530 publication, the editor attributes both works to William Thorpe.

(C) Few writers in fifteenth-century England marked dates in their works using only Roman numerals.

(D) The *Testament* alludes to a date, "Friday, September 20," as apparently contemporaneous with the writing of the *Testament*, and September 20 fell on a Friday in 1409 but not in 1460.

(E) The *Testament* contains few references to historical events that occurred later than 1406.

Argument Construction

Situation *The Testament of William Thorpe*, dated 1460, was published around 1530 as an appendix to Thorpe's *Examination*, dated 1406. But when expressed in Roman numerals, 1460 could easily be confused with 1409.

Reasoning *Given the facts cited, what would provide additional evidence that Thorpe's* Testament *dates from 1409 rather than 1460?* The scholar's hypothesis that the work dates from 1409 is based on the observation that in Roman numerals, 1409 might easily have been improperly transcribed as 1460. This hypothesis could be supported by evidence that the manuscripts were dated in Roman numerals, or by any independent evidence that 1409 is a more likely date for the *Testament* than 1460.

A This suggests that scholars have no biographical evidence that the *Testament* was published in 1460, but they could still have abundant evidence of other types to support that date, such as the text's cultural allusions or references to other works.

B The editor of the 1530 publication could easily have been mistaken about the authorship of one or both works. And even if the editor were correct, Thorpe might have lived long enough to write one work in 1406 and the other in 1460.

C This would cast doubt on the scholar's argument by providing evidence that the original manuscripts were not dated only in Roman numerals.

D **Correct.** This provides strong evidence directly supporting the hypothesis that the *Testament* dates from 1409 specifically.

E Even if the *Testament* contained only one reference to a historical event that occurred later than 1406 (for example, one event in 1459), that reference alone could provide strong evidence that the work dates from 1460 rather than 1409.

The correct answer is D.

596. To reduce productivity losses from employees calling in sick, Corporation X implemented a new policy requiring employees to come into work unless they were so sick that they had to go to a doctor. But a year after the policy was implemented, a study found that Corporation X's overall productivity losses due to reported employee illnesses had increased.

Which of the following, if true, would best explain why the policy produced the reverse of its intended effect?

(A) After the policy was implemented, employees more frequently went to the doctor when they felt sick.
(B) Before the policy was implemented, employees who were not sick at all often called in sick.
(C) Employees coming into work when sick often infect many of their coworkers.
(D) Unusually few employees became genuinely sick during the year after the policy was implemented.
(E) There are many other factors besides employee illness that can adversely affect productivity.

Evaluation of a Plan

Situation After a company started requiring employees to come to work unless they were sick enough to have to go to a doctor, the company's productivity losses from reported employee illness increased.

Reasoning *What would explain why the policy increased productivity losses from reported employee illness?* Any factors that could have plausibly caused the policy to increase employee absenteeism from reported illness or to reduce the employees' productivity at work as a result of reported illness could explain why the policy increased productivity losses from reported illness.

A Even though the policy required sick employees to consult a doctor, there is no reason to think that employees' doing so would have made them less productive than they would otherwise have been when absent from work.

B This suggests that the policy made it more difficult for employees to falsely claim illness as an excuse for a work absence. Reduction in absences should result in productivity gains rather than losses.

C **Correct.** This could have been a result of the policy and would have led to productivity losses possibly greater than those seen before the policy was introduced.

D This would help to explain lower productivity losses from reported illness after the policy was implemented, not higher productivity losses.

E The question is what could explain how the policy increased productivity losses from reported employee illness specifically, not productivity losses from any other factors.

The correct answer is C.

597. Advertising by mail has become much less effective, with fewer consumers responding. Because consumers are increasingly overwhelmed by the sheer amount of junk mail they receive, most discard almost all offers without considering them. Thus, an effective way for corporations to improve response rates would be to more carefully target the individuals to whom they mail advertising, thereby cutting down on the amount of junk mail each consumer receives.

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

(A) There are cost-effective means by which corporations that currently advertise by mail could improve response rates.

(B) Many successful corporations are already carefully targeting the individuals to whom they mail advertising.

(C) Any consumer who, immediately after receiving an advertisement by mail, merely glances at it is very likely to discard it.

(D) Improvements in the quality of the advertising materials used in mail that is carefully targeted to individuals can improve the response rate for such mail.

(E) Response rates to carefully targeted advertisements by mail are considerably higher, on average, than response rates to most other forms of advertising.

Evaluation of a Plan

Situation Advertising by mail has become less effective because consumers overwhelmed with the amount of junk mail they receive discard almost all of it without considering it.

Reasoning *What would most help to support the claim that making mail advertising more carefully targeted would improve response rates?* The passage recommends targeted advertising, reasoning that since targeted advertising would reduce the total amount of junk mail consumers receive, it would generate higher response rates. Any additional evidence for the claim that carefully targeted advertising would improve response rates would support this recommendation.

A Even if targeted advertising and every other means of improving response rates were too expensive to be cost-effective, targeted advertising could still be effective for any corporation willing to pay the expense.

B If many corporations already mail targeted advertising, and mail advertising is nonetheless yielding declining response rates, that suggests that targeted mail is an ineffective way to increase response rates.

C This could be equally true for targeted and untargeted mail advertising, so it does not suggest that the former is more effective.

D The question under consideration is whether more carefully targeted mail advertising would in itself increase response rates, not whether higher quality advertising would do so.

E **Correct.** This provides some evidence that carefully targeted mail advertising is associated with higher response rates than untargeted mail advertising is, and therefore that targeting mail advertising more carefully would improve response rates.

The correct answer is E.

598. Petrochemical industry officials have said that the extreme pressure exerted on plant managers during the last five years to improve profits by cutting costs has done nothing to impair the industry's ability to operate safely. However, environmentalists contend that the recent rash of serious oil spills and accidents at petrochemical plants is traceable to cost-cutting measures.

Which of the following, if true, would provide the strongest support for the position held by industry officials?

(A) The petrochemical industry benefits if accidents do not occur, since accidents involve risk of employee injury as well as loss of equipment and product.

(B) Petrochemical industry unions recently demanded that additional money be spent on safety and environmental protection measures, but the unions readily abandoned those demands in exchange for job security.

(C) Despite major cutbacks in most other areas of operation, the petrochemical industry has devoted more of its resources to environmental and safety measures in the last five years than in the preceding five years.

(D) There is evidence that the most damaging of the recent oil spills would have been prevented had cost-cutting measures not been instituted.

(E) Both the large fines and the adverse publicity generated by the most recent oil spill have prompted the petrochemical industry to increase the resources devoted to oil-spill prevention.

Argument Evaluation

Situation Petrochemical industry officials claim that pressure on plant managers to cut costs over the past five years has not made the industry's operations any less safe. Environmentalists claim that recent oil spills and accidents show otherwise.

Reasoning *What evidence would most strongly suggest that the cost-cutting pressure was not responsible for the recent rash of oil spills and accidents?* Evidence that the plant managers did not cut costs in any specific ways likely to have increased the likelihood of oil spills and accidents would support the industry officials' position that the cost-cutting pressure has not made petrochemical operations any less safe.

A Even if the petrochemical industry has good reasons to try to prevent accidents, the recent rash of serious accidents suggests that it is failing to do so and that the cost-cutting pressure might be responsible.

B This suggests that the unions, whose members could directly observe the cost-cutting pressure's effects, share the environmentalists' belief that this pressure contributed to the oil spills and accidents. Because the unions abandoned their demands, their concerns probably have not been addressed.

C **Correct.** This suggests that, as the industry officials claim, the cost-cutting pressure has not in itself reduced the industry's effectiveness at preventing oil spills and accidents. Thus, it suggests that other factors are probably responsible for the recent problems.

D This clearly suggests that the cost-cutting measures have indeed caused the industry to operate less safely, as the environmentalists claim.

E Although this suggests that the industry is now trying to address the recent problems, the cost-cutting measures might nonetheless have caused all those problems.

The correct answer is C.

599. Economist: The price of tap water in our region should be raised drastically. **Supplies in local freshwater reservoirs have been declining for years** because water is being used faster than it can be replenished. Since the price of tap water has been low, **few users have bothered to adopt even easy conservation measures**.

The two sections in boldface play which of the following roles in the economist's argument?

(A) The first is a conclusion for which support is provided, and which in turn supports the main conclusion; the second is the main conclusion.

(B) The first is an observation for which the second provides an explanation; the second is the main conclusion but not the only conclusion.

(C) The first is a premise supporting the argument's main conclusion; so is the second.

(D) The first is the only conclusion; the second provides an explanation for the first.

(E) The first is the main conclusion; the second is a conclusion for which support is provided, and which in turn supports the first.

Argument Construction

Situation Local water supplies have been declining for years because of excessive water use and low prices. Few users have adopted even easy conservation measures.

Reasoning *What roles do the two boldface statements play in the argument?* Both are factual observations. Since no further evidence or support is provided for either, neither can be a conclusion in the argument. However, interconnected causal explanations, signaled by *because* and *since,* are provided for both. The observation in the first boldface statement is causally explained by the further observation that water is being used faster than it can be replenished, which in turn is causally explained by the entire final sentence. The observation in the second boldface statement is causally explained by the observation that the price of tap water has been low. The only remaining portion of the argument is the initial sentence, a recommendation supported by these four observations together, and by the causal claims in which they are embedded. Thus, the four observations (including the two boldface statements) and the causal claims containing them are all premises, and the initial statement is the argument's only conclusion.

A As explained above, the two boldface statements are premises of the argument. Although causal explanations are provided for both, no support or evidence is provided for either.

B As explained above, the second boldface statement does provide part of the causal explanation for the observation in the first boldface statement. But no support is provided for either statement, so neither is a conclusion.

C **Correct.** As explained above, each of the statements is a premise that serves along with other claims to support the recommendation in the initial sentence, which is the argument's only conclusion, and in that sense its main conclusion.

D As explained above, the second boldface statement does provide part of the causal explanation for the observation in the first boldface statement. But no support is provided for either statement, so neither is a conclusion in the argument.

E As explained above, the two boldface statements are premises of the argument. Although causal explanations are provided for both, no support or evidence is provided for either.

The correct answer is C.

600. Politician: Hybrid cars use significantly less fuel per kilometer than nonhybrids. And fuel produces air pollution, which contributes to a number of environmental problems. Motorists can save money by driving cars that are more fuel efficient, and they will be encouraged to drive hybrid cars if we make them aware of that fact. Therefore, we can help reduce the total amount of pollution emitted by cars in this country by highlighting this advantage of hybrid cars.

Which of the following, if true, would most indicate a vulnerability of the politician's argument?

(A) People with more fuel-efficient cars typically drive more than do those with less fuel-efficient cars.
(B) Not all air pollution originates from automobiles.
(C) Hybrid cars have already begun to gain popularity.
(D) Fuel-efficient alternatives to hybrid cars will likely become available in the future.
(E) The future cost of gasoline and other fuel cannot be predicted with absolute precision or certainty.

Argument Evaluation

Situation According to a politician, hybrid cars use less fuel per kilometer than nonhybrids, and fuel produces air pollution. Motorists can save money by driving fuel-efficient cars, and will be encouraged to do so if made aware of the fact. The politician concludes that highlighting this fact will result in a reduction in air pollution.

Reasoning *What would suggest that telling motorists they can save money by driving fuel-efficient cars would not reduce automotive air pollution, despite the facts cited by the politician?* The politician's implicit reasoning is that since hybrid cars use less fuel per kilometer, and fuel produces air pollution, motorists who drive hybrid cars must produce less air pollution than those who drive nonhybrids. The politician concludes that encouraging motorists to drive hybrid cars by telling them they would save money on fuel will therefore reduce automotive air pollution. Evidence that motorists who drive hybrid cars produce just as much automotive air pollution as those who drive nonhybrids would undermine this argument.

A **Correct.** If drivers of hybrid cars tend to drive more kilometers than drivers of nonhybrids, then they may consume just as much fuel and produce just as much air pollution as the nonhybrid car drivers do, despite their lower fuel use per kilometer.

B The politician's argument is only about air pollution from cars specifically, not air pollution from all sources.

C Even if hybrid cars are beginning to gain popularity, informing motorists of the cost savings from fuel efficiency could help these cars become more popular than they would otherwise be.

D Encouraging motorists to switch to hybrid cars now could reduce fuel use and automotive air pollution in the near future even if other, more fuel-efficient vehicles will become available further in the future.

E Even if the future cost of fuel cannot be predicted accurately, encouraging motorists to switch to hybrid cars could reduce air pollution as the politician argues.

The correct answer is A.

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

A recent government study links the high rates of respiratory ailments in Groverston to airborne pollutants released by the Woodco plywood manufacturing plant there. To address the problem, the government imposed strict regulations on emissions which will go into effect in four years. Although Woodco plans to cut its emissions in half two years ahead of schedule, it is unlikely that the rate of respiratory ailments will decline before the regulations go into effect, since ________.

(A) the number of facilities capable of treating respiratory ailments is not likely to increase

(B) reducing emissions even further than planned would necessitate decreasing production at Woodco

(C) it is difficult to make accurate, long-term predictions about emissions

(D) not all respiratory ailments are caused by airborne pollutants

(E) three new plywood manufacturing plants are about to go into production in Groverston

Argument Construction

Situation A government study linked high rates of respiratory illness in Groverston to air pollutants released by a plywood manufacturing plant. A government-imposed restriction on emissions will go into effect in four years. But the Woodco manufacturing plant plans to cut its emissions in half two years ahead of schedule.

Reasoning *Which of the possible completions of the passage will provide the most support for the argument's conclusion?* The argument's conclusion is that the rate of respiratory illness is unlikely to decline before the regulations go into effect four years from now. That is a surprising claim, given that the existing plywood factory is going to *halve* its emissions two years from now—so this claim requires additional support (to be provided by completing the blank). Such additional support is provided by the information that three new plywood manufacturing plants will soon be starting production in Groverston. This suggests that even if Groverston reduces its emissions by half over the next two years—and even if each of the three new plants have only, let's say, *one quarter* of the emissions of the existing plant as currently operated—the *total amount* of airborne pollutants from plywood manufacture in the Groverston area will not decline. Since the total airborne pollution from the plants will not decline, we should not expect that the rate of respiratory illnesses from such pollution would decline either.

A The argument focuses on the incidence of respiratory ailments in Groverston, not on the availability of treatment facilities for such ailments once they occur. So this statement is largely irrelevant to the argument.

B This information provides no support for the argument's conclusion. It merely indicates a practical difficulty Woodco would have in making more than a 50 percent reduction in its emissions. However, even with the 50 percent emissions reduction that Woodco plans to implement in two years, the rate of respiratory ailments should decline.

C First, it is not clear that a prediction about levels of emissions in Groverston three or four years from now is a *long-term prediction*. More to the point, if it would be very difficult to predict the emissions even two years from now, that would not support a conclusion that rates of respiratory ailments are unlikely to decline. Rather, it would support the conclusion that we do not know whether rates will decline.

D This information raises the possibility that within the next four years, an increase in the occurrence of factors *other than* airborne pollutants might make a decline in respiratory ailments unlikely. However, the passage provides no information whatsoever that implies an increase in the occurrence of such "other" factors.

E **Correct.** This helps to support the conclusion that rates of respiratory ailments in Groverston are unlikely to decline before the new government regulations go into effect.

The correct answer is E.

602. One summer, floods covered low-lying garlic fields situated in a region with a large mosquito population. Since mosquitoes lay their eggs in standing water, flooded fields would normally attract mosquitoes, yet no mosquitoes were found in the fields. Diallyl sulfide, a major component of garlic, is known to repel several species of insects, including mosquitoes, so it is likely that diallyl sulfide from the garlic repelled the mosquitoes.

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

(A) Diallyl sulfide is also found in onions but at concentrations lower than in garlic.

(B) The mosquito population of the region as a whole was significantly smaller during the year in which the flooding took place than it had been in previous years.

(C) By the end of the summer, most of the garlic plants in the flooded fields had been killed by waterborne fungi.

(D) Many insect species not repelled by diallyl sulfide were found in the flooded garlic fields throughout the summer.

(E) Mosquitoes are known to be susceptible to toxins in plants other than garlic, such as marigolds.

Argument Evaluation

Situation When summer floods covered garlic fields in an area with many mosquitoes, no mosquitoes were found in the fields, even though flooded fields would normally attract mosquitoes to lay their eggs in the water. Diallyl sulfide, which is found in garlic, repels mosquitoes and some other insect species, and likely accounts for the lack of mosquitoes in the area.

Reasoning *Given the facts cited, what would provide additional evidence that diallyl sulfide from the garlic made mosquitoes avoid the flooded fields?* The argument would be strengthened by any independent evidence suggesting that diallyl sulfide pervaded the flooded fields or excluding other factors that might explain the absence of mosquitoes in the fields.

A This could strengthen the argument if mosquitoes also avoid flooded onion fields, but we do not know whether they do.

B This would weaken the argument by suggesting that the general mosquito population decline, rather than the diallyl sulfide, could explain the absence of mosquitoes from the fields.

C It is not clear how this would affect the amount of diallyl sulfide in the flooded fields, so this does not provide evidence that the diallyl sulfide repelled the mosquitoes.

D **Correct.** This provides evidence that there was no factor other than diallyl sulfide that reduced insect populations in the flooded garlic fields.

E If anything, this would weaken the argument, since it is at least possible that some of these toxins were present in the flooded fields.

The correct answer is D.

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

Pecan growers get a high price for their crop when pecans are comparatively scarce, but the price drops sharply when pecans are abundant. Thus, in high-yield years, growers often hold back part of their crop in refrigerated warehouses for one or two years, hoping for higher prices in the future. This year's pecan crop was the smallest in five years. It is nonetheless quite possible that a portion of this year's crop will be held back, since ________.

(A) each of the last two years produced record-breaking pecan yields

(B) the quality of this year's pecan crop is no worse than the quality of the pecan crops of the previous five years

(C) pecan prices have not been subject to sharp fluctuations in recent years

(D) for some pecan growers, this year's crop was no smaller than last year's

(E) the practice of holding back part of one year's crop had not yet become widespread the last time the pecan crop was as small as it was this year

Argument Construction

Situation The price of pecans tends to drop sharply in years when pecans are abundant. So in high-yield years, growers often hold back part of the harvest in refrigerated warehouses. This year's harvest was the smallest in five years.

Reasoning *What would provide the best completion of the argument?* The argument's conclusion is that some of this year's crop might be held back. The blank to be completed should provide a reason in support of that conclusion. What would lead us to believe that some of this year's crop might go into cold storage even though the crop was unusually small? Only in high-yield years does this usually happen. But suppose there is *already* a large quantity of pecans in cold storage from previous harvests. Given this information, it would make perfect sense to expect that the pecans already in cold storage would be marketed first, while some of the latest crop would be stored. This would avoid the market oversupply and lower producer prices that might result if both all of this year's crop and all of the already stored pecans were marketed this year.

A **Correct.** This answer choice provides information that makes it more probable that the conclusion is true.

B The argument provides no information whatsoever that would suggest the decision to store or not to store pecans is based on evaluation of the crop's quality.

C This information is of little or no relevance. It is reasonable to think that predictions about pecan prices this year would affect the decision to store or not to store. But the information in this answer choice sheds little or no light on what this year's pecan prices might be, given that, as the passage tells us, this year's crop is exceptionally small.

D It is not surprising that some growers had crops this year that were as big as their crops the year before. But what matters, what affects the price of pecans, is the overall size of total pecan production and the abundance or scarcity of pecans at the time.

E This piece of history about marketing and storage practices explains why pecans were not placed in storage in previous small-yield years, but it provides no reason to believe that some of the new pecan crop will be stored this year.

The correct answer is A.

604. Coffee shop owner: A large number of customers will pay at least the fair market value for a cup of coffee, even if there is no formal charge. Some will pay more than this out of appreciation of the trust that is placed in them. And our total number of customers is likely to increase. We could therefore improve our net cash flow by implementing an honor system in which customers pay what they wish for coffee by depositing money in a can.

Manager: We're likely to lose money on this plan. Many customers would cheat the system, paying a very small sum or nothing at all.

Which of the following, if true, would best support the owner's plan, in light of the manager's concern?

(A) The new system, if implemented, would increase the number of customers.
(B) By roasting its own coffee, the shop has managed to reduce the difficulties (and cost) of maintaining an inventory of freshly roasted coffee.
(C) Many customers stay in the cafe for long stretches of time.
(D) The shop makes a substantial profit from pastries and other food bought by the coffee drinkers.
(E) No other coffee shop in the area has such a system.

Evaluation of a Plan

Situation The owner and the manager of a coffee shop disagree about whether allowing customers to pay for coffee on an honor system would increase or decrease profits.

Reasoning *What would be the best evidence that the honor-system plan would increase profits even if many customers cheated the system?* The owner argues that profits would increase because many customers will choose to pay as much or more than before and the total number of customers will likely increase. But the manager points out that many customers would also choose to pay little or nothing. Assuming that the manager is correct about that, what further support could the owner present for the claim that the plan would still be profitable?

A Since the owner has already basically asserted this, asserting it again would not provide any significant additional support for the plan.

B This suggests that the shop is already profitable, not that the honor-system plan would make it more profitable.

C Customers who stay in the cafe for long stretches would not necessarily pay any more per cup on the honor-system plan than other customers would.

D **Correct.** If the customer base increases (as both the owner and the manager seem to agree), more customers will likely purchase highly profitable pastries and other foods, thus boosting profits.

E The reason no other coffee shop in the area has an honor system may be that their owners and managers have determined that it would not be profitable.

The correct answer is D.

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

By competing with rodents for seeds, black ants help control rodent populations that pose a public health risk. However, a very aggressive species of black ant, the Loma ant, which has recently invaded a certain region, has a venomous sting that is often fatal to humans. Therefore, the planned introduction into that region of ant flies, which prey on Loma ants, would benefit public health, since ________.

(A) ant flies do not attack black ants other than Loma ants

(B) Loma ants are less effective than many bird species in competing with rodents for seeds

(C) certain other species of black ants are more effective than Loma ants in competing with rodents for seeds

(D) the sting of Loma ants can also be fatal to rodents

(E) some pesticides that could be used to control Loma ants are harmful to the environment

Argument Construction

Situation Black ants help to control populations of rodents by competing with them for seeds. But a very aggressive species of black ant, the Loma ant, has a sting that can be fatal to humans. Ant flies prey on Loma ants and their presence can thereby benefit public health.

Reasoning *Which of the possible completions of the passage provides the most support for the conclusion?* The argument's conclusion is that introducing ant flies into the region where Loma ants have recently invaded would benefit public health. We know from the passage that black ants, generally, benefit public health by keeping down rodent populations. However, the sting of Loma ants, a species of black ant, can be fatal to humans. Ant flies prey on Loma ants. To that extent their introduction in the region would tend to benefit public health by making fatal Loma stinging of humans less likely. But if these ant flies also prey on black ants other than the Loma ants, then to that extent they would undermine another public health benefit associated with controlling rodents. Thus, the information that ant flies do not prey on black ants other than Loma ants would provide strong logical support for the conclusion.

A **Correct.** This most logically completes the argument because it addresses a potential downside of introducing the ant flies into the region. The potential downside is that it might reduce the desirable effect that other species of black ants have in keeping down the rodent populations.

B We have no idea whether the bird species that are more effective than Loma ants at competing with rodents for seeds are even present in the region in question.

C This does not help the conclusion very much because we do not know *from the passage* whether ant flies prey on other species of black ants besides Loma ants.

D If anything, this is a reason *not to introduce ant flies* into the region. This answer choice at least suggests that Loma ants might have some positive effect on public health because they might keep down rodent populations by reducing their survival chances.

E This provides very little support for the conclusion. It does not exclude the possibility that there are pesticides—perhaps several—that would control Loma ants effectively without harming the environment. So it is not a strong reason for introducing ant flies.

The correct answer is A.

606. Journalist: In physics journals, the number of articles reporting the results of experiments involving particle accelerators was lower last year than it had been in previous years. Several of the particle accelerators at major research institutions were out of service the year before last for repairs, so it is likely that the low number of articles was due to the decline in availability of particle accelerators.

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

(A) Every article based on experiments with particle accelerators that was submitted for publication last year actually was published.

(B) The average time scientists must wait for access to a particle accelerator has declined over the last several years.

(C) The number of physics journals was the same last year as in previous years.

(D) Particle accelerators can be used for more than one group of experiments in any given year.

(E) Recent changes in the editorial policies of several physics journals have decreased the likelihood that articles concerning particle-accelerator research will be accepted for publication.

Argument Evaluation

Situation A journalist attributes the low number of articles about particle accelerators in physics journals to the fact that several accelerators at major research institutions had been out of service the previous year.

Reasoning *What point undermines the journalist's argument?* The journalist assumes that the researchers' lack of access to the accelerators is responsible for the decline in the number of articles. What else could explain fewer articles? What if the decline is due, not to the availability of the accelerators for experiments, but to policies regarding publishing articles related to such experiments? An alternate explanation is that changes in the editorial policies of physics journals, rather than the effect of the out-of-service accelerators, could well be responsible for the lower number of published articles about particle-accelerator research.

A This statement rules out the possibility that submitted articles were not published, and eliminating this alternate explanation tends to support the argument.

B A decline in waiting time would seem to promote more articles about accelerator research being written and published, not fewer.

C While the decline in articles could be explained by a decline in the number of journals, this statement eliminates that alternate explanation.

D If the accelerators can be used for multiple experiments, then it is reasonable to expect more articles related to them, not fewer.

E **Correct.** This statement properly identifies a point that undermines the journalist's reasoning.

The correct answer is E.

607. Birds have been said to be descended from certain birdlike dinosaur species with which they share distinctive structural features. The fossil record, however, shows that this cannot be so, since there are bird fossils that are much older than the earliest birdlike dinosaur fossils that have been found.

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

(A) The birdlike dinosaurs have no living descendants.

(B) There are no flightless dinosaur species that have the distinctive structural features shared by birds and birdlike dinosaurs.

(C) There are no birdlike dinosaur fossils that are older than the bird fossils but have not yet been unearthed.

(D) It could not have been the case that some birds were descended from one of the birdlike dinosaur species and other birds from another.

(E) Birds cannot have been descended from dinosaur species with which the birds do not share the distinctive structural features.

Argument Construction

Situation Although birds have been said to be descended from birdlike dinosaurs, some bird fossils predate the earliest known birdlike dinosaur fossils.

Reasoning *What must be true in order for the premise that some bird fossils predate the earliest known birdlike dinosaur fossils to support the conclusion that birds are not descended from birdlike dinosaurs?* The argument implicitly reasons that since the cited bird fossils predate the earliest known birdlike dinosaur fossils, they must be from birds that lived before the earliest birdlike dinosaurs, and which therefore could not have been descended from birdlike dinosaurs. This reasoning assumes that any birdlike dinosaurs that lived before the first birds would have left fossils that still exist. It also assumes that no undiscovered birdlike dinosaur fossils predate the cited bird fossils.

A The argument is only about whether birds are descended from birdlike dinosaurs. Whether birdlike dinosaurs have any living descendants other than birds is irrelevant.

B The argument is only about birds and birdlike dinosaurs. It is not about other types of dinosaurs that were not birdlike.

C **Correct.** If any undiscovered birdlike dinosaur fossils predate the cited bird fossils, then the latter fossils' age does not support the conclusion that birds are not descended from birdlike dinosaurs.

D The argument purports to establish that the relative ages of bird fossils and birdlike dinosaur fossils show that birds cannot be descended from any of the known birdlike dinosaur species. In doing this, it acknowledges multiple birdlike dinosaur species and leaves open the question of whether some birds may be descended from one such species and other birds from another such species.

E The argument does not claim that the known fossil record shows that birds cannot be descended from dinosaurs. It only claims that the record shows that they cannot be descended from the birdlike dinosaurs that shared their distinctive structural features.

The correct answer is C.

608. City council member: Demand for electricity has been increasing by 1.5 percent a year, and there simply is no more space to build additional power plants to meet future demand increases. We must therefore begin to curtail usage, which is why I propose passing ordinances requiring energy-conservation measures in all city departments.

The city council member's proposal assumes which of the following?

(A) Existing power plants do not have the capacity to handle all of the projected increase in demand for electricity.
(B) No city departments have implemented energy-conservation measures voluntarily.
(C) Passing ordinances designed to curtail electricity usage will not have negative economic consequences for the city.
(D) Residential consumers are not responsible for the recent increases in demand for electricity.
(E) City departments that successfully conserve energy will set a good example for residential and industrial consumers of electricity.

Argument Construction

Situation A city council member proposes energy-conservation measures for all city government departments because there is no room to build new power plants to meet future increases in the demand for electricity.

Reasoning *What must be true in order for the factors the city council member cites to help justify the proposal?* The city council member says electricity usage must be curtailed on account of an increasing demand for electricity and a lack of space for new power plants that could meet future demand increases. In order for this reasoning to help justify the proposal, the cited factors must actually establish a need to curtail electricity usage.

A **Correct.** If current power plants could satisfy the projected increased demand for electricity, then the increasing demand and the lack of room to build new plants would not establish a need to curtail electricity usage.

B The proposed ordinances could still be necessary even if one city department had voluntarily implemented energy-conservation measures.

C Passing the ordinances could still be necessary even if they would have some negative economic effects.

D No matter who is responsible for the recent increases in demand, curtailing the city government's electricity usage could still help to reduce demand.

E Ordinances to curtail the city government's energy usage could be economically necessary regardless of whether or not departments that obey the ordinances set a good example.

The correct answer is A.

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

Using broad-spectrum weed killers on weeds that are competing with crops for sunlight, water, and nutrients presents a difficulty: how to keep the crop from being killed along with the weeds. For at least some food crops, specially treated seed that produces plants resistant to weed killers is under development. This resistance wears off as the plants mature. Therefore, the special seed treatment will be especially useful for plants that ________.

(A) produce their crop over an extended period of time, as summer squash does
(B) produce large seeds that are easy to treat individually, as corn and beans do
(C) provide, as they approach maturity, shade dense enough to keep weeds from growing
(D) are typically grown in large tracts devoted to a single crop
(E) are cultivated specifically for the seed they produce rather than for their leaves or roots

Argument Construction

Situation A difficulty in using broad-spectrum weed killers is keeping them from killing the food crops along with the weeds. Specially treated seed is being developed that will protect certain food crop plants in their earlier stages of growth.

Reasoning *Which is the best completion for the conclusion?* The conclusion is incompletely stated as "Therefore, the special seed treatment will be especially useful for plants that ________." The question is what sorts of plants does the passage suggest the seed treatment would be especially useful for. We have been told that this treatment makes the plants resistant to weed killer, but that this resistance wears off when the plant matures. So the treatment will be most useful with plants that are not harmed by weed killer and that suffer no significant disadvantage when the resistance wears off as the plant matures. Choice (C) is the correct answer choice because it describes a sort of plant that can combat weeds and requires no weed killer once the plant matures.

A Given that the seed treatment wears off as the plant matures, it would not be especially useful for plants that produce their crops over an extended period.

B We have not been told whether small seeds are more difficult to treat, and so we have no basis to conclude that the special seed treatment would be *especially useful* for plants that have large seeds that are easy to treat individually. We have also been given no reason to think that it is better to treat seeds individually.

C Correct. Plants that, as they approach maturity, produce shade dense enough to keep weeds from growing, would benefit from resistance to weed killer when young and would not need weed killer when they have matured and lost their resistance.

D We have been given no reason to think that the seed treatment would be especially useful for plants grown in a large tract devoted to a single crop. For example, why would it be less useful for small tracts with a variety of crops?

E A plant harvested for its roots, fruits, or leaves, rather than for its seeds, would derive no less an advantage from resistance to weed killers in earlier stages of growth.

The correct answer is C.

610. Previously, Autoco designed all of its cars itself and then contracted with specialized parts suppliers to build parts according to its specifications. Now it plans to include its suppliers in designing the parts they are to build. Since many parts suppliers have more designers with specialized experience than Autoco has, Autoco expects this shift to reduce the overall time and cost of the design of its next new car.

Which of the following, if true, most strongly supports Autoco's expectation?

(A) When suppliers provide their own designs, Autoco often needs to modify its overall design.
(B) In order to provide designs for Autoco, several of the parts suppliers will have to add to their existing staffs of designers.
(C) Parts and services provided by outside suppliers account for more than 50 percent of Autoco's total costs.
(D) When suppliers built parts according to specifications provided by Autoco, the suppliers competed to win contracts.
(E) Most of Autoco's suppliers have on hand a wide range of previously prepared parts designs that can readily be modified for a new car.

Evaluation of a Plan

Situation A car manufacturer plans to have its parts suppliers start helping to design the parts they build for the manufacturer. Many parts suppliers have more designers with specialized experience than the manufacturer has.

Reasoning *What would make it more likely that having the parts suppliers help design the parts will reduce the time and cost of designing the manufacturer's next new car?* In order for the change to reduce the time and cost, the parts suppliers involved in designing the next car will probably have to do their portion of the design process faster and cheaper than the manufacturer would have, and the design collaboration process will have to avoid producing substantial new inefficiencies.

A The additional need to modify the overall design would probably make the design process slower and more expensive, not faster and cheaper.
B The additional need to hire more designers would probably increase design costs, not reduce them.
C Although this suggests that the change is likely to substantially affect the design's expense, it does not indicate whether the expense will increase or decrease.
D If anything, this competition probably made Autoco's previous design process cheaper. It does not suggest that the new design process, which may involve less competition, will be faster or cheaper than the previous one.
E **Correct.** Modifying the previously prepared parts designs will probably be faster and cheaper than creating new designs from scratch.

The correct answer is E.

611. In Stenland, many workers have been complaining that they cannot survive on minimum wage, the lowest wage an employer is permitted to pay. The government is proposing to raise the minimum wage. Many employers who pay their workers the current minimum wage argue that if it is raised, unemployment will increase because they will no longer be able to afford to employ as many workers.

Which of the following, if true in Stenland, most strongly supports the claim that raising the minimum wage there will not have the effects that the employers predict?

(A) For any position with wages below a living wage, the difficulty of finding and retaining employees adds as much to employment costs as would raising wages.

(B) Raising the minimum wage does not also increase the amount employers have to contribute in employee benefits.

(C) When inflation is taken into account, the proposed new minimum wage is not as high as the current one was when it was introduced.

(D) Many employees currently being paid wages at the level of the proposed new minimum wage will demand significant wage increases.

(E) Many employers who pay some workers only the minimum wage also pay other workers wages that are much higher than the minimum.

Argument Evaluation

Situation Stenland's government proposes to raise the minimum wage because many workers have complained they cannot survive on it. But many employers claim that raising the minimum wage will increase unemployment.

Reasoning *What evidence would most strongly suggest that raising the minimum wage will not increase unemployment?* The employers with minimum-wage workers implicitly reason that because raising the minimum wage will increase the wages they have to pay each worker, it will reduce the number of workers they can afford to employ, and thus will increase unemployment. Evidence that the increased wage would not actually increase the employers' expenses per employee would cast doubt on their prediction, as would evidence that reducing the number of minimum-wage workers would not increase the nation's overall unemployment rate.

A **Correct.** This suggests that raising the minimum wage would make it easier for employers to find and retain minimum-wage employees, and that the savings would fully offset the cost of paying the higher wages. If there were such offsetting savings, the employers should still be able to afford to employ as many workers as they currently do.

B Even if raising the minimum wage does not increase employers' costs for employee benefits, paying the higher wage might still in itself substantially increase employers' overall costs per employee.

C For all we know, the current minimum wage might have substantially increased unemployment when it was introduced.

D These additional demands would probably raise employers' overall costs per employee, making it more likely that increasing the minimum wage would increase overall unemployment.

E Even if some workers receive more than the minimum wage, raising that wage could still raise employers' expenses for employing low-wage workers, making it too expensive for the employers to employ as many workers overall.

The correct answer is A.

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

The attribution of the choral work *Lacrimae* to the composer Pescard (1400–1474) has been regarded as tentative, since it was based on a single treatise from the early 1500s that named Pescard as the composer. Recently, several musical treatises from the late 1500s have come to light, all of which name Pescard as the composer of *Lacrimae*. Unfortunately, these newly discovered treatises lend no support to the attribution of *Lacrimae* to Pescard, since ________.

(A) the treatise from the early 1500s misidentifies the composers of some of the musical works it considers

(B) the author of the treatise from the early 1500s had no very strong evidence on which to base the identification of Pescard as the composer of *Lacrimae*

(C) there are works that can conclusively be attributed to Pescard that are not even mentioned in the treatise from the early 1500s

(D) the later treatises probably had no source for their attribution other than the earlier treatise

(E) no known treatises from the 1600s identify Pescard as the composer of *Lacrimae*

Argument Construction

Situation A choral work has been tentatively attributed to Pescard based on a single treatise from the early 1500s. But several treatises from the late 1500s have recently been discovered, and all of them attribute the work to Pescard.

Reasoning *Which of the answer choices provides the strongest reason for the conclusion?* The argument's conclusion is that the newly discovered late-1500 treatises lend no support to the attribution of *Lacrimae* to Pescard. It is worth noting that prior to the conclusion the passage provides information which suggests that these newly discovered treatises *do* lend support to the attribution. So the question is: Why don't they? A good reason for thinking they do not is that the newly discovered treatises probably derive solely from the attribution given in the earlier text. Thus the attributions in the later treatises are only as reliable as the attribution in the earlier treatise—and the argument suggests that that reliability has not been conclusively established.

A This makes the treatise from the early 1500s less reliable, but it does not explain why the newly discovered treatises are unreliable.

B Like answer choice (A), this is irrelevant. The question is not why the treatise from the early 1500s fails to lend support to the attribution but why the treatises from the late 1500s fail to do so.

C This is irrelevant because it does not refer to the newly discovered treatises whose attribution of *Lacrimae* is at issue.

D **Correct.** The question is whether these newly discovered treatises lend *additional* support. *Lacrimae* has already been tentatively attributed to Pescard based on the text from the early 1500s. So, if the later treatises base their attribution solely on the earlier treatise, then they provide no additional support beyond that already provided by the earlier treatise.

E This leaves open the possibility that there was no treatise at all in the 1600s that discussed Pescard or *Lacrimae*. Also, it fails to provide significant evidence either for or against Pescard's having composed *Lacrimae*. But even if it did provide such evidence, it would be irrelevant because the issue is why the late-1500 treatises fail to provide significant support for the attribution of *Lacrimae* to Pescard, not whether Pescard composed the work.

The correct answer is D.

613. When trying to identify new technologies that promise to transform the marketplace, market researchers survey the managers of those companies that are developing new technologies. Such managers have an enormous stake in succeeding, so they invariably overstate the potential of their new technologies. Surprisingly, however, market researchers typically do not survey a new technology's potential buyers, even though it is the buyers—not the producers—who will ultimately determine a technology's commercial success.

Which of the following, if true, best accounts for the typical survey practices among market researchers?

(A) If a new technology succeeds, the commercial benefits accrue largely to the producers, not to the buyers, of that technology.

(B) People who promote the virtues of a new technology typically fail to consider that the old technology that is currently in use continues to be improved, often substantially.

(C) Investors are unlikely to invest substantial amounts of capital in a company whose own managers are skeptical about the commercial prospects of a new technology they are developing.

(D) The potential buyers for not-yet-available technologies can seldom be reliably identified.

(E) The developers of a new technology are generally no better positioned than its potential buyers to gauge how rapidly the new technology can be efficiently mass-produced.

Argument Construction

Situation Market researchers seeking to identify new technologies that have the potential to transform the marketplace survey managers of companies developing new technologies, but typically not the potential buyers of new technologies, even though managers tend to overstate the potential of their new technologies and it is the buyers who determine the products' commercial success.

Reasoning *What best explains why it is managers, not buyers, that the market researchers survey?* Why, despite the information in the passage, are managers of technology companies surveyed while potential buyers are typically not? A partial explanation would be that it is difficult to reliably determine who the potential buyers of new technologies will be. If market researchers cannot identify who the potential buyers of as-yet unavailable technologies will be, that explains why they are not typically surveyed—and why the next best alternative may be to survey managers.

A This answer choice tells us who would benefit from commercial success of new technologies. But it says nothing about whose opinion would be most valuable in predicting the commercial success of new technologies.

B At most, this could help explain why managers overstate the potential of their new technologies. But it does not explain the motives of market researchers in relying on the managers' rather than buyers' opinions about new technologies.

C Given that managers of technology companies will want to attract investors, this helps to explain why the managers would tend to overstate the potential of their new technologies. But it does not help to explain the survey practices.

D **Correct.** This accounts for why potential buyers of new technologies are not typically sought out in surveys by market researchers: It is difficult to determine in advance who they are.

E This, like answer choice (C), tends to make the practices of market researchers more difficult rather than easier to understand. If developers of new technologies are no better at gauging how rapidly a new technology can be mass-produced (a factor affecting commercial success), then all the more reason to survey potential buyers rather than the managers.

The correct answer is D.

614. Infotek, a computer manufacturer in Katrovia, has just introduced a new personal computer model that sells for significantly less than any other model. Market research shows, however, that very few Katrovian households without personal computers would buy a computer, regardless of its price. Therefore, introducing the new model is unlikely to increase the number of computers in Katrovian homes.

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

(A) Infotek achieved the lower price of the new model by using components of lower quality than those used by other manufacturers.

(B) The main reason cited by consumers in Katrovia for replacing a personal computer is the desire to have an improved model.

(C) Katrovians in households that already have computers are unlikely to purchase the new Infotek model as an additional computer for home use.

(D) The price of other personal computers in Katrovia is unlikely to drop below the price of Infotek's new model in the near future.

(E) Most personal computers purchased in Katrovia are intended for home use.

Argument Construction

Situation In Katrovia, a new personal computer model costs less than any other model. But market research shows that very few Katrovian households without personal computers would buy even cheap ones.

Reasoning *What must be true in order for the stated facts to support the conclusion that introducing the new computer model is unlikely to increase the overall number of computers in Katrovian homes?* The market research supports the conclusion that no new computer model is likely to significantly increase the number of computers in Katrovian homes that currently lack computers. But the overall number of computers in Katrovian homes will still increase if Katrovian homes that already have computers buy additional computers while keeping their existing ones. So the argument has to assume that the new computer model will not increase the number of additional computers purchased for Katrovian homes that already have computers.

A Even if Infotek used high-quality components in the new computer model, Katrovians might still refuse to buy it.

B Replacing a personal computer does not change the overall number of personal computers in homes, so Katrovians' motives for replacing their computers are irrelevant to the argument.

C **Correct.** As explained above, unless computers of the new model are purchased as additional computers for Katrovian homes that already have computers, the new model's introduction is unlikely to increase the overall number of computers in Katrovian homes.

D The assumption that other personal computer prices would stay relatively high does not help establish the link between its premises and its conclusion. If answer choice D were false, the argument would be no weaker than it is without any consideration of other computers' potential prices.

E If most personal computers purchased in Katrovia were not intended for home use, then the new model's introduction would be even less likely to increase the number of personal computers in Katrovian homes. So the argument does not depend on assuming that most of the computers purchased are for home use.

The correct answer is C.

615. Fast-food restaurants make up 45 percent of all restaurants in Canatria. Customers at these restaurants tend to be young; in fact, studies have shown that the older people get, the less likely they are to eat in fast-food restaurants. Since the average age of the Canatrian population is gradually rising and will continue to do so, the number of fast-food restaurants is likely to decrease.

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

(A) Fast-food restaurants in Canatria are getting bigger, so each one can serve more customers.
(B) Some older people eat at fast-food restaurants more frequently than the average young person.
(C) Many people who rarely eat in fast-food restaurants nevertheless eat regularly in restaurants.
(D) The overall population of Canatria is growing steadily.
(E) As the population of Canatria gets older, more people are eating at home.

Argument Evaluation

Situation In Canatria, the older people get, the less likely they are to eat in fast-food restaurants. The average age of Canatrians is increasing.

Reasoning *What evidence would most weaken the support provided by the cited facts for the prediction that the number of fast-food restaurants in Canatria is likely to decrease?* The argument implicitly reasons that since studies have shown that Canatrians tend to eat in fast-food restaurants less as they get older, and since Canatrians are getting older on average, the proportion of Canatrians eating in fast-food restaurants will decline. The argument assumes that this means the overall number of fast-food restaurant customers will decline and that demand will decrease enough to reduce the number of fast-food restaurants that can sustain profitability. Consequently, fewer new fast-food restaurants will open or more old ones will close, or both. Thus, the number of fast-food restaurants in Canatria will fall. Any evidence casting doubt on any inference in this chain of implicit reasoning will weaken the argument.

A This strengthens the argument by providing additional evidence that the total number of fast-food restaurants will decrease. If the average number of customers per fast-food restaurant is increasing, then fewer fast-food restaurants will be needed to serve the same—or a lesser—number of customers.

B Even if a few individuals do not follow the general trends described, those trends could still reduce the overall demand for and number of fast-food restaurants.

C The argument is only about fast-food restaurants, not restaurants of other types.

D **Correct.** This suggests that even if the proportion of Canatrians eating at fast-food restaurants declines, the total number doing so may not decline. Thus, the total demand for and profitability of fast-food restaurants may not decline either, so the total number of fast-food restaurants in Canatria may not decrease.

E If anything, this strengthens the argument by pointing out an additional trend likely to reduce the demand for, and thus the number of, fast-food restaurants in Canatria.

The correct answer is D.

616. In order to withstand tidal currents, juvenile horseshoe crabs frequently burrow in the sand. Such burrowing discourages barnacles from clinging to their shells. When fully grown, however, the crabs can readily withstand tidal currents without burrowing, and thus they acquire substantial populations of barnacles. Surprisingly, in areas where tidal currents are very weak, juvenile horseshoe crabs are found not to have significant barnacle populations, even though they seldom burrow.

Which of the following, if true, most helps to explain the surprising finding?

(A) Tidal currents do not themselves dislodge barnacles from the shells of horseshoe crabs.

(B) Barnacles most readily attach themselves to horseshoe crabs in areas where tidal currents are weakest.

(C) The strength of the tidal currents in a given location varies widely over the course of a day.

(D) A very large barnacle population can significantly decrease the ability of a horseshoe crab to find food.

(E) Until they are fully grown, horseshoe crabs shed their shells and grow new ones several times a year.

Argument Construction

Situation Juvenile horseshoe crabs withstand tidal currents by burrowing in the sand. This action makes barnacles less likely to cling to their shells. Adult horseshoe crabs can withstand currents, so they do not burrow, and barnacles become more likely to cling to their shells. Surprisingly, however, juvenile horseshoe crabs that do not burrow, because tidal currents do not threaten them, do not have significant numbers of barnacles clinging to their shells.

Reasoning *What would most help explain the finding that nonburrowing juvenile horseshoe crabs do not have significant barnacle populations?* The finding suggests that there is some way in which nonburrowing juvenile horseshoe crabs either discourage barnacles from clinging to their shells, or get rid of the barnacles that do cling to their shells. Identifying how this is accomplished will explain the finding.

A This gives a reason why juvenile horseshoe crabs that do not burrow *would* have significant barnacle populations.

B If barnacles in areas of weak tidal currents readily attach themselves to horseshoe crabs, then it would be more likely for juvenile horseshoe crabs in such areas to have significant barnacle populations.

C The areas under discussion are those where tidal currents are very weak. The strength of currents may vary widely there, but presumably they are still weak compared to other areas.

D The surprising finding under discussion is why certain juvenile horseshoe crabs do not have significant barnacle populations, despite failing to engage in behavior that dislodges barnacles. That a very large barnacle population can hurt a horseshoe crab does not help explain such a finding.

E **Correct.** This statement properly identifies something that helps explain the surprising finding: If juvenile horseshoe crabs regularly shed their shells, they also regularly shed the barnacles that cling to those shells. Thus juvenile horseshoe crabs would most likely be found not to have significant barnacle populations.

The correct answer is E.

617. Last year a chain of fast-food restaurants, whose menu had always centered on hamburgers, added its first vegetarian sandwich, much lower in fat than the chain's other offerings. Despite heavy marketing, the new sandwich accounts for a very small proportion of the chain's sales. The sandwich's sales would have to quadruple to cover the costs associated with including it on the menu. Since such an increase is unlikely, the chain would be more profitable if it dropped the sandwich.

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

(A) Although many of the chain's customers have never tried the vegetarian sandwich, in a market research survey most of those who had tried it reported that they were very satisfied with it.

(B) Many of the people who eat at the chain's restaurants also eat at the restaurants of competing chains and report no strong preference among the competitors.

(C) Among fast-food chains in general, there has been little or no growth in hamburger sales over the past several years as the range of competing offerings at other restaurants has grown.

(D) When even one member of a group of diners is a vegetarian or has a preference for low-fat food, the group tends to avoid restaurants that lack vegetarian or low-fat menu options.

(E) An attempt by the chain to introduce a lower-fat hamburger failed several years ago, since it attracted few new customers and most of the chain's regular customers greatly preferred the taste of the regular hamburgers.

Argument Evaluation

Situation Last year a fast-food restaurant chain specializing in hamburgers started offering a low-fat vegetarian sandwich and marketed it heavily. The new sandwich's sales are far too low to cover the costs associated with including it on the menu.

Reasoning *What evidence would most weaken the support provided by the cited facts for the prediction that it would be more profitable for the chain to drop the sandwich?* The implicit argument is that since the new sandwich's sales are too low to cover the costs associated with including it on the menu, offering the sandwich diminishes the chain's profitability and will continue to do so if the sandwich continues to be offered. This reasoning assumes that the sandwich provides the chain no substantial indirect financial benefits except through its direct sales. It also assumes that the sandwich's sales will not increase sufficiently to make the sandwich a viable product. Any evidence casting doubt on either of these assumptions will weaken the argument.

A This gives information only about the respondents to the survey who had tried the sandwich (possibly very few), who were probably already more open to liking a vegetarian sandwich than any of the chain's other customers. So their responses are probably unrepresentative of the chain's customers in general and do not suggest that the sandwich has enough market potential.

B Although the issue of competition with other restaurants is not raised in the information provided, this new information, if anything, strengthens the argument, by suggesting that the introduction of the new sandwich has not significantly enhanced customer preference for eating at the restaurants that offer the new sandwich.

C This suggests that the cause of stagnation in fast-food restaurants' hamburger sales has been competition from non-fast-food restaurants, but not that the non-fast-food restaurants competed by offering vegetarian options.

D **Correct.** This suggests that even if the sandwich's sales are low, it may indirectly increase the chain's overall profits by encouraging large groups to eat at the chain.

E This strengthens the argument by suggesting that the chain's customers are generally not interested in low-fat menu options such as the new sandwich.

The correct answer is D.

618. Transportation expenses accounted for a large portion of the total dollar amount spent on trips for pleasure by residents of the United States in 1997, and about half of the total dollar amount spent on transportation was for airfare. However, the large majority of United States residents who took trips for pleasure in 1997 did not travel by airplane but used other means of transportation.

If the statements above are true, which of the following must also be true about United States residents who took trips for pleasure in 1997?

(A) Most of those who traveled by airplane did so because the airfare to their destination was lower than the cost of other available means of transportation.

(B) Most of those who traveled by airplane did so because other means of transportation to their destination were unavailable.

(C) Per mile traveled, those who traveled by airplane tended to spend more on transportation to their destination than did those who used other means of transportation.

(D) Overall, people who did not travel by airplane had lower average transportation expenses than people who did.

(E) Those who traveled by airplane spent about as much, on average, on other means of transportation as they did on airfare.

Argument Construction

Situation In 1997, about half of total transportation spending by U.S. residents taking trips for pleasure was for airfare. But the large majority of U.S. residents who took trips for pleasure in 1997 did not travel by airplane.

Reasoning *What can be deduced from the stated facts?* The information provided indicates that among U.S. residents who took trips for pleasure in 1997, those who traveled by airplane were a small minority. Yet this small minority's spending for airfare accounted for half of all transportation spending among residents taking trips for pleasure. It follows that on average, those who traveled by airplane must have spent far more per person on transportation than those who did not travel by airplane.

A This does not follow logically from the information given. Most of those who traveled by airplane may have done so even if flying was more expensive than other modes of transportation—for example, because flying was faster or more comfortable.

B This does not follow from the information given. Most of those who traveled by airplane may have done so even if many other modes of transportation were available—the other modes may all have been less desirable.

C This does not follow from the information given. Those who traveled by airplane may have traveled much farther on average than those who used other means of transportation, so their transportation spending per mile traveled need not have been greater.

D **Correct.** As explained above, those who traveled by airplane must have spent more per person on transportation than those who did not travel by airplane, on average. In other words, those who did not travel by airplane must have had lower average transportation expenses than those who did.

E This does not follow from the information given. Although half the total dollar spending on transportation was for airfare, much of the transportation spending that was not for airfare was by the large majority of U.S. residents who did not travel by airplane.

The correct answer is D.

619. Voters commonly condemn politicians for being insincere, but politicians often must disguise their true feelings when they make public statements. If they expressed their honest views—about, say, their party's policies—then achieving politically necessary compromises would be much more difficult. Clearly, the very insincerity that people decry shows that our government is functioning well.

Which of the following, if true, most seriously undermines this reasoning?

(A) Achieving political compromises is not all that is necessary for the proper functioning of a government.
(B) Some political compromises are not in the best long-term interest of the government.
(C) Voters often judge politicians by criteria other than the sincerity with which they express their views.
(D) A political party's policies could turn out to be detrimental to the functioning of a government.
(E) Some of the public statements made by politicians about their party's policies could in fact be sincere.

Argument Evaluation

Situation Politicians must often make insincere public statements because expressing their true feelings would make it harder for them to achieve politically necessary compromises.

Reasoning *What would suggest that the argument's premises do not establish that politicians' insincerity shows our government is functioning well?* The implicit reasoning is that insincerity helps politicians achieve politically necessary compromises, and these compromises help our government to function well, so insincerity must show that our government is functioning well. Evidence that these necessary compromises do not ensure that our government functions well would undermine the argument's reasoning, as would evidence that politicians' insincerity has other substantial effects that hinder the government's functioning.

A **Correct.** If governments may function poorly even when insincerity allows necessary political compromises to be made, then the argument's premises do not establish that politicians' insincerity shows our government is functioning well.

B The argument does not require that all political compromises help government to function well, only that politically necessary compromises do.

C Even if voters often judge politicians by criteria other than their sincerity, they may also often decry politicians' insincerity, not realizing or caring that such insincerity helps the government function well.

D Even if a political party's policies impair the government's functioning, politically necessary compromises by politicians in that party could improve the government's functioning.

E Even if politicians sometimes speak sincerely about their party's policies, their general willingness to be insincere as needed to achieve politically necessary compromises could be a sign that the government is functioning well.

The correct answer is A.

620. To reduce waste of raw materials, the government of Sperland is considering requiring household appliances to be broken down for salvage when discarded. To cover the cost of salvage, the government is planning to charge a fee, which would be imposed when the appliance is first sold. Imposing the fee at the time of salvage would reduce waste more effectively, however, because consumers tend to keep old appliances longer if they are faced with a fee for discarding them.

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

(A) Increasing the cost of disposing of an appliance properly increases the incentive to dispose of it improperly.

(B) The fee provides manufacturers with no incentive to produce appliances that are more durable.

(C) For people who have bought new appliances recently, the salvage fee would not need to be paid for a number of years.

(D) People who sell their used, working appliances to others would not need to pay the salvage fee.

(E) Many nonfunctioning appliances that are currently discarded could be repaired at relatively little expense.

Evaluation of a Plan

Situation A government is considering requiring household appliances to be broken down for salvage when discarded. To cover the salvage costs, the government plans to charge a fee on appliance sales.

Reasoning *What would suggest that charging the fee at the time of salvage would less effectively reduce waste than charging the fee at the time of sale would?* The argument is that charging the fee at the time of salvage would reduce waste of raw materials because it would encourage consumers to keep their appliances longer before salvaging them. This argument could be weakened by pointing out other factors that might increase waste if the fee is charged at the time of salvage or reduce waste if the fee is charged at the time of sale.

A **Correct.** This suggests that charging the fee at the time of salvage rather than the time of sale would encourage consumers to discard their appliances illegally, thereby increasing waste of raw materials by reducing the proportion of discarded appliances that are salvaged.

B This factor would remain the same regardless of whether the fee was charged at the time of sale or the time of salvage.

C This might be a reason for consumers to prefer the fee be charged at the time of salvage rather than the time of sale, but it does not suggest that charging the fee at the time of salvage would reduce waste less effectively.

D This provides an additional reason to expect that charging the fee at the time of salvage would help reduce waste, so it strengthens rather than weakens the argument.

E This would give consumers an additional reason to keep using their old appliances and postpone paying a fee at the time of salvage, so it strengthens rather than weakens the argument.

The correct answer is A.

621. When there is less rainfall than normal, the water level of Australian rivers falls and the rivers flow more slowly. Because algae whose habitat is river water grow best in slow-moving water, the amount of algae per unit of water generally increases when there has been little rain. By contrast, however, following a period of extreme drought, algae levels are low even in very slow-moving river water.

Which of the following, if true, does most to explain the contrast described above?

(A) During periods of extreme drought, the populations of some of the species that feed on algae tend to fall.

(B) The more slowly water moves, the more conducive its temperature is to the growth of algae.

(C) When algae populations reach very high levels, conditions within the river can become toxic for some of the other species that normally live there.

(D) Australian rivers dry up completely for short intervals in periods of extreme drought.

(E) Except during periods of extreme drought, algae levels tend to be higher in rivers in which the flow has been controlled by damming than in rivers that flow freely.

Argument Construction

Situation When Australian rivers flow slowly due to little rain, algae populations in those rivers increase. But after periods of extreme drought, algae levels are low even in water moving at speeds that would normally show population increases.

Reasoning *What would explain the contrast between algae levels in slow-moving water resulting from little rain and slow-moving water after a drought?* There must be some difference between what happens during periods in which there is simply less rainfall than normal and periods in which there is extreme drought, a difference that affects the algae population.

A This indicates one of the consequences of drought, and slightly suggests that this might be due to a lower algae level. But it does nothing to explain why algae levels might be lower after a drought.

B This could explain why some rivers that are slow-moving and have little water might have a high algae level—but not why the algae level is low in such rivers after a period of drought.

C This explains why levels of other species might be low when algae populations are high, not why algae populations are high when there is little rain, but low following a period of extreme drought.

D **Correct.** This statement properly identifies something that helps explain the contrast. According to the information given, the habitat of the algae under discussion is river water. If the river dries up, the algae will probably not survive. Then after the drought, algae population levels would likely take a while to rise again.

E This emphasizes that there is a contrast between what happens to algae during periods of extreme drought and what happens to them at other times, but it does not help explain that contrast.

The correct answer is D.

622. Increased use of incineration is sometimes advocated as a safe way to dispose of chemical waste. But opponents of incineration point to the 40 incidents involving unexpected releases of dangerous chemical agents that were reported just last year at two existing incinerators commissioned to destroy a quantity of chemical waste material. Since designs for proposed new incinerators include no additional means of preventing such releases, leaks will only become more prevalent if use of incineration increases.

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

(A) At the two incinerators at which leaks were reported, staff had had only cursory training on the proper procedures for incinerating chemical waste.

(B) Other means of disposing of chemical waste, such as chemical neutralization processes, have not been proven safer than incineration.

(C) The capacity of existing incinerators is sufficient to allow for increased incineration of chemical waste without any need for new incinerators.

(D) The frequency of reports of unexpected releases of chemical agents at newly built incinerators is about the same as the frequency at older incinerators.

(E) In only three of the reported incidents of unexpected chemical leaks did the releases extend outside the property on which the incinerators were located.

Argument Evaluation

Situation Last year, at two chemical waste incinerators, there were forty reported incidents involving unexpected releases of dangerous chemicals. Designs for proposed new incinerators include no additional safeguards against such releases. Therefore, increased use of incineration will likely make such releases more prevalent.

Reasoning *What would undermine the support provided for the conclusion that leaks will become more prevalent if more chemical waste is disposed of through incineration?* The argument draws a general conclusion about chemical waste incineration from evidence about only two particular incinerators. This reasoning would be undermined by any evidence that the leaks at those two incinerators were the result of something other than insufficient safeguards against such releases.

A **Correct.** If the staff training at the two incinerators was cursory, then the leaks may have been the results of staff not knowing how to use safeguards with which the incinerators are equipped that, if properly used, would have prevented the release of dangerous chemicals. Therefore, if staff at newer incinerators will be better trained, leaks might not become more prevalent even if chemical waste incineration becomes more common.

B Other chemical waste disposal methods may be safer than incineration even if no one has proven so; and even if they're not safer overall, they may involve fewer leaks.

C Continuing to use existing incinerators might well produce just as many leaks as switching to new incinerators would.

D This suggests that new incinerators produce as many leaks as older incinerators do, a finding that provides additional evidence that increased incineration even with proposed new incinerators would lead to more leaks.

E The argument is not about how far the releases from leaks extend, only about how many of them are likely to occur.

The correct answer is A.

623. Public health expert: **Increasing the urgency of a public health message may be counterproductive**. In addition to irritating the majority who already behave responsibly, **it may undermine all government pronouncements on health by convincing people that such messages are overly cautious**. And there is no reason to believe that those who ignore measured voices will listen to shouting.

The two sections in boldface play which of the following roles in the public health expert's argument?

(A) The first is a conclusion for which support is provided, but is not the argument's main conclusion; the second is an unsupported premise supporting the argument's main conclusion.

(B) The first is a premise supporting the only explicit conclusion; so is the second.

(C) The first is the argument's main conclusion; the second supports that conclusion and is itself a conclusion for which support is provided.

(D) The first is a premise supporting the argument's only conclusion; the second is that conclusion.

(E) The first is the argument's only explicit conclusion; the second is a premise supporting that conclusion.

Argument Construction

Situation A public health expert argues against increasing the urgency of public health messages by pointing out negative effects that may arise from such an increase, as well as by questioning its efficacy.

Reasoning *What roles are played in the argument by the two claims in boldface?* The first claim in boldface states that increasing the urgency of public health messages may be counterproductive. After making this claim, the public health expert mentions two specific reasons this could be so: it could irritate people who already behave responsibly, and it could convince people that all public health messages are too cautious. (The latter reason in the second claim in boldface). The phrase [*i*]*n addition to* indicates that neither claim in the second sentence is intended to support or explain the other. However, since each claim in the second sentence gives a reason to believe the claim in the first sentence, each independently supports the first sentence as a conclusion. The word [*a*]*nd* beginning the third sentence reveals that its intended role in the argument is the same as that of the two claims in the second sentence.

A Everything stated after the first sentence is intended to help support it, so the first sentence is the argument's main conclusion.

B Everything stated after the first sentence is intended to help support it, so the first sentence is a conclusion, not a premise.

C Each of the three claims in the second and third sentences is presented as an independent reason to accept the general claim in the first sentence. Therefore, nothing in the passage is intended to support the second statement in boldface as a conclusion.

D Everything stated after the first sentence is intended to help support it, so the first sentence is a conclusion, not a premise.

E **Correct.** Each of the three claims in the second and third sentences is presented as an independent reason to accept the general claim in the first sentence. Thus, each of those claims is a premise supporting the claim in the first sentence as the argument's only conclusion.

The correct answer is E.

624. Several industries have recently switched at least partly from older technologies powered by fossil fuels to new technologies powered by electricity. It is thus evident that less fossil fuel is being used as a result of the operations of these industries than would have been used if these industries had retained their older technologies.

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

(A) Many of the industries that have switched at least partly to the new technologies have increased their output.

(B) Less fossil fuel was used to manufacture the machinery employed in the new technologies than was originally used to manufacture the machinery employed in the older technologies.

(C) More electricity is used by those industries that have switched at least partly to the new technologies than by those industries that have not switched.

(D) Some of the industries that have switched at least partly to the new technologies still use primarily technologies that are powered by fossil fuels.

(E) The amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount that would have been used to power the older technologies.

Argument Evaluation

Situation Several industries have now switched, at least partly, to technologies using electricity rather than fossil fuels. Thus, less fossil fuel will be consumed as a result of the operation of these industries than otherwise would have been.

Reasoning *Which option most strengthens the argument?* One way to strengthen an argument is to eliminate or minimize one of its flaws or weaknesses. Because the conclusion is stated in terms of "fossil fuel consumed *as a result* of the operation of these industries," the claim would encompass even any fossil fuel that might be used to generate the electricity that the newer technologies use. Yet the premise of the argument does not address this issue. So the argument is strengthened if it turns out that less fossil fuel was used to produce the electricity than would have been used to power the older technologies.

A In an indirect way, this option slightly weakens rather than strengthens the argument. For *if* fossil fuels are used to produce the electricity now used by the industries and *if* it is because of these newer technologies that output has increased, the argument's conclusion is *less* likely.

B It does not matter how much fossil fuel was used to manufacture the older technologies *originally*. That has no bearing on whether more fossil fuel would have been expended as a result of the *continued operation* of the industries if the partial switch to newer technologies had not occurred.

C This is what we would expect, but it in no way strengthens the argument.

D This may seem to weaken the argument by indicating that the switch from older technologies will have less of an impact on fossil fuel consumption by these industries than we might have assumed. But since the conclusion makes no claim about how much consumption has been reduced, it is not clear that this option has any bearing on the strength of the argument one way or the other.

E **Correct.** This is the option that most strengthens the argument.

The correct answer is E.

625. The difference in average annual income in favor of employees who have college degrees, compared with those who do not have such degrees, doubled between 1980 and 1990. Some analysts have hypothesized that increased competition between employers for employees with college degrees drove up income for such employees.

Which of the following, if true, most seriously undermines the explanation described above?

(A) During the 1980s a growing percentage of college graduates, unable to find jobs requiring a college degree, took unskilled jobs.

(B) The average age of all employees increased slightly during the 1980s.

(C) The unemployment rate changed very little throughout most of the 1980s.

(D) From 1980 to 1990 the difference in average income between employees with advanced degrees and those with bachelor's degrees also increased.

(E) During the 1980s there were some employees with no college degree who earned incomes comparable to the top incomes earned by employees with a college degree.

Argument Evaluation

Situation The amount by which average annual income for employees with college degrees exceeds that for employees without such degrees doubled between 1980 and 1990.

Reasoning *What evidence would most strongly suggest that increased competition among employers for employees with college degrees does not explain the relative increase in those employees' incomes?* Such increased competition could not explain the relative increase in income for employees with college degrees if the competition did not actually increase, or if such competition occurred but did not result in employers paying higher wages or salaries, or if the increase in competition to hire employees without college degrees was even greater. So evidence that any of those conditions existed would undermine the analysts' explanation.

A **Correct.** This suggests that the supply of college graduates grew relative to employers' demand for them, and hence that employers' competition for college-educated employees did not actually increase.

B The average age might have increased equally for employees with college degrees and for those without them, so the increase is not clearly relevant to explaining why the difference between these two groups' average incomes grew.

C Even if the overall unemployment rate did not change, competition for college-educated employees could have increased while competition for other employees decreased.

D This statement gives information comparing income trends among two groups of those with college degrees, and is irrelevant to the comparison of income trends for those with college degrees and those without college degrees.

E Even if there was strong competition and high pay for certain unusual types of employees without college degrees, increasing competition for employees with college degrees might have explained the overall growing difference in average pay between employees with college degrees and those without.

The correct answer is A.

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

According to the last pre-election poll in Whippleton, most voters believe that the three problems government needs to address, in order of importance, are pollution, crime, and unemployment. Yet in the election, candidates from parties perceived as strongly against pollution were defeated, while those elected were all from parties with a history of opposing legislation designed to reduce pollution. These results should not be taken to indicate that the poll was inaccurate, however, since __________.

(A) some voters in Whippleton do not believe that pollution needs to be reduced

(B) every candidate who was defeated had a strong antipollution record

(C) there were no issues other than crime, unemployment, and pollution on which the candidates had significant differences of opinion

(D) all the candidates who were elected were perceived as being stronger against both crime and unemployment than the candidates who were defeated

(E) many of the people who voted in the election refused to participate in the poll

Argument Construction

Situation A pre-election poll indicated that most voters believed the three problems government needs to address, in order of importance, are pollution, crime, and unemployment. But in the election, candidates from parties with a history of opposing anti-pollution legislation beat candidates from parties perceived as more strongly against pollution.

Reasoning *What would most help explain how the poll might have been accurate despite the election results?* Since the poll indicated that voters were most concerned about pollution, it suggested that candidates from anti-pollution parties would be more likely to be elected, other things being equal—and yet those candidates were not elected. There are many possible explanations for this outcome that are compatible with the poll having been accurate. For example, voters might have been swayed by the candidates' personalities, qualifications, or advertising more than by their positions on the issues. Or some candidates might have convinced voters that their personal positions on the issues were different from those of their parties. Or voters might have chosen candidates based on their positions on crime and unemployment, considering those issues together more important than pollution alone. Any statement suggesting that any such factors explained the election results would logically complete the passage by providing a reason to believe that the poll could have been accurate despite those results.

A If the number of voters who did not believe that pollution needed to be reduced was large enough to explain the election results, then the poll was probably inaccurate. So this does not explain how the poll might have been accurate despite those results.

B This eliminates the possibility that candidates were defeated for having weak antipollution records conflicting with their parties' antipollution stances, so it eliminates one explanation of how the poll might have been accurate despite the election results. Thus, it slightly weakens the conclusion of the argument instead of providing a premise to support it.

C This eliminates the possibility that differences of opinion among the candidates on these other issues might explain the election results, but it does not explain how the poll could have been accurate despite the election results.

D **Correct.** The poll indicated that voters believed that the government needs to address crime and unemployment as well as pollution. So if the poll was accurate, the election outcome might have resulted from voters considering candidates' positions on crime and unemployment to be jointly more important than their positions on pollution.

E If anything, this provides a reason to doubt that the poll accurately reflected voters' opinions. It does not explain how the poll might have accurately reflected those opinions despite the election results.

The correct answer is D.

627. Manufacturing plants in Arundia have recently been acquired in substantial numbers by investors from abroad. Arundian politicians are proposing legislative action to stop such investment, justifying the proposal by arguing that foreign investors, opportunistically exploiting a recent fall in the value of the Arundian currency, were able to buy Arundian assets at less than their true value.

Which of the following, if true, casts the most serious doubt on the adequacy of the Arundian politicians' justification for the proposed legislation?

(A) The Arundian government originally welcomed the fall in the value of the Arundian currency because the fall made Arundian exports more competitive on international markets.

(B) Foreign investors who acquired Arundian manufacturing plants generally did so with no intention of keeping and running those plants over the long term.

(C) Without the recent fall in the value of the Arundian currency, many of the Arundian assets bought by foreign investors would have been beyond the financial reach of those investors.

(D) In Concordia, a country broadly similar to Arundia, the share of manufacturing assets that is foreign-controlled is 60 percent higher than it is in Arundia.

(E) The true value of an investment is determined by the value of the profits from it, and the low value of the Arundian currency has depressed the value of any profits earned by foreign investors from Arundian assets.

Argument Evaluation

Situation After a recent fall in the value of Arundian currency, foreign investors have been acquiring many Arundian manufacturing plants. Arundian politicians are proposing legislation to stop such investment.

Reasoning *What would most undermine the Arundian politicians' justification for the proposed legislation?* The politicians are justifying their proposal by claiming that foreign investors have been exploiting the fall in the currency's value by buying Arundian assets at less than their *true value* (whatever that means). Any evidence that their claim is false or meaningless would undermine their justification for the proposal, as would any evidence that the claim, even if true, does not provide a good reason to stop the foreign investments.

A This suggests that the foreign investors got a good deal on the manufacturing plants, since it provides evidence that those plants will now be more competitive and profitable. So, if anything, it supports the politicians' justification for their proposal rather than undermining it.

B This suggests that the foreign investors generally believe the manufacturing plants are undervalued, and intend to sell them at a profit as soon as the currency rises enough. So it supports the politicians' justification for their proposal rather than undermining it.

C This suggests that the recent fall in the currency's value made Arundian assets cost less than usual for foreign investors, thus arguably allowing the investors to buy the assets at less than their *true value*. So, if anything, it supports the politicians' justification for their proposal rather than undermining it.

D The Arundian politicians might consider the example of Concordia to be a warning of the disaster that could befall Arundia unless the legislation is enacted. So the situation in Concordia might be cited as support for the politicians' justification of their proposal.

E **Correct**. This implies that the fall in the Arundian currency's value has reduced the *true value* of Arundian manufacturing plants and any profits they may make, so it undermines the politicians' claim that the foreign investors exploited the fall in the currency's value to acquire the plants for less than their *true value*.

The correct answer is E.

628. Proposed new safety rules for the Beach City airport would lengthen considerably the minimum time between takeoffs from the airport. In consequence, the airport would be able to accommodate 10 percent fewer flights than currently use the airport daily. The city's operating budget depends heavily on taxes generated by tourist spending, and most of the tourists come by plane. Therefore, the proposed new safety rules, if adopted, will reduce the revenue available for the operating budget.

The argument depends on assuming which of the following?

(A) There are no periods of the day during which the interval between flights taking off from the airport is significantly greater than the currently allowed minimum.

(B) Few, if any, of the tourists who use the Beach City airport do so when their main destination is a neighboring community and not Beach City itself.

(C) If the proposed safety rules are adopted, the reduction in tourist numbers will not result mainly from a reduction in the number of tourists who spend relatively little in Beach City.

(D) Increasing the minimum time between takeoffs is the only way to achieve necessary safety improvements without a large expenditure by the city government on airport enhancements.

(E) The response to the adoption of the new safety rules would not include an increase in the number of passengers per flight.

Argument Construction

Situation Proposed safety rules for a city airport would reduce the number of daily flights the airport can accommodate. The city's operating budget depends heavily on taxes generated by tourists, who mostly come by plane. Therefore, adopting the safety rules will result in lower revenue available for the operating budget.

Reasoning *What must be true in order for the cited facts to support the conclusion that the proposed rules would reduce the revenue for the operating budget?* The implicit reasoning is that since the rules would reduce the number of flights that can be accommodated, they would thereby reduce the number of tourists arriving by plane, which in turn would reduce the tax revenue that tourist spending generates for the operating budget. This assumes that the actual number of daily flights would fall along with the number that the airport can accommodate; that fewer daily flights would mean fewer people flying into the airport; that fewer people flying into the airport would mean fewer tourists flying into the airport; that fewer tourists flying into the airport would mean fewer tourists visiting the city; that fewer tourists visiting the city would mean less taxable spending by tourists; and that less taxable spending by tourists would mean less revenue overall for the operating budget.

A Even if flights depart the airport less frequently during some periods of the day, increasing the minimum time between flights at busy times of day could reduce the total number of daily flights from the airport.

B Even if half the tourists flying into the airport were bound for other nearby towns, the other half could still spend enough in town to generate lots of revenue for the operating budget.

C It is possible that most tourists spend relatively little in the city, but a few spend a lot. In that case, even if a reduction in tourist numbers resulted mainly from a declining number of tourists who spend relatively little, it could also greatly reduce the already small number of tourists who spend a lot.

D This suggests that the proposed rules might be financially better for the city than any alternative way to improve safety, whereas the argument's conclusion is that the proposed rules are financially disadvantageous.

E **Correct.** If adopting the proposed rules would result in a large increase in the number of passengers per flight, fewer daily flights would not necessarily mean fewer passengers or fewer tourists overall.

The correct answer is E.

629. The introduction of new drugs into the market is frequently prevented by a shortage of human subjects for the clinical trials needed to show that the drugs are safe and effective. Since the lives and health of people in future generations may depend on treatments that are currently experimental, practicing physicians are morally in the wrong when, in the absence of any treatment proven to be effective, they fail to encourage suitable patients to volunteer for clinical trials.

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

(A) Many drugs undergoing clinical trials are intended for the treatment of conditions for which there is currently no effective treatment.

(B) Patients do not share the physician's professional concern for public health, but everyone has a moral obligation to alleviate suffering when able to do so.

(C) Usually, half the patients in a clinical trial serve as a control group and receive a nonactive drug in place of the drug being tested.

(D) An experimental drug cannot legally be made available to patients unless those patients are subjects in clinical trials of the drug.

(E) Physicians have an overriding moral and legal duty to care for the health and safety of their current patients.

Argument Evaluation

Situation A shortage of human subjects for clinical trials needed to show that new drugs are safe and effective often prevents those drugs from being introduced into the market. The lives and health of future generations may depend on treatments that are now experimental.

Reasoning *What would cast doubt on the judgment that doctors are morally obligated to encourage their patients to volunteer for clinical trials?* Note that the argument's conclusion, unlike its premises, is a moral judgment. This judgment could be cast into doubt by a moral principle that would be likely to conflict with it under the conditions described. For example, a principle suggesting that it is sometimes morally unacceptable for doctors to encourage their patients to volunteer for clinical trials would also suggest that they are not morally obligated to encourage their patients to volunteer for clinical trials, since anything morally obligatory must also be morally acceptable.

A If anything, this highlights how important it is to ensure that these drugs undergo clinical trials to benefit future generations, so it supports rather than casts doubt on the argument's conclusion.

B This suggests that patients are morally obligated to volunteer for clinical trials to help prevent suffering in future generations. If anything, this supports the claim that doctors are morally obligated to encourage their patients to volunteer.

C The clinical trial will probably not harm any patients in the control group, yet their participation will benefit future generations. So, if anything, this supports the claim that doctors should encourage their patients to volunteer.

D This legal barrier makes it even more essential for the drugs to undergo clinical trials in order to benefit patients, so it supports rather than casts doubt on the argument's conclusion.

E **Correct.** Since the experimental drugs' safety is being tested during the trials, the drugs may prove unsafe for subjects in the trials. If doctors have an overriding moral duty to keep their current patients safe, then it may be morally unacceptable for them to encourage those patients to volunteer for the trials.

The correct answer is E.

630. As a construction material, bamboo is as strong as steel and sturdier than concrete. Moreover, in tropical areas bamboo is a much less expensive construction material than either steel or concrete and is always readily available. In tropical areas, therefore, building with bamboo makes better economic sense than building with steel or concrete, except where land values are high.

Which of the following, if true, most helps to explain the exception noted above?

(A) Buildings constructed of bamboo are less likely to suffer earthquake damage than are steel and concrete buildings.

(B) Bamboo is unsuitable as a building material for multistory buildings.

(C) In order to protect it from being damaged by termites and beetles, bamboo must be soaked, at some expense, in a preservative.

(D) In some tropical areas, bamboo is used to make the scaffolding that is used during large construction projects.

(E) Bamboo growing in an area where land values are increasing is often cleared to make way for construction.

Argument Construction

Situation Bamboo is as strong as steel and sturdier than concrete when used as a construction material. In tropical areas, bamboo is much less expensive and is always readily available.

Reasoning *What explains the exception specified in the conclusion?* The argument's conclusion is that in tropical areas bamboo is a more economical building material than steel or concrete, *except where land values are high*. The information in the passage makes clear why bamboo is a more economical building material in tropical areas than are concrete or steel. So the question is: Why must an exception be made for areas where land values are high? Multistory buildings are particularly desirable in areas where land values are high, but bamboo may not be suitable for such buildings.

A This explains why bamboo would be preferable to steel or concrete in tropical areas especially prone to earthquakes. However, there is no clear connection to be made between areas where land values are high and areas especially prone to earthquakes.

B **Correct.** Multistory buildings provide a greater area of floor space for a given site area, and in that sense are more economical. A single-story building with the same floor space will occupy a much bigger site, so the higher the land values, the more likely it is that a multistory building will be built on that land. Thus, given this information, bamboo is less suitable for areas where land values are high.

C This undermines, to some extent, the claim that bamboo is an economical building material. But it does nothing to explain why it would be less economical specifically in areas where land values are high.

D This is irrelevant. Bamboo is used to build scaffolding for construction projects and as a building material for permanent structures. There is no way to infer from this that bamboo is less economical specifically in areas where land values are high.

E The fact that bamboo is cleared from an area to make room for construction in no way implies that bamboo would not be a suitable and economical building material for the area once it has been cleared.

The correct answer is B.

631. Newspaper editors should not allow reporters to write the headlines for their own stories. The reason for this is that, while the headlines that reporters themselves write are often clever, what typically makes them clever is that they allude to little-known information that is familiar to the reporter but that never appears explicitly in the story itself.

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

(A) The reporter who writes a story is usually better placed than the reporter's editor is to judge what the story's most newsworthy features are.

(B) To write a headline that is clever, a person must have sufficient understanding of the story that the headline accompanies.

(C) Most reporters rarely bother to find out how other reporters have written stories and headlines about the same events that they themselves have covered.

(D) For virtually any story that a reporter writes, there are at least a few people who know more about the story's subject matter than does the reporter.

(E) The kind of headlines that newspaper editors want are those that anyone who has read a reporter's story in its entirety will recognize as clever.

Argument Evaluation

Situation The headlines newspaper reporters write for their own stories are often clever only because they allude to little-known information that never appears explicitly in the stories themselves.

Reasoning *What would most help the argument support the conclusion that newspaper editors should not allow reporters to write headlines for their own stories?* The argument's only explicit premise is that the headlines newspaper reporters write for their own stories are often clever only because they allude to little-known information that never appears explicitly in the stories themselves. In order for this premise to support the conclusion that newspaper editors should not allow reporters to write their own headlines, it would be helpful to be given a reason why editors should avoid headlines alluding to such little-known information.

A This suggests that reporters are likely to write better headlines for their stories than editors are, so it weakens the argument that editors should not allow reporters to write their own headlines.

B Since a reporter who wrote a story is likely to understand that story well, this does not provide a reason why editors should not allow reporters to write their own headlines.

C If most reporters did what is suggested, they could perhaps hone their headline-writing skills—unless almost all reporters are weak in such skills, as suggested in the given information. The fact that they do not bother to do so may help explain why reporters' headline-writing skills are weak. An explanation of why this is so does not provide additional support for the argument's conclusion.

D The people who know more about a story's subject matter than the reporter writing the story might be just as likely to see the cleverness of allusions to little-known information as the reporters are. So, to the extent that this is relevant at all, it slightly weakens the argument by suggesting that obscurely clever headlines sometimes function as intended.

E **Correct.** The argument's explicit premise suggests that typically a reporter's headline for his or her own story cannot be recognized as clever by a reader who has read the whole story. So if editors want headlines that anyone who has read the accompanying stories would recognize as clever, they have a reason not to let reporters write the headlines.

The correct answer is E.

632. Scientists have modified feed corn genetically, increasing its resistance to insect pests. Farmers who tried out the genetically modified corn last season applied less insecticide to their corn fields and still got yields comparable to those they would have gotten with ordinary corn. Ordinary corn seed, however, costs less, and what these farmers saved on insecticide rarely exceeded their extra costs for seed. Therefore, for most feed-corn farmers, switching to genetically modified seed would be unlikely to increase profits.

Which of the following would it be most useful to know in order to evaluate the argument?

(A) Whether there are insect pests that sometimes reduce feed-corn yields, but against which commonly used insecticides and the genetic modification are equally ineffective

(B) Whether the price that farmers receive for feed corn has remained steady over the past few years

(C) Whether the insecticides typically used on feed corn tend to be more expensive than insecticides typically used on other crops

(D) Whether most of the farmers who tried the genetically modified corn last season applied more insecticide than was actually necessary

(E) Whether, for most farmers who plant feed corn, it is their most profitable crop

Argument Evaluation

Situation Farmers who grew feed corn genetically engineered to be pest resistant got yields comparable to those of farmers growing ordinary feed corn, but did so while using less pesticide. Since the amount saved on pesticide was rarely in excess of the extra costs for the genetically modified corn, most farmers will probably not increase profits by choosing the genetically engineered variety.

Reasoning *Which would be most useful to know in evaluating the argument?* To answer a question such as this, one should look for information that would strengthen or weaken the argument. If one had information that the farmers growing the genetically modified corn could have increased their yields last year at lower cost, this would be helpful in evaluating the argument, because this would show that the argument is weak.

A It does not matter to the argument whether there are pests against which pesticides and genetic resistance are equally ineffective, because that is compatible with there being pests against which they are not equally effective.

B Whether prices of feed corn go up or down affects the comparison groups equally.

C The relative cost of insecticides for other crops has no bearing on the argument because the argument is concerned with only feed corn.

D **Correct.** This option provides the information that it would be most useful to know in evaluating the argument. It shows that farmers growing genetically modified corn last year could have attained higher profits than they in fact did.

E The argument concerns only the relative profitability of growing one variety of feed corn versus another.

The correct answer is D.

633. Debater: The average amount of overtime per month worked by an employee in the manufacturing division of the Haglut Corporation is 14 hours. Most employees of the Haglut Corporation work in the manufacturing division. Furthermore, the average amount of overtime per month worked by any employee in the company generally does not fluctuate much from month to month. Therefore, each month, most employees of the Haglut Corporation almost certainly work at least some overtime.

The debater's argument is most vulnerable to criticism on which of these grounds?

(A) It takes for granted that the manufacturing division is a typical division of the corporation with regard to the average amount of overtime its employees work each month.

(B) It takes for granted that if a certain average amount of overtime is worked each month by each employee of the Haglut Corporation, then approximately the same amount of overtime must be worked each month by each employee of the manufacturing division.

(C) It confuses a claim from which the argument's conclusion about the Haglut Corporation would necessarily follow with a claim that would follow from the argument's conclusion only with a high degree of probability.

(D) It overlooks the possibility that even if, on average, a certain amount of overtime is worked by the members of some group, many members of that group may work no overtime at all.

(E) It overlooks the possibility that even if most employees of the corporation work some overtime each month, any one corporate employee may, in some months, work no overtime.

Argument Evaluation

Situation Most of the employees of the Haglut Corporation work in the manufacturing division, where employees average 14 hours per month in overtime. The average amount of overtime per month for employees at Haglut does not fluctuate much from month to month.

Reasoning *What is the argument's greatest weakness?* The argument's conclusion is that almost certainly each month most of the employees of Haglut work at least some overtime. Answer choice (D) identifies the argument's greatest weakness because it points out how the conclusion of the argument could be false even if all of the supporting information were true. For example, it could be that less than half of the employees work any overtime at all, but those that do work overtime work much more than 14 hours per month.

A The argument leaves open the possibility that in some divisions of the corporation, the average monthly overtime of its employees is quite different from 14 hours, even if (as the argument states) that average does not change much from month to month.

B The argument does not assume that there is a monthly amount of overtime worked by each employee of the manufacturing division equivalent to the company-wide average monthly overtime per employee.

C This does not identify a weakness that can be detected in the argument. Since the claims mentioned here are not specified, the passage provides no evidence that clearly indicates that this type of confusion is playing a role in the argument.

D **Correct.** The argument ignores the possibility that most of the employees of Haglut work no overtime at all in a particular month—which is quite consistent with the argument's assertion that the average number of monthly overtime hours per employee within the manufacturing division is 14.

E The possibility described by this is not overlooked by the argument, because this possibility is consistent with the conclusion. It could easily be that most employees of the corporation work some overtime each month—as the conclusion envisions—but that there are always some employees who do not work any overtime.

The correct answer is D.

634. Proponents of the recently introduced tax on sales of new luxury boats had argued that a tax of this sort would be an equitable way to increase government revenue because the admittedly heavy tax burden would fall only on wealthy people and neither they nor anyone else would suffer any economic hardship. In fact, however, 20 percent of the workers employed by manufacturers of luxury boats have lost their jobs as a direct result of this tax.

The information given, if true, most strongly supports which of the following?

(A) The market for luxury boats would have collapsed even if the new tax on luxury boats had been lower.

(B) The new tax would produce a net gain in tax revenue for the government only if the yearly total revenue that it generates exceeds the total of any yearly tax-revenue decrease resulting from the workers' loss of jobs.

(C) Because many people never buy luxury items, imposing a sales tax on luxury items is the kind of legislative action that does not cost incumbent legislators much popular support.

(D) Before the tax was instituted, luxury boats were largely bought by people who were not wealthy.

(E) Taxes can be equitable only if their burden is evenly distributed over the entire population.

Argument Construction

Situation Proponents of a recently introduced tax on sales of new luxury boats argued that it would be an equitable way to increase government revenue because the tax would fall only on the wealthy and cause no economic hardship. But because of the tax, 20 percent of luxury-boat manufacturing workers have lost their jobs.

Reasoning *What conclusion do the statements about the proponents' argument and the tax's effects support?* Since the tax caused many workers to lose their jobs, apparently the proponents were incorrect in asserting that it would cause no one to suffer any economic hardship. Thus, their justification for concluding that the tax is an equitable way to increase government revenue is factually inaccurate, casting doubt on that conclusion.

A The passage indicates that the tax directly caused a significant decrease (though not necessarily a collapse) in the market for luxury boats. But the passage contains no evidence about whether such a decrease might not have occurred if the new tax had been somewhat lower.

B **Correct.** Since the tax caused the workers to lose their jobs, it might have made the government lose revenue from payroll taxes that the laid-off workers would have paid if they had kept their jobs. So if the yearly total revenue generated directly and indirectly by the tax were less than those total yearly payroll taxes and any other tax revenue that was lost as a result of the tax, the tax would have caused a net loss in tax revenue.

C The passage contains no information about what types of legislative actions cost, or do not cost, incumbent legislators popular support.

D Although the passage suggests that some of the tax proponents' assumptions were wrong, it contains no information suggesting that those proponents were wrong in thinking that luxury boats are purchased mainly by wealthy people.

E The passage does not provide any basis for determining what makes a tax equitable or about whether the luxury boat tax is equitable. The tax's proponents evidently felt that a tax whose burden falls only on the wealthy rather than evenly on the entire population can be equitable.

The correct answer is B.

635. In Wareland last year, 16 percent of licensed drivers under 21 and 11 percent of drivers ages 21–24 were in serious accidents. By contrast, only 3 percent of licensed drivers 65 and older were involved in serious accidents. These figures clearly show that the greater experience and developed habits of caution possessed by drivers in the 65-and-older group make them far safer behind the wheel than the younger drivers are.

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

(A) Drivers 65 and older do not, on average, drive very many fewer miles per year than drivers 24 and younger.

(B) Drivers 65 and older do not constitute a significantly larger percentage of licensed drivers in Wareland than drivers ages 18–24 do.

(C) Drivers 65 and older are less likely than are drivers 24 and younger to drive during weather conditions that greatly increase the risk of accidents.

(D) The difference between the accident rate of drivers under 21 and of those ages 21–24 is attributable to the greater driving experience of those in the older group.

(E) There is no age bracket for which the accident rate is lower than it is for licensed drivers 65 and older.

Argument Evaluation

Situation Last year in Wareland, a much higher percentage of drivers 24 and under than of drivers 65 and older were in serious accidents.

Reasoning *What must be true for the observation about the accident rates to support the conclusion that the greater experience and caution of drivers 65 and older make them safer behind the wheel than the younger drivers?* Several factors other than greater experience and caution could explain the lower accident rate among the older drivers. For example, the older drivers might simply drive much less than the younger ones, but still get in just as many accidents per mile driven. Or perhaps because the older drivers are more often retired, their schedules less often lead them to drive at times of day when accident rates are greater for everyone. Or they might be more likely to live in rural areas with less traffic and lower accident rates. The argument depends on assuming that none of these factors fully explains the difference in accident rates.

A **Correct.** Although we are given no information about the possible extent of any difference in average miles driven, the (somewhat vague) information that drivers 65 and older drive *very many fewer miles per year*, on average, than drivers 24 and younger would cast serious doubt on the statistical argument given. The argument assumes that the difference in miles driven is not sufficiently substantial to undermine the argument.

B The argument is only about the discrepancy between the percentages of the drivers in two specific age groups who were in serious accidents last year. The percentages of licensed drivers who fall in these age groups are irrelevant.

C Even if drivers 65 and older are just as likely as younger drivers to drive in inclement weather, they may do so far more carefully than the younger drivers, so the older drivers' greater experience and caution could still explain their lower accident rates.

D Even if greater experience does not explain the difference between the accident rates of the two younger groups of drivers, it might still explain the differences between the accident rate of those two younger groups taken together and that of drivers aged 65 and older.

E The accident rate could be lower for drivers in late middle age than for those 65 and older because drivers in late middle age are also cautious and experienced, but their reflexes and vision tend to be less impaired. Even if that were true, the experience and caution of the drivers 65 and older might still make them safer than drivers 24 and under.

The correct answer is A.

636. In the past the country of Malvernia has relied heavily on imported oil. Malvernia recently implemented a program to convert heating systems from oil to natural gas. Malvernia currently produces more natural gas each year than it uses, and oil production in Malvernian oil fields is increasing at a steady pace. If these trends in fuel production and usage continue, therefore, Malvernian reliance on foreign sources for fuel is likely to decline soon.

Which of the following would it be most useful to establish in evaluating the argument?

(A) When, if ever, will production of oil in Malvernia outstrip production of natural gas?
(B) Is Malvernia among the countries that rely most on imported oil?
(C) What proportion of Malvernia's total energy needs is met by hydroelectric, solar, and nuclear power?
(D) Is the amount of oil used each year in Malvernia for generating electricity and fuel for transportation increasing?
(E) Have any existing oil-burning heating systems in Malvernia already been converted to natural-gas-burning heating systems?

Argument Evaluation

Situation Malvernia has relied heavily on imported oil, but recently began a program to convert heating systems from oil to natural gas. Malvernia produces more natural gas than it uses, so it will probably reduce its reliance on imported oils if these trends continue.

Reasoning *Which option provides the information that it would be most useful to know in evaluating the argument?* In other words, we are looking for the option which—depending on whether it was answered yes or no—would either most weaken or most strengthen the argument. The argument indicates that Malvernia will be using less oil for heating and will be producing more oil domestically. But the conclusion that Malvernia's reliance on foreign oil will decline, assuming the current trends mentioned continue, would be seriously undermined if there was something in the works that was bound to offset these trends, for instance, if it turned out that the country's need for oil was going to rise drastically in the coming years.

A Since both counteract the need for imported oil, it makes little difference to the argument whether domestic oil production exceeds domestic natural gas.

B Whether there are many countries that rely more on foreign oil than Malvernia would have little impact on whether Malvernia's need for foreign oil can be expected to decline.

C Since there is no information in the argument about whether Malvernia can expect an increase or decrease from these other energy sources, it does not matter how much they now provide.

D **Correct.** This option provides the information that it would be most useful to know in evaluating the argument.

E The argument tells us that a program has begun *recently* to convert heating systems from oil to gas. So, even if no such conversions have been completed, the argument still indicates that they can be expected to occur.

The correct answer is D.

637. Exposure to certain chemicals commonly used in elementary schools as cleaners or pesticides causes allergic reactions in some children. Elementary school nurses in Renston report that the proportion of schoolchildren sent to them for treatment of allergic reactions to those chemicals has increased significantly over the past ten years. Therefore, either Renston's schoolchildren have been exposed to greater quantities of the chemicals, or they are more sensitive to them than schoolchildren were ten years ago.

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

(A) The number of school nurses employed by Renston's elementary schools has not decreased over the past ten years.

(B) Children who are allergic to the chemicals are no more likely than other children to have allergies to other substances.

(C) Children who have allergic reactions to the chemicals are not more likely to be sent to a school nurse now than they were ten years ago.

(D) The chemicals are not commonly used as cleaners or pesticides in houses and apartment buildings in Renston.

(E) Children attending elementary school do not make up a larger proportion of Renston's population now than they did ten years ago.

Argument Construction

Situation Some children have allergic reactions to some of the chemicals commonly used in elementary schools as cleaners and pesticides. The number of children sent to elementary school nurses in Renston for allergic reactions to such chemicals has risen significantly over the past ten years.

Reasoning *What must the argument assume?* The argument's conclusion presents just two alternatives: either the children are exposed to more of the chemicals than children in earlier years *or* they are more sensitive. But there is a third possible explanation for the significant increase in school-nurse visits that the school nurses have reported: that children are just more inclined to go to the school nurse when they experience an allergic reaction than were children several years ago. For the conclusion to follow from its premises, the argument must assume that this is not the correct explanation.

A If the number of elementary school nurses in Renston elementary schools had decreased over the past ten years, that would in no way explain the rise in the proportion of children reporting to school nurses for allergic reactions.

B Only school-nurse visits for allergic reactions to the cleaners and pesticides used in elementary schools are in question in the argument. Of course there could be school-nurse visits for allergic reactions to other things, but that issue does not arise in the argument.

C **Correct.** This can be seen by considering whether the argument would work if we assume that this were false, i.e., that a school-nurse visit *is* more likely in such cases. As noted above, this provides an alternative to the two explanations that the conclusion claims are the sole possibilities.

D This does not need to be assumed by the argument. The argument's conclusion suggests that children may in recent years have had greater exposure to the chemicals, not that this exposure has occurred exclusively in the schools. The argument does not rely on this latter assumption.

E The argument does not need to make this assumption. The argument is framed in terms of proportions of children having school-nurse visits for certain allergic reactions. *How many* children there are or what proportion such children are of Renston's total population is not directly relevant to the argument.

The correct answer is C.

638. Normally, the pineal gland governs a person's sleep-wake cycle by secreting melatonin in response to the daily cycle of light and darkness as detected by the eye. Nonetheless, many people who are totally blind due to lesions in the visual cortex of the brain easily maintain a 24-hour sleep-wake cycle. So the neural pathway by which the pineal gland receives information from the eye probably does not pass through the visual cortex.

For purposes of evaluating the argument it would be most useful to establish which of the following?

(A) Whether melatonin supplements help people who have difficulty maintaining a 24-hour sleep cycle to establish such a pattern

(B) Whether the melatonin levels of most totally blind people who successfully maintain a 24-hour sleep-wake cycle change in response to changes in exposure to light and darkness

(C) Whether melatonin is the only substance secreted by the pineal gland

(D) Whether most people who do not have a 24-hour sleep-wake cycle nevertheless have a cycle of consistent duration

(E) Whether there are any people with normal vision whose melatonin levels respond abnormally to periods of light and darkness

Argument Evaluation

Situation Normally, a person's sleep-wake cycle is governed by the pineal gland secreting melatonin in response to the daily cycle of light and darkness as detected by the eye. Yet many people who are totally blind due to lesions of the visual cortex easily maintain a 24-hour sleep-wake cycle.

Reasoning *What additional information would be most helpful in evaluating the argument?* The argument's conclusion is that the neural pathway by which the pineal gland receives information probably does not pass through the visual cortex. This is suggested by the fact that people without a well-functioning visual cortex (e.g., people with a certain type of blindness) can nonetheless maintain a 24-hour sleep-wake cycle. Is it by the pineal gland's secretion of melatonin that they do so? The argument tells us that *normally* (i.e., in sighted people), this is the mechanism for sleep regulation. But the argument depends on assuming that a similar mechanism is operating in people who are blind but have well-regulated sleep cycles. The best choice will be the one that helps us decide whether that assumption is correct.

A This question would not give us an answer that would help in evaluating the argument. A "no" answer would not clarify whether the pineal gland-melatonin mechanism operates in people who are blind. A "yes" answer would do no better. The question refers only to people who have sleep dysfunctions (which the argument does not address).

B **Correct.** Answering this question would provide the most useful information for evaluating the argument. A "yes" answer would help confirm a key assumption of the argument: that blind people rely on the pineal gland-melatonin mechanism for sleep regulation. A "no" answer would help disconfirm that assumption.

C Whether or not there are other substances secreted by the pineal gland makes no difference to the reasoning. The argument relies on the premise that the pineal gland governs the sleep cycle *by secreting melatonin*. For example, if the pineal gland sometimes secreted adrenaline, that would still have no bearing on the argument.

D The consistency or inconsistency of the duration of some people's sleep patterns has no relevance to the reasoning. Their sleep patterns could be due to any of a number of factors.

E This does not help, for there could be sighted people whose melatonin levels respond abnormally simply because of a pineal-gland abnormality.

The correct answer is B.

639. **In countries where automobile insurance includes compensation for whiplash injuries sustained in automobile accidents, reports of having suffered such injuries are twice as frequent as they are in countries where whiplash is not covered**. Presently, no objective test for whiplash exists, so it is true that spurious reports of whiplash injuries cannot be readily identified. Nevertheless, these facts do not warrant the conclusion drawn by some commentators that in the countries with the higher rates of reported whiplash injuries, half of the reported cases are spurious. Clearly, **in countries where automobile insurance does not include compensation for whiplash, people often have little incentive to report whiplash injuries that they actually have suffered.**

In the argument given, the two boldfaced portions play which of the following roles?

(A) The first is a claim that the argument disputes; the second is a conclusion that has been based on that claim.

(B) The first is a claim that has been used to support a conclusion that the argument accepts; the second is that conclusion.

(C) The first is evidence that has been used to support a conclusion for which the argument provides further evidence; the second is the main conclusion of the argument.

(D) The first is a finding whose implications are at issue in the argument; the second is a claim presented in order to argue against deriving certain implications from that finding.

(E) The first is a finding whose accuracy is evaluated in the argument; the second is evidence presented to establish that the finding is accurate.

Argument Evaluation

Situation Reported whiplash injuries are twice as common in countries where car insurance companies pay compensation for such injuries as they are in countries where insurance companies do not. Although there is no objective test for whiplash, this does not mean, as some suggest, that half of the reports of such injuries are fake. It could simply be that where insurance will not pay for such injuries, people are less inclined to report them.

Reasoning *What roles do the two boldfaced portions play in the argument?* The first portion tells us about the correlation between reported cases of whiplash in countries and the willingness of insurance companies in those countries to compensate for whiplash injuries. The argument next states that whiplash is difficult to objectively verify. The argument then asserts that *although* this last fact, taken together with the first boldfaced portion, has led some to infer that over half of the reported cases in countries with the highest whiplash rates are spurious, such an inference is unwarranted. The second boldfaced portion then helps to explain why such an inference is not necessarily warranted by offering an alternative explanation.

A The claim made in the first boldfaced portion is never disputed in the argument; at dispute is how to account for the fact that this claim is true. The second is not the argument's conclusion.

B In a manner of speaking, perhaps, the argument uses the first portion to support its conclusion; but there is no indication that it has been used elsewhere to do so. In any case, the second boldfaced portion is not the argument's conclusion.

C The first has been used to support a conclusion that the argument *rejects*; the second boldfaced portion is not the argument's conclusion.

D **Correct.** This option correctly identifies the roles played in the argument by the boldfaced portions.

E The accuracy of the first boldfaced portion is never questioned in the argument; nor is the second intended to somehow help show that the first is accurate. Rather, the argument assumes that the first portion is accurate.

The correct answer is D.

640. Last year Comfort Airlines had twice as many delayed flights as the year before, but the number of complaints from passengers about delayed flights went up three times. It is unlikely that this disproportionate increase in complaints was rooted in an increase in overall dissatisfaction with the service Comfort Airlines provides, since the airline made a special effort to improve other aspects of its service last year.

Which of the following, if true, most helps to explain the disproportionate increase in customer complaints?

(A) Comfort Airlines had more flights last year than the year before.
(B) Last year a single period of unusually bad weather caused a large number of flights to be delayed.
(C) Some of the improvements that Comfort Airlines made in its service were required by new government regulations.
(D) The average length of a flight delay was greater last year than it was the year before.
(E) The average number of passengers per flight was no higher last year than the year before.

Argument Construction

Situation Last year Comfort Airlines had twice as many delayed flights as it did the year before, but three times as many passenger complaints about delayed flights. The airline made a special effort to improve other aspects of its service last year.

Reasoning *What could explain why the number of complaints about delayed flights increased disproportionately to the number of delayed flights last year?* In other words, why did the average number of passenger complaints per delayed flight go up last year? One obvious possibility is that the average number of passengers per delayed flight was greater last year than it had been the year before. Another is that the flight delays tended to cause worse problems for passengers last year than they had the year before, so that on average each delay was more upsetting for the passengers.

A This helps explain why the airline had more delayed flights last year, but not why the increase in complaints about delayed flights was disproportionate to the increase in delayed flights.

B This helps explain why the airline had more delayed flights last year. But, if anything, the situation should have reduced the number of passenger complaints per delayed flight, since many passengers should have realized that the unusually bad weather was not the airline's fault.

C If any of the improvements concerned handling of flight delays, for example, and passengers were aware that government regulations addressed this, then passengers might have complained more than previously. But the information we are given here is too general and too vague to explain the disproportionate increase in complaints.

D **Correct.** Longer flight delays would have more severely inconvenienced passengers and thus would probably have generated more passenger complaints per delay.

E This rules out the possibility that an increased number of passengers per delayed flight could have caused the disproportionate increase in the number of complaints about delayed flights. But no alternative explanation is offered.

The correct answer is D

641. Last year a global disturbance of weather patterns disrupted harvests in many of the world's important agricultural areas. Worldwide production of soybeans, an important source of protein for people and livestock alike, was not adversely affected, however. Indeed, last year's soybean crop was actually slightly larger than average. Nevertheless, the weather phenomenon is probably responsible for a recent increase in the world price of soybeans.

Which of the following, if true, provides the strongest justification for the attribution of the increase in soybean prices to the weather phenomenon?

(A) Last year's harvest of anchovies, which provide an important protein source for livestock, was disrupted by the effects of the weather phenomenon.

(B) Most countries that produce soybeans for export had above-average harvests of a number of food crops other than soybeans last year.

(C) The world price of soybeans also rose several years ago, immediately after an earlier occurrence of a similar global weather disturbance.

(D) Heavy rains attributable to the weather phenomenon improved grazing pastures last year, allowing farmers in many parts of the world to reduce their dependence on supplemental feed.

(E) Prior to last year, soybean prices had been falling for several years.

Argument Construction

Situation A weather disturbance last year disrupted harvests worldwide but did not reduce production of soybeans, a protein source for both people and livestock. Soybean prices increased nonetheless, likely a result of the weather.

Reasoning *What evidence would suggest that the weather disturbance caused the increase in soybean prices even though it did not reduce soybean production?* Prices tend to increase when the supply of a product falls relative to the demand for the product. But the production of soybeans did not fall. Evidence that the weather disturbance either hindered the global distribution of soybeans or increased global demand for soybeans could support the claim that the weather disturbance caused the increase in soybean prices.

A **Correct.** If the weather disturbance reduced the anchovy harvest, and anchovies provide protein for livestock just as soybeans do, then more soybeans for livestock feed would be needed to compensate for the lack of anchovies. The resulting increase in demand for soybeans could thus have increased global soybean prices.

B This is not surprising, given that the weather disturbance did not severely affect the soybean-producing countries, but it does not explain how the weather disturbance could have caused soybean prices to increase.

C The rise in soybean prices after the earlier weather disturbance could easily have been a coincidence. Or, unlike last year's disturbance, the earlier disturbance could have reduced soybean production.

D This suggests that demand for soybeans should have fallen as a result of the weather disturbance, so it does not explain why soybean prices rose.

E If soybean prices were unusually low for some temporary reason when the weather disturbance occurred, they might have been likely to rise back to normal levels even without the weather disturbance.

The correct answer is A.

642. Most of the year, the hermit thrush, a North American songbird, eats a diet consisting mainly of insects, but in autumn, as the thrushes migrate to their Central and South American wintering grounds, they feed almost exclusively on wild berries. Wild berries, however, are not as rich in calories as insects, yet thrushes need to consume plenty of calories in order to complete their migration. One possible explanation is that berries contain other nutrients that thrushes need for migration and that insects lack.

Which of the following, if true, most seriously calls into question the explanation given for the thrush's diet during migration?

(A) Hermit thrushes, if undernourished, are unable to complete their autumn migration before the onset of winter.
(B) Insect species contain certain nutrients that are not found in wild berries.
(C) For songbirds, catching insects requires the expenditure of significantly more calories than eating wild berries does.
(D) Along the hermit thrushes' migration routes, insects are abundant throughout the migration season.
(E) There are some species of wild berries that hermit thrushes generally do not eat, even though these berry species are exceptionally rich in calories.

Argument Evaluation

Situation Hermit thrushes are songbirds that usually eat insects but switch to eating berries when migrating. The thrushes need lots of calories to migrate, but berries contain fewer calories than insects do. Perhaps the berries contain nutrients that insects do not provide.

Reasoning *What would cast doubt on the claim that the thrushes switch to berries because berries contain nutrients that insects lack and that the thrushes need for their migration?* Evidence that berries do not contain such nutrients or that thrushes do not decrease their net calorie consumption by eating berries would cast doubt on the proposed explanation. So would any evidence that supported an alternative explanation for the diet change during migration—for example, seasonal or regional differences in the amount or quality of berries or insects available for the thrushes to consume.

A Even if thrushes need to be well-nourished to finish migrating before winter, extra nutrients found in berries but not insects might help provide the nourishment they need.

B Even if insects contain *certain nutrients* not found in wild berries, those specific nutrients may not be the ones the thrushes need for their migration.

C **Correct.** This suggests that the thrushes might gain more net calories from eating berries than from eating insects, which could explain why they switch to eating berries even if the berries contain no extra nutrients.

D By ruling out a lack of insects to eat while migrating as an alternative explanation for why the thrushes switch to eating berries, this would support the proposed explanation.

E The calorie-rich species of berries the thrushes do not eat might be poisonous or indigestible for them, even if the species of berries the thrushes do eat contain nutrients they need to migrate.

The correct answer is C.

643. The kinds of hand and wrist injuries that result from extended use of a computer while maintaining an incorrect posture are common among schoolchildren in Harnville. Computers are important to the school curriculum there, so instead of reducing the amount their students use computers, teachers plan to bring about a sharp reduction in the number of these injuries by carefully monitoring their students' posture when using computers in the classroom.

Which of the following would it be most useful to know in order to assess the likelihood that the teachers' plan will be successful?

(A) Whether extended use of a computer while maintaining incorrect posture can cause injuries other than hand and wrist injuries

(B) Whether hand and wrist injuries not caused by computer use are common among schoolchildren in Harnville

(C) What proportion of schoolchildren in Harnville with hand and wrist injuries use computers extensively outside the classroom

(D) Whether changes in the curriculum could reduce the schools' dependence on computers

(E) What proportion of schoolchildren in Harnville already use correct posture while using a computer

Evaluation of a Plan

Situation Hand and wrist injuries from using computers while maintaining poor posture are common among schoolchildren in Harnville. Teachers plan to greatly reduce the number of such injuries by monitoring their students' posture while the students use computers in the classroom.

Reasoning *What would be most helpful to know to determine the likelihood that the teachers' plan will succeed?* The primary concern is the *posture* students adopt while using computers. To succeed, the teachers' plan must reduce the time students spend with poor posture while using computers and reduce it enough to greatly reduce the number of injuries. To know how likely this is, it would help to know how effectively the teachers will be able to monitor and improve their students' posture inside the classroom. But how many of the students use computers *outside of school* while maintaining poor posture and how often do they do so? If many students do so quite often, they may develop hand and wrist injuries regardless of what happens in school.

A The teachers do not plan to reduce any injuries other than hand and wrist injuries, so whether computer use with poor posture causes any such other injuries is irrelevant to the likelihood that their plan will produce its intended effect.

B The plan being discussed concerns only the reduction of hand and wrist injuries caused specifically by computer use with poor posture, so the frequency of hand and wrist injuries from other causes is irrelevant to the likelihood that the plan will produce its intended effect.

C **Correct.** If the students' school use of computers is a large part of their overall computer use, any retraining that accompanies the monitoring might have some effect on their posture and related injury rates overall. However, the greater the proportion of children with hand and wrist injuries who use computers extensively outside the classroom, the more children are likely to keep developing the injuries regardless of any monitoring at school, so the less effective the teachers' plan involving only computer use at school is likely to be.

D Knowing whether this is the case might help in developing a potential alternative to the teachers' plan, but if it did, this would not help significantly toward assessing the likelihood that the actual plan will succeed. The teachers' actual plan involves monitoring computer use in school without reducing such use. Other possible means of achieving the plan's goal are not part of the plan and are therefore irrelevant to the likelihood that the teachers' actual plan will succeed.

E The passage indicates that the proportion of the schoolchildren maintaining poor posture while using computers is high enough for many to develop hand and wrist injuries as a result. Whatever the exact proportion is, the teachers' plan may or may not succeed in reducing it.

The correct answer is C.

644. A certain cultivated herb is one of a group of closely related plants that thrive in soil with high concentrations of metals that are toxic to most other plants. Agronomists studying the growth of this herb have discovered that it produces large amounts of histidine, an amino acid that, in test-tube solutions, renders these metals chemically inert. Hence, the herb's high histidine production must be the key feature that allows it to grow in metal-rich soils.

In evaluating the argument, it would be most important to determine which of the following?

(A) Whether the herb can thrive in soil that does not have high concentrations of the toxic metals

(B) Whether others of the closely related group of plants also produce histidine in large quantities

(C) Whether the herb's high level of histidine production is associated with an unusually low level of production of some other amino acid

(D) Whether growing the herb in soil with high concentrations of the metals will, over time, reduce their concentrations in the soil

(E) Whether the concentration of histidine in the growing herb declines as the plant approaches maturity

Argument Evaluation

Situation A certain herb and closely related species thrive in soil full of metals toxic to most plants. The herb produces much histidine, which makes those metals chemically inert. Histidine production, therefore, is largely what accounts for the herb's thriving in metal-rich soils.

Reasoning *What evidence would help determine whether the herb's histidine production is what enables it to thrive in metal-rich soils?* The argument is that since the herb's histidine chemically neutralizes the metals that are toxic to most plants, it must explain why the herb can thrive in metal-rich soils. To evaluate this argument, it would be helpful to know about the relationship between other closely related plant species' histidine production and the ability to thrive in metal-rich soils. It would also be helpful to know about any other factors that might plausibly explain why the herb can thrive in those soils.

A Whether or not the herb thrives in metal-free soils, histidine production could enable it to thrive in soils that contain toxic metals.

B **Correct.** If the closely related plants do not produce much histidine, whatever other factor allows them to thrive in metal-rich soils would likely account for why the herb thrives in those soils as well.

C The given information suggests no particular reason to suppose that a low level of some unspecified amino acid would enable a plant to thrive in metal-rich soils.

D The herb might absorb metals from any metal-rich soil it grows in, regardless of why it thrives in that soil.

E Whether or not histidine concentrations in the herb decline as it approaches maturity, there could still be enough histidine in the growing herb to neutralize the metals and explain why it can grow in metal-rich soil.

The correct answer is B.

645. Many people suffer an allergic reaction to certain sulfites, including those that are commonly added to wine as preservatives. However, since there are several winemakers who add sulfites to none of the wines they produce, people who would like to drink wine but are allergic to sulfites can drink wines produced by these winemakers without risking an allergic reaction to sulfites.

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

(A) These winemakers have been able to duplicate the preservative effect produced by adding sulfites by means that do not involve adding any potentially allergenic substances to their wine.

(B) Not all forms of sulfite are equally likely to produce the allergic reaction.

(C) Wine is the only beverage to which sulfites are commonly added.

(D) Apart from sulfites, there are no substances commonly present in wine that give rise to an allergic reaction.

(E) Sulfites are not naturally present in the wines produced by these winemakers in amounts large enough to produce an allergic reaction in someone who drinks these wines.

Argument Construction

Situation People who are allergic to certain sulfites can avoid risking an allergic reaction by drinking wine from one of the several producers that does not add sulfites.

Reasoning *On what assumption does the argument depend?* Drinking wine to which no sulfites have been *added* will not prevent exposure to sulfites if, for instance, sulfites occur naturally in wines. In particular, if the wines that do not have sulfites added have sulfites present naturally in quantities sufficient to produce an allergic reaction, drinking these wines will not prevent an allergic reaction. The argument therefore depends on assuming that this is not the case.

A The argument does not require this because the conclusion does not address allergic reactions to substances other than sulfites.

B The argument specifically refers to "certain sulfites" producing allergic reactions. It is entirely compatible with certain other forms of sulfites not producing allergic reactions in anyone.

C This is irrelevant. The argument does not claim that one can avoid having an allergic reaction to sulfites *from any source* just by restricting one's wine consumption to those varieties to which no sulfites have been added.

D Once again, the argument's conclusion does not address allergic reactions to substances other than sulfites in wine.

E **Correct.** The argument relies on this assumption.

The correct answer is E.

646. A new law gives ownership of patents—documents providing exclusive right to make and sell an invention—to universities, not the government, when those patents result from government-sponsored university research. Administrators at Logos University plan to sell any patents they acquire to corporations in order to fund programs to improve undergraduate teaching.

Which of the following, if true, would cast the most doubt on the viability of the college administrators' plan described above?

(A) Profit-making corporations interested in developing products based on patents held by universities are likely to try to serve as exclusive sponsors of ongoing university research projects.

(B) Corporate sponsors of research in university facilities are entitled to tax credits under new federal tax-code guidelines.

(C) Research scientists at Logos University have few or no teaching responsibilities and participate little if at all in the undergraduate programs in their field.

(D) Government-sponsored research conducted at Logos University for the most part duplicates research already completed by several profit-making corporations.

(E) Logos University is unlikely to attract corporate sponsorship of its scientific research.

Evaluation of a Plan

Situation Universities own the patents resulting from government-sponsored research at their institutions. One university plans to sell its patents to corporations to fund a program to improve teaching.

Reasoning *Which point casts doubt on the university's plan?* The university's plan assumes there will be a market for its patents, and that the corporations will want to buy them. What might make this untrue? If some of the corporations have already done the same or similar research, they will not be prospective buyers of the university's patents.

A This point is irrelevant to the plan to sell patents in order to fund a program.

B The university plans to sell the patents to the corporations, not to invite the corporations to sponsor research.

C This point is irrelevant to the university's plan to sell off patents since the plan does not specify that the research scientists will be involved in the programs to improve undergraduate teaching.

D **Correct**. This statement properly identifies a factor that casts doubt on the university's plan to sell its patents to corporations.

E The plan concerns selling patents resulting from government-sponsored research, not attracting corporate sponsorship for research.

The correct answer is D.

647. Since it has become known that **several of a bank's top executives have been buying shares in their own bank**, the bank's depositors, who had been worried by rumors that the bank faced impending financial collapse, have been greatly relieved. They reason that, since top executives evidently have faith in the bank's financial soundness, those worrisome rumors must be false. Such reasoning might well be overoptimistic, however, since **corporate executives have been known to buy shares in their own company in a calculated attempt to dispel negative rumors about the company's health.**

In the argument given, the two boldfaced portions play which of the following roles?

(A) The first describes evidence that has been taken as supporting a conclusion; the second gives a reason for questioning that support.

(B) The first describes evidence that has been taken as supporting a conclusion; the second states a contrary conclusion that is the main conclusion of the argument.

(C) The first provides evidence in support of the main conclusion of the argument; the second states that conclusion.

(D) The first describes the circumstance that the argument as a whole seeks to explain; the second gives the explanation that the argument seeks to establish.

(E) The first describes the circumstance that the argument as a whole seeks to explain; the second provides evidence in support of the explanation that the argument seeks to establish.

Argument Evaluation

Situation Top executives at a bank that has been rumored to be in financial trouble have been buying shares in the bank. Bank depositors see this as a good sign, because they believe that it indicates that the executives have faith in the bank. However, corporate executives sometimes do this just to dispel rumors about a company's health.

Reasoning *What is the role that the two boldfaced portions play in the argument?* The first boldfaced portion states that bank executives are buying bank shares, which the passage indicates is taken by bank depositors to be evidence of the executives' faith in the bank. The passage then tells us what some have inferred from this, and finally offers in the second boldfaced statement evidence that undermines this inference.

A **Correct.** This option correctly identifies the roles played by the boldfaced portions.

B This correctly describes the first statement's role, but the second statement is not offered as a conclusion—no evidence is given for it; rather it is evidence for something else.

C The second statement is not offered as a conclusion; no evidence is given for it.

D The second statement is not itself offered as an explanation of why these bank executives are investing in the bank; if it were, that would mean that the bank executives are doing so *because* corporate executives are known to do such things in a calculated effort to dispel worries. Furthermore the argument does not conclude that this other explanation (which the boldfaced portion points to) is correct, only that the one inferred by depositors may not be.

E The argument is not so much seeking to establish an explanation of its own as it is trying to undermine that inferred by the depositors.

The correct answer is A.

648. Between 1980 and 2000 the sea otter population of the Aleutian Islands declined precipitously. There were no signs of disease or malnutrition, so there was probably an increase in the number of otters being eaten by predators. Orcas will eat otters when seals, their normal prey, are unavailable, and the Aleutian Islands seal population declined dramatically in the 1980s. Therefore, orcas were most likely the immediate cause of the otter population decline.

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

(A) The population of sea urchins, the main food of sea otters, has increased since the sea otter population declined.
(B) Seals do not eat sea otters, nor do they compete with sea otters for food.
(C) Most of the surviving sea otters live in a bay that is inaccessible to orcas.
(D) The population of orcas in the Aleutian Islands has declined since the 1980s.
(E) An increase in commercial fishing near the Aleutian Islands in the 1980s caused a slight decline in the population of the fish that seals use for food.

Argument Evaluation

Situation A sea otter population declined even though there were no signs of disease or malnutrition. The local seal population also declined. Orcas eat otters when seals are unavailable, and thus are probably the cause of the decline in the otter population.

Reasoning *What would be evidence that predation by orcas reduced the sea otter population?* Disease and malnutrition are ruled out as alternative explanations of the decline in the sea otter population. The argument could be further strengthened by casting doubt on other possible explanations, such as predation by other animals, or by presenting observations that predation of otters by orcas would help to explain.

A Regardless of whether or not orcas ate the sea otters, the sea urchin population would most likely have increased when the population of sea otters preying on them decreased.
B Because the seal population declined during the initial years of the otter population decline, predation by and competition with seals were already implausible explanations of the otter population decline.
C **Correct.** Orcas eating most of the accessible otters could plausibly explain this observation, which therefore provides additional evidence that orca predation reduced the sea otter population.
D If the orca population declined at the same time as the sea otter population, it would be less likely that increasing predation by orcas reduced the otter population.
E Since the sea otters showed no signs of malnutrition, they were probably getting enough fish. But if they were not, commercial fishing rather than orcas might have caused the otter population decline.

The correct answer is C.

649. Studies in restaurants show that the tips left by customers who pay their bill in cash tend to be larger when the bill is presented on a tray that bears a credit-card logo. Consumer psychologists hypothesize that simply seeing a credit-card logo makes many credit-card holders willing to spend more because it reminds them that their spending power exceeds the cash they have immediately available.

Which of the following, if true, most strongly supports the psychologists' interpretation of the studies?

(A) The effect noted in the studies is not limited to patrons who have credit cards.

(B) Patrons who are under financial pressure from their credit-card obligations tend to tip less when presented with a restaurant bill on a tray with a credit-card logo than when the tray has no logo.

(C) In virtually all of the cases in the studies, the patrons who paid bills in cash did not possess credit cards.

(D) In general, restaurant patrons who pay their bills in cash leave larger tips than do those who pay by credit card.

(E) The percentage of restaurant bills paid with a given brand of credit card increases when that credit card's logo is displayed on the tray with which the bill is presented.

Argument Evaluation

Situation Studies have found that restaurant customers give more generous tips when their bills are brought on trays bearing a credit-card logo. Psychologists speculate that this is because the logo reminds customers of their ability to spend more money than they have.

Reasoning *Which of the options most helps to support the psychologists' explanation of the studies?* The psychologists' hypothesis is that the credit-card logos on the trays bring to the minds of those who tip more the fact that they have more purchasing power than merely the cash that they have at hand. This explanation would not be valid even if those people who are *not* reminded of their own excess purchasing power—if in fact they have any such power—when they see such a logo nonetheless tip more in such trays. Thus, if restaurant patrons who are under financial pressure from their credit-card obligations do not tip more when their bills are presented on trays bearing credit-card logos, then the psychologists' interpretation of the studies is supported.

A This undermines the psychologists' interpretation, for it shows that the same phenomenon occurs even when the alleged cause has been removed.

B **Correct.** This option identifies the result that would most strengthen the psychologists' interpretation.

C This undermines the psychologists' interpretation by showing that the same phenomenon occurs even when the alleged cause has been removed; patrons cannot be reminded of something that is not there.

D To the extent that this bears on the interpretation of the study, it weakens it. Patrons *using* credit cards are surely aware that they have credit, and yet they spend *less* generously.

E This does not support the idea that being reminded that one has a credit card induces one to be *more generous*, only that it induces one to *use* that credit card.

The correct answer is B.

650. In an experiment, each volunteer was allowed to choose between an easy task and a hard task and was told that another volunteer would do the other task. Each volunteer could also choose to have a computer assign the two tasks randomly. Most volunteers chose the easy task for themselves and under questioning later said they had acted fairly. But when the scenario was described to another group of volunteers, almost all said choosing the easy task would be unfair. This shows that most people apply weaker moral standards to themselves than to others.

Which of the following is an assumption required by this argument?

(A) At least some volunteers who said they had acted fairly in choosing the easy task would have said that it was unfair for someone else to do so.

(B) The most moral choice for the volunteers would have been to have the computer assign the two tasks randomly.

(C) There were at least some volunteers who were assigned to do the hard task and felt that the assignment was unfair.

(D) On average, the volunteers to whom the scenario was described were more accurate in their moral judgments than the other volunteers were.

(E) At least some volunteers given the choice between assigning the tasks themselves and having the computer assign them felt that they had made the only fair choice available to them.

Argument Construction

Situation In an experiment, most volunteers chose to do an easy task themselves and leave a hard task for someone else. They later said they had acted fairly, but almost all volunteers in another group to which the scenario was described said choosing the easy task would be unfair, indicating that most people apply weaker moral standards to themselves.

Reasoning *What must be true in order for the facts presented to support the conclusion that most people apply weaker moral standards to themselves than to others?* One set of volunteers said they had acted fairly in taking the easy task, whereas different volunteers said that doing so would be unfair. In neither case did any of the volunteers actually judge their own behavior differently from how they judged anyone else's. So the argument implicitly infers from the experimental results that most of the volunteers would judge their own behavior differently from someone else's if given the chance. This inference assumes that the volunteers in the second group would have applied the same moral standards that those in the first group did if they had been in the first group's position, and vice versa.

A **Correct.** If none of the volunteers who said their own behavior was fair would have judged someone else's similar behavior as unfair, then their relaxed moral judgment of themselves would not suggest that they applied weaker moral standards to themselves than to others.

B Even if this is so, the experimental results could still suggest that the volunteers would apply weaker moral standards to themselves than to others.

C The argument would be equally strong even if volunteers who were assigned the hard task did not know that someone else had gotten an easier task—or even if no volunteers were actually assigned the hard task at all.

D Even if the moral standards applied by the volunteers who judged themselves were as accurate as those applied by the volunteers to whom the scenario was described, the former standards were still weaker.

E Even if all the volunteers in the first group had felt that all the choices available to them would have been fair for them to make personally, they might have applied stricter moral standards to someone else in the same position.

The correct answer is A.

651. Country X's recent stock-trading scandal should not diminish investors' confidence in the country's stock market. For one thing, **the discovery of the scandal confirms that Country X has a strong regulatory system**, as the following considerations show. In any stock market, some fraudulent activity is inevitable. If a stock market is well regulated, any significant stock-trading fraud in it will very likely be discovered. This deters potential perpetrators and facilitates improvement in regulatory processes.

In the argument, the portion in boldface plays which of the following roles?

(A) It is the argument's only conclusion.

(B) It is a conclusion for which the argument provides support and which itself is used to support the argument's main conclusion.

(C) It is the argument's main conclusion and is supported by another explicitly stated conclusion for which further support is provided.

(D) It is an assumption for which no explicit support is provided and is used to support the argument's only conclusion.

(E) It is a compound statement containing both the argument's main conclusion and an assumption used to support that conclusion.

Argument Construction

Situation Country X recently had a stock-trading scandal.

Reasoning *What role does the statement that the scandal's discovery confirms that Country X has a strong regulatory system play in the argument?* In the sentence containing the boldface statement, the phrase *For one thing* indicates that the statement is being used to justify the claim in the preceding sentence. Thus, the boldface statement must support that preceding sentence as a conclusion. Directly after the boldface statement, the phrase as *the following considerations show* indicates that the subsequent sentences are being used to support the boldface statement. Thus, the boldface statement is a conclusion supported by the sentences following it, and this statement itself supports the sentence preceding it, which must be the argument's main conclusion.

A As explained above, the boldface statement supports the claim in the preceding sentence, so it cannot be the argument's only conclusion.

B **Correct.** As explained above, the boldface statement is supported by the statements following it and in turn is used to support the argument's main conclusion in the statement preceding it.

C As explained above, the boldface statement cannot be the argument's main conclusion, because it supports a further conclusion presented in the sentence preceding it.

D As explained above, the sentences following the boldface statement are the explicit support provided for it.

E As explained above, the argument's main conclusion is stated only in the first sentence, which precedes the boldface statement. It is not repeated anywhere in the boldface statement.

The correct answer is B.

652. **Delta Products Inc. has recently switched at least partly from older technologies using fossil fuels to new technologies powered by electricity.** The question has been raised whether it can be concluded that **for a given level of output Delta's operation now causes less fossil fuel to be consumed than it did formerly.** The answer, clearly, is yes, since the amount of fossil fuel used to generate the electricity needed to power the new technologies is less than the amount needed to power the older technologies, provided level of output is held constant.

In the argument given, the two boldfaced portions play which of the following roles?

(A) The first identifies the content of the conclusion of the argument; the second provides support for that conclusion.
(B) The first provides support for the conclusion of the argument; the second identifies the content of that conclusion.
(C) The first states the conclusion of the argument; the second calls that conclusion into question.
(D) The first provides support for the conclusion of the argument; the second calls that conclusion into question.
(E) Each provides support for the conclusion of the argument.

Argument Evaluation

Situation Delta switched from technologies using fossil fuels to ones using electricity. It has been asked whether this results in less fossil fuel used per level of output. The answer is that it does.

Reasoning *What roles do the two boldfaced portions play in the argument?* The first boldfaced statement is simply asserted by the passage. But the second boldfaced statement, when it is first introduced, is not asserted to be true, but rather is identified as something that might be inferred from the first statement. By the end of the passage the argument concludes that the second statement is true.

A This option simply reverses the roles that the statements play in the argument.
B **Correct.** This option identifies the roles the boldfaced portions play.
C Nothing in the passage is intended to support the first statement; and the second statement is not supposed to call the first into question.
D This correctly identifies the role of the first statement, but the second boldfaced portion does not call the argument's conclusion into question—it is part of a sentence that refers to the question whether that conclusion can be drawn from the first statement.
E Again, this is only half right. The second boldfaced portion is not offered as support for the conclusion; if it were offered as such support, the argument would be guilty of circular reasoning, since the second boldfaced portion states exactly what the argument concludes.

The correct answer is B.

653. Theater Critic: The play *La Finestrina*, now at Central Theater, was written in Italy in the eighteenth century. The director claims that this production is as similar to the original production as is possible in a modern theater. Although the actor who plays Harlequin the clown gives a performance very reminiscent of the twentieth-century American comedian Groucho Marx, Marx's comic style was very much within the comic acting tradition that had begun in sixteenth-century Italy.

The considerations given best serve as part of an argument that

(A) modern audiences would find it hard to tolerate certain characteristics of a historically accurate performance of an eighteenth-century play

(B) Groucho Marx once performed the part of the character Harlequin in *La Finestrina*

(C) in the United States the training of actors in the twentieth century is based on principles that do not differ radically from those that underlay the training of actors in eighteenth-century Italy

(D) the performance of the actor who plays Harlequin in *La Finestrina* does not serve as evidence against the director's claim

(E) the director of *La Finestrina* must have advised the actor who plays Harlequin to model his performance on comic performances of Groucho Marx

Argument Construction

Situation The director of the local production of *La Finestrina* says it is as similar to the original production as is possible in a modern theater. The actor playing Harlequin gives a performance reminiscent of Groucho Marx, whose comic style falls within an acting tradition which began in sixteenth-century Italy.

Reasoning *For which of the options would the consideration given best serve as an argument?* The actor's performance was reminiscent of someone who fell within a tradition going back to sixteenth-century Italy. The play was written, and therefore was likely first performed, in eighteenth-century Italy. All of this suggests that there could be a similarity between the performances of Harlequin in the local production and in the original production. While the two performances *might* have been quite dissimilar, there is nothing *here* that supports that.

A Regardless of how plausible this option might be on its own merits, the passage provides no support for it because the passage provides no information about the characteristics of a historically accurate performance of an eighteenth-century play.

B The passage neither says this nor implies it.

C The passage says nothing about the training of actors, so this option would be supported by the passage only in a very roundabout, indirect way.

D **Correct.** This is the option that the considerations most support.

E That the performance reminded the theater critic of Groucho Marx hardly shows that the similarity was intentional, let alone that it was at the director's instruction.

The correct answer is D.

654. Although the discount stores in Goreville's central shopping district are expected to close within five years as a result of competition from a SpendLess discount department store that just opened, those locations will not stay vacant for long. In the five years since the opening of Colson's, a nondiscount department store, a new store has opened at the location of every store in the shopping district that closed because it could not compete with Colson's.

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

(A) Many customers of Colson's are expected to do less shopping there than they did before the SpendLess store opened.

(B) Increasingly, the stores that have opened in the central shopping district since Colson's opened have been discount stores.

(C) At present, the central shopping district has as many stores operating in it as it ever had.

(D) Over the course of the next five years, it is expected that Goreville's population will grow at a faster rate than it has for the past several decades.

(E) Many stores in the central shopping district sell types of merchandise that are not available at either SpendLess or Colson's.

Argument Evaluation

Situation Due to competition from a recently opened SpendLess discount department store, discount stores in Goreville's central shopping district are expected to close within five years. But those locations will not be vacant long, for new stores have replaced all those that closed because of the opening five years ago of a Colson's nondiscount department store.

Reasoning *The question is which option would most weaken the argument?* The arguer infers that stores that leave because of the SpendLess will be replaced in their locations by other stores because that is what happened after the Colson's department store came in. Since the reasoning relies on a presumed similarity between the two cases, any information that brings to light a relevant dissimilarity would weaken the argument. If the stores that were driven out by Colson's were replaced mostly by discount stores, that suggests that the stores were replaced because of a need that no longer exists after the opening of SpendLess.

A The fact that Colson's may be seeing fewer customers does not mean that the discount stores that close will not be replaced; they might be replaced by stores that in no way compete with Colson's or SpendLess.

B Correct. This option most seriously weakens the argument.

C If anything, this strengthens the argument by indicating that Goreville's central shopping district is thriving.

D This, too, strengthens the argument because one is more likely to open a new store in an area with a growing population.

E Because this statement does not indicate whether any of these stores that offer goods not sold at SpendLess or Colson's will be among those that are closing, it is not possible to determine what effect it has on the strength of the argument.

The correct answer is B.

655. Last year all refuse collected by Shelbyville city services was incinerated. This incineration generated a large quantity of residual ash. In order to reduce the amount of residual ash Shelbyville generates this year to half of last year's total, the city has revamped its collection program. This year city services will separate for recycling enough refuse to reduce the number of truckloads of refuse to be incinerated to half of last year's number.

Which of the following is required for the revamped collection program to achieve its aim?

(A) This year, no materials that city services could separate for recycling will be incinerated.

(B) Separating recyclable materials from materials to be incinerated will cost Shelbyville less than half what it cost last year to dispose of the residual ash.

(C) Refuse collected by city services will contain a larger proportion of recyclable materials this year than it did last year.

(D) The refuse incinerated this year will generate no more residual ash per truckload incinerated than did the refuse incinerated last year.

(E) The total quantity of refuse collected by Shelbyville city services this year will be no greater than that collected last year.

Argument Construction

Situation To cut in half the residual ash produced at its incinerator, the city will separate for recycling enough refuse to cut in half the number of truckloads of refuse going to the incinerator.

Reasoning *Which option is required if the city's revamped collection program is to achieve its aim?* Cutting the number of truckloads of refuse in half must reduce the amount of residual ash to half last year's level. But if removal of the recycled refuse does not proportionately reduce the amount of ash, this will not happen. So if the amount of residual ash produced per truckload increases after recycling, then the amount of ash produced will not be cut in half by cutting in half the number of truckloads.

A This merely indicates that no further reduction of ash through recycling could be achieved this year; it indicates nothing about how much the ash will be reduced.

B This suggests a further benefit from recycling, but does not bear on the amount of ash that will be produced.

C Since no information is provided about how much, if any, recyclable materials were removed from the refuse last year, this does not affect the reasoning.

D **Correct.** This states a requirement for the collection program to achieve its aim.

E This is not a requirement because even if the city collects more refuse this year, it could still cut in half the amount of residual ash by cutting in half the number of truckloads going to the incinerator.

The correct answer is D.

656. Veterinarians generally derive some of their income from selling several manufacturers' lines of pet-care products. Knowing that pet owners rarely throw away mail from their pet's veterinarian unread, one manufacturer of pet-care products offered free promotional materials on its products to veterinarians for mailing to their clients. Very few veterinarians accepted the offer, however, even though the manufacturer's products are of high quality.

Which of the following, if true, most helps to explain the veterinarians' reaction to the manufacturer's promotional scheme?

(A) Most of the veterinarians to whom the free promotional materials were offered were already selling the manufacturer's pet-care products to their clients.

(B) The special promotional materials were intended as a supplement to the manufacturer's usual promotional activities rather than as a replacement for them.

(C) The manufacturer's products, unlike most equally good competing products sold by veterinarians, are also available in pet stores and in supermarkets.

(D) Many pet owners have begun demanding quality in products they buy for their pets that is as high as that in products they buy for themselves.

(E) Veterinarians sometimes recommend that pet owners use products formulated for people when no suitable product specially formulated for animals is available.

Evaluation of a Plan

Situation Veterinarians generally derive some income from selling various manufacturers' pet-care products, but very few veterinarians accepted free promotional materials from one such manufacturer to mail to their clients.

Reasoning *What would most help explain why so few veterinarians accepted the free promotional materials to mail to their clients?* The passage says that veterinarians generally derive income from selling pet-care products, which suggests that it should have been in many veterinarians' financial interest to accept and mail out the free promotional materials to increase sales. Any evidence that mailing out these specific promotional materials from this manufacturer would not actually have been in many veterinarians' financial interest could help explain why so few veterinarians accepted the materials.

A This suggests that most of the veterinarians should have had a financial interest in accepting and mailing out the promotional materials in order to increase their sales of the manufacturer's products.

B Even if the promotional materials supplemented the manufacturer's usual promotional activities, they could still have increased the veterinarians' sales of the manufacturer's products and thus generated more income for the veterinarians.

C **Correct.** If this manufacturer's products are available in pet stores and supermarkets but most other products sold by veterinarians are not, then distributing the manufacturer's promotional materials could have encouraged customers to buy this manufacturer's products from pet stores and supermarkets rather than to buy competing products from the veterinarians. Thus, the veterinarians may have been concerned that the promotions would reduce their profits.

D The passage says the manufacturer's products are of high quality, so we have no reason to suppose that clients' demand for quality products would discourage veterinarians from accepting the manufacturer's promotional materials.

E Presumably the manufacturer's products are specially formulated for pets, so any products veterinarians recommend only when no specially formulated pet-care products are available would not reduce the veterinarians' interest in promoting the manufacturer's products.

The correct answer is C.

657. The average hourly wage of television assemblers in Vernland has long been significantly lower than that in neighboring Borodia. Since Borodia dropped all tariffs on Vernlandian televisions three years ago, the number of televisions sold annually in Borodia has not changed. However, recent statistics show a drop in the number of television assemblers in Borodia. Therefore, updated trade statistics will probably indicate that the number of televisions Borodia imports annually from Vernland has increased.

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

(A) The number of television assemblers in Vernland has increased by at least as much as the number of television assemblers in Borodia has decreased.

(B) Televisions assembled in Vernland have features that televisions assembled in Borodia do not have.

(C) The average number of hours it takes a Borodian television assembler to assemble a television has not decreased significantly during the past three years.

(D) The number of televisions assembled annually in Vernland has increased significantly during the past three years.

(E) The difference between the hourly wage of television assemblers in Vernland and the hourly wage of television assemblers in Borodia is likely to decrease in the next few years.

Argument Construction

Situation Television assemblers in Vernland are paid less than those in neighboring Borodia. The number of televisions sold in Borodia has not dropped since its tariffs on Vernlandian TVs were lowered three years ago, but the number of TV assemblers in Borodia has. So TV imports from Vernland have likely increased.

Reasoning *What assumption does the argument depend on?* The fact that fewer individuals in Borodia are working as TV assemblers is offered as evidence that TV imports from Vernland into Borodia have likely increased. That piece of evidence is relevant *only* as an indication that the number of TVs being produced within Borodia has decreased. But a drop in the number of TV assemblers does not indicate a drop in the number of TVs being assembled *if* the number of TVs an average assembler puts together has increased. Thus, the argument must be assuming that the average time it takes an assembler to put together a TV has not significantly decreased.

A The argument does not rely on any information about the number of television assemblers in Vernland nor for that matter on the number of TVs assembled in Vernland.

B The argument need not assume there is any difference in the features of the TVs produced in the two countries. Increased sales of Vernlandian TVs in Borodia could be due to any number of other reasons, such as price or quality.

C **Correct.** This option states an assumption on which the argument depends.

D The argument does not depend upon this being so: Vernland's domestic TV sales (or perhaps its exports to countries other than Borodia) may have decreased by more than its imports into Borodia have increased.

E The argument's conclusion addresses what *has* happened; the argument in no way relies on any assumptions about what may or may not happen in the coming years.

The correct answer is C.

658. Guidebook writer: I have visited hotels throughout the country and have noticed that in those built before 1930 the quality of the original carpentry work is generally superior to that in hotels built afterward. Clearly carpenters working on hotels before 1930 typically worked with more skill, care, and effort than carpenters who have worked on hotels built subsequently.

Which of the following, if true, most seriously weakens the guidebook writer's argument?

(A) The quality of original carpentry in hotels is generally far superior to the quality of original carpentry in other structures, such as houses and stores.
(B) Hotels built since 1930 can generally accommodate more guests than those built before 1930.
(C) The materials available to carpenters working before 1930 were not significantly different in quality from the materials available to carpenters working after 1930.
(D) The better the quality of original carpentry in a building, the less likely that building is to fall into disuse and be demolished.
(E) The average length of apprenticeship for carpenters has declined significantly since 1930.

Argument Evaluation

Situation The original carpentry in hotels built before 1930 shows superior care, skill, and effort to that in hotels built after 1930. This leads to the conclusion that carpenters working on hotels before 1930 were superior in skill, care, and effort to those that came after.

Reasoning *Which option most seriously weakens the argument?* The argument draws an inference from a comparison between carpentry in hotels of different eras to a judgment about the carpenters working on hotels in those eras. One way to weaken this inference is by finding some way in which the carpentry in the hotels may be unrepresentative of the skill, care, and effort of the carpenters working in the eras. The comparison is between the carpentry evident in hotels of the two eras *that still exist*. Thus, if there is some reason to think that hotels with good carpentry survive longer than those with bad carpentry, then still-existing hotels from the older era will have disproportionately more good carpentry, even assuming no difference between the skill, care, and effort of the carpenters from the two eras.

A This option applies equally to both eras, so it has no bearing on the argument.

B It is not clear whether carpenters working on larger hotels would exercise more, less, or the same skill and care as those working on smaller hotels; thus this option does not weaken the argument.

C The argument does not rely, even implicitly, on there being any difference in the quality of materials used in the two eras, so it does not weaken the argument to point out that no such difference exists.

D **Correct.** This weakens the reasoning in the argument by showing a respect in which the comparison between *existing* hotels is unrepresentative.

E The longer a carpenter works as an apprentice, the more skill he or she is apt to have upon becoming a full-fledged carpenter. So this option would tend to slightly strengthen rather than weaken the argument.

The correct answer is D.

659. Scientists typically do their most creative work before the age of forty. It is commonly thought that this happens because aging by itself brings about a loss of creative capacity. However, studies show that **of scientists who produce highly creative work beyond the age of forty, a disproportionately large number entered their field at an older age than is usual.** Since by the age of forty the large majority of scientists have been working in their field for at least fifteen years, the studies' finding strongly suggests that the real reason why scientists over forty rarely produce highly creative work is not that they have aged but rather that **scientists over forty have generally spent too long in their field.**

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

(A) The first is a claim, the accuracy of which is at issue in the argument; the second is a conclusion drawn on the basis of that claim.

(B) The first is an objection that has been raised against a position defended in the argument; the second is that position.

(C) The first is evidence that has been used to support an explanation that the argument challenges; the second is that explanation.

(D) The first is evidence that has been used to support an explanation that the argument challenges; the second is a competing explanation that the argument favors.

(E) The first provides evidence to support an explanation that the argument favors; the second is that explanation.

Argument Evaluation

Situation It is generally thought that the reason scientists tend to do their most creative work before age forty is that creative capacity declines with age. Yet those scientists who do creative work after forty tend, disproportionately, to have started their careers in science later in life. So a better explanation is that many scientists over forty have just been at it too long.

Reasoning *What roles do the two portions of the argument that are in boldface play?* The argument describes a phenomenon and what is commonly thought to explain it. Then, the first boldfaced statement introduces evidence that suggests that there may be another explanation. After this evidence is further developed, the argument then concludes that there is indeed a better explanation for the phenomenon; that explanation is stated in the second boldfaced portion.

A The accuracy of the first statement is never called into question by the argument; rather, it is relied upon as the basis for the argument's conclusion.

B The first statement is not an objection against the position the argument defends; instead, it is a basis for that position.

C The first statement is not used to support a position the argument challenges, and the second statement is the explanation the argument supports, not the one it challenges.

D The second statement is indeed an explanation that the argument favors; but the first statement is not used to support a competing explanation that the argument challenges.

E **Correct.** This option correctly identifies the roles played by the boldfaced portions of the argument.

The correct answer is E.

660. NorthAir charges low fares for its economy-class seats, but it provides very cramped seating and few amenities. Market research shows that economy passengers would willingly pay more for wider seating and better service, and additional revenue provided by these higher ticket prices would more than cover the additional cost of providing these amenities. Even though NorthAir is searching for ways to improve its profitability, it has decided not to make these improvements.

Which of the following, if true, would most help to explain NorthAir's decision in light of its objectives?

(A) None of NorthAir's competitors offers significantly better seating and service to economy-class passengers than NorthAir does.

(B) On many of the routes that NorthAir flies, it is the only airline to offer direct flights.

(C) A few of NorthAir's economy-class passengers are satisfied with the service they receive, given the low price they pay.

(D) Very few people avoid flying on NorthAir because of the cramped seating and poor service offered in economy class.

(E) The number of people who would be willing to pay the high fares NorthAir charges for its business-class seats would decrease if its economy-class seating were more acceptable.

Evaluation of a Plan

Situation Market research shows that improving some amenities for economy-class passengers would allow NorthAir to raise its economy ticket prices more than enough to cover the additional cost of providing those amenities. But NorthAir has decided not to improve those amenities, even though it is looking for ways to improve its profitability.

Reasoning *What would most help explain why NorthAir decided not to improve the seating and other amenities, even though the resulting increase in economy-class ticket prices would more than cover the expense?* NorthAir is looking for ways to improve its profitability. Making improvements that would increase ticket prices enough to generate more revenue than they cost should improve profitability, other things being equal. But if improving the amenities would generate side effects that reduced profitability, those side effects would provide a good reason for NorthAir's decision not to improve the amenities and hence would help explain why NorthAir made that decision.

A The passage says that for NorthAir, the cost of providing better economy seating and other amenities would be more than met by the increased revenue from the higher ticket prices that passengers would be willing to pay. This could give NorthAir a competitive edge, with improved profitability.

B Even if NorthAir faces little or no competition on certain routes, offering extra amenities might increase passengers' interest in flying those routes. It might also lead passengers to choose NorthAir on other routes that competing airlines also serve. Both of these effects could improve NorthAir's profitability.

C Even if a few NorthAir economy passengers would not pay more for extra amenities, the market research indicates that most of them would, so offering the amenities could still improve NorthAir's profits attributable to economy-class seating.

D This suggests that improving the amenities would not increase the total number of NorthAir passengers. But improving the amenities might still enable the airline to increase its ticket prices per passenger enough to improve its profitability.

E **Correc**t. This suggests that improving the economy-class amenities would reduce NorthAir's revenue from sales of business-class tickets, which are likely much more expensive than economy-class tickets. This reduction in revenue could be enough to reduce NorthAir's total profitability despite the increased revenue from economy-class ticket sales.

The correct answer is E.

661. Which of the following most logically completes the argument given?

Asthma, a chronic breathing disorder, is significantly more common today among adult competitive swimmers than it is among competitive athletes who specialize in other sports. Although chlorine is now known to be a lung irritant and swimming pool water is generally chlorinated, it would be rash to assume that frequent exposure to chlorine is the explanation of the high incidence of asthma among these swimmers, since __________.

(A) young people who have asthma are no more likely to become competitive athletes than are young people who do not have asthma

(B) competitive athletes who specialize in sports other than swimming are rarely exposed to chlorine

(C) competitive athletes as a group have a significantly lower incidence of asthma than do people who do not participate in competitive athletics

(D) until a few years ago, physicians routinely recommended competitive swimming to children with asthma, in the belief that this form of exercise could alleviate asthma symptoms

(E) many people have asthma without knowing they have it and thus are not diagnosed with the condition until they begin engaging in very strenuous activities, such as competitive athletics

Argument Construction

Situation Asthma is more common among competitive swimmers than among other competitive athletes. Chlorine is a lung irritant generally present in swimming pool water.

Reasoning *What would cast doubt on the hypothesis that exposure to chlorine in swimming pools accounts for the high incidence of asthma among adult competitive swimmers?* Evidence of any other factor that would provide an alternative explanation of why asthma is more common among adult competitive swimmers than among other competitive athletes would make it rash to assume that frequent exposure to chlorine explains the high incidence of asthma among these swimmers, so a statement providing such evidence would logically fill in the blank at the end of the passage to complete the argument.

A This might help explain why competitive athletes in general are not especially likely to have asthma, but it does not explain why adult competitive swimmers are more likely to have asthma than other competitive athletes are.

B This provides additional evidence that exposure to chlorine explains why adult competitive swimmers are more likely to have asthma than other competitive athletes are, so it does not cast doubt on that hypothesis.

C A lower incidence of asthma among competitive athletes than among nonathletes does not help explain the higher incidence of asthma among adult competitive swimmers than among other competitive athletes.

D **Correct.** Routinely encouraging children with asthma to take up competitive swimming would likely have made the proportion of adult competitive swimmers with asthma exceed the proportion of other competitive athletes with asthma, even if chlorine in swimming pool water never causes asthma in swimmers.

E This might help explain why people with asthma are just as likely as other people to become competitive athletes, but it does not help explain why adult competitive swimmers are more likely to have asthma than other competitive athletes are.

The correct answer is D.

662. In the country of Marut, the Foreign Trade Agency's records were reviewed in 1994 in light of information then newly available about neighboring Goro. The review revealed that in every year since 1963, the agency's projection of what Goro's gross national product (GNP) would be five years later was a serious underestimate. The review also revealed that in every year since 1963, the agency estimated Goro's GNP for the previous year—a Goro state secret—very accurately.

Of the following claims, which is most strongly supported by the statements given?

(A) Goro's GNP fluctuated greatly between 1963 and 1994.
(B) Prior to 1995, Goro had not released data intended to mislead the agency in making its five-year projections.
(C) The amount by which the agency underestimated the GNP it projected for Goro tended to increase over time.
(D) Even before the new information came to light, the agency had reason to think that at least some of the five-year projections it had made were inaccurate.
(E) The agency's five-year projections of Goro's GNP had no impact on economic planning in Marut.

Argument Construction

Situation A review in 1994 revealed that every year since 1963, Marut's Foreign Trade Agency had seriously underestimated what Goro's GNP would be five years later, but accurately estimated what Goro's GNP had been the previous year.

Reasoning *What conclusion do the stated facts most strongly support?* Goro's GNP in each year at least from 1969 through 1993 had been seriously underestimated by the agency five years in advance, yet was then accurately estimated by the agency one year after the fact. It follows that for each of these years, the agency's earlier projection of Goro's GNP must have been much lower than its later estimate.

A This is not supported by the information given. The fact that the agency consistently underestimated each year's GNP in its five-year projections and then correctly estimated it after the fact does not indicate that Goro's GNP fluctuated greatly.

B This is not supported by the information given. The reason the agency's five-year projections were inaccurate might well have been that Goro deliberately released data intended to mislead the agency in making those projections.

C This is not supported by the information given. The fact that the underestimates remained large throughout the years in question does not indicate that the underestimates increased over time.

D **Correct.** As explained above, for many years there were serious discrepancies between the agency's five-year projections of Goro's GNP and its retrospective estimates of each previous year's trade. In any year at least from 1970 through 1993, these discrepancies, if noticed, would have given the agency reason to doubt some of the five-year projections.

E This is not supported by the information given. Even though at least some of the five-year projections were eventually known to be serious underestimates, they could still have affected Marut's economic planning. The economic planners might have retained an unreasonable faith in the accuracy of the most recent projections.

The correct answer is D.

663. Vargonia has just introduced a legal requirement that student-teacher ratios in government-funded schools not exceed a certain limit. All Vargonian children are entitled to education, free of charge, in these schools. When a recession occurs and average incomes fall, the number of children enrolled in government-funded schools tends to increase. Therefore, though most employment opportunities contract in economic recessions, getting a teaching job in Vargonia's government-funded schools will not be made more difficult by a recession.

Which of the following would be most important to determine in order to evaluate the argument?

(A) Whether in Vargonia there are any schools not funded by the government that offer children an education free of charge

(B) Whether the number of qualified applicants for teaching positions in government-funded schools increases significantly during economic recessions

(C) What the current student-teacher ratio in Vargonia's government-funded schools is

(D) What proportion of Vargonia's workers currently hold jobs as teachers in government-funded schools

(E) Whether in the past a number of government-funded schools in Vargonia have had student-teacher ratios well in excess of the new limit

Argument Evaluation

Situation During a recession, the number of children in government-funded schools in Vargonia tends to increase. Vargonian children are entitled to a free education in these schools. A new law requires student-teacher ratios in these schools to remain below a certain limit.

Reasoning *Which of the five questions would provide us with the best information for evaluating the argument?* The argument's conclusion is that recessions do not make teaching jobs in Vargonia's government-funded schools harder to get. During recessions, the reasoning goes, more students will enroll in Vargonia's government-funded schools than in nonrecession times. Implicit in the argument is the thought that, because the new law sets an upper limit on the average number of students per teacher, schools that get an influx of new students would have to hire more teachers. During a recession, however, there might be much more competition in the labor market for teachers because many more qualified people are applying for teaching jobs.

A This information is not significant in the context of the argument, which does not need to assume that only government-funded schools provide free education.

B **Correct.** Getting an answer to this question would provide us with specific information useful in evaluating the argument. A "yes" answer to this question would suggest that competition for teaching jobs in Vargonian government-funded schools would be keener during recessions. A "no" answer would suggest that the level of competition would decrease during recessions.

C Discovering the current student-teacher ratio in Vargonia's schools would be of no value, by itself, in evaluating the argument. We do not know what the new upper limit on the student-teacher ratio is, and we do not know whether Vargonia is currently in a recession.

D Finding out whether the proportion this refers to is 1 percent, for example, or 4 percent, would tell us nothing about whether getting teaching jobs at government-funded schools in Vargonia becomes more difficult during a recession. Among other things, we do not know whether Vargonia is currently in a recession, and we do not know what proportion of Vargonia's workers would be qualified candidates for teaching jobs.

E This is of no relevance in evaluating the argument because, presumably, the new limit on student-teacher ratios will be complied with. Thus, even if student-teacher ratios in the past would have exceeded the new limit, the argument concerns whether, *in the future*, getting a teaching job in Vargonia's government-funded schools will be made more difficult by a recession.

The correct answer is B.

664. In Colorado subalpine meadows, nonnative dandelions co-occur with a native flower, the larkspur. Bumblebees visit both species, creating the potential for interactions between the two species with respect to pollination. In a recent study, researchers selected 16 plots containing both species; all dandelions were removed from eight plots; the remaining eight control plots were left undisturbed. The control plots yielded significantly more larkspur seeds than the dandelion-free plots, leading the researchers to conclude that the presence of dandelions facilitates pollination (and hence seed production) in the native species by attracting more pollinators to the mixed plots.

Which of the following, if true, most seriously undermines the researchers' reasoning?

(A) Bumblebees preferentially visit dandelions over larkspurs in mixed plots.

(B) In mixed plots, pollinators can transfer pollen from one species to another to augment seed production.

(C) If left unchecked, nonnative species like dandelions quickly crowd out native species.

(D) Seed germination is a more reliable measure of a species' fitness than seed production.

(E) Soil disturbances can result in fewer blooms, and hence lower seed production.

Argument Evaluation

Situation Bumblebees visit both larkspur and dandelions in certain meadows. A study found that more larkspur seeds were produced in meadow plots in which both larkspur and dandelions grew than in similar plots from which all dandelions had been removed. The researchers inferred that dandelions facilitate larkspur pollination.

Reasoning *What evidence would cast the most doubt on the inference from the study's findings to the conclusion that dandelions facilitate larkspur pollination by attracting more pollinators?* The argument assumes that the only relevant difference between the two types of plots was whether dandelions were present. Evidence that the plots differed in some other way that could provide a plausible alternative explanation of why more larkspur seeds were produced in the plots with dandelions would weaken the argument.

A This would suggest that the larkspur pollination should have been lower in the plots with dandelions, so it does not provide a plausible alternative explanation for the study's findings.

B This is fully compatible with the claim that the dandelions attracted more pollinators to the mixed plots, and it would also help to support the argument's conclusion that dandelions facilitated larkspur pollination in those plots.

C Although this suggests that the mixed plots won't remain mixed for long, it does not provide a plausible alternative explanation for the study's finding that larkspur seed production was higher in the mixed plots.

D The argument is not about how fit larkspurs are as a species, but about why they produced different numbers of seeds in the different plots.

E **Correct.** This provides a plausible alternative explanation for why larkspur seed production was lower in the plots from which dandelions had been removed, since digging them out would have disturbed the soil.

The correct answer is E.

665. An experiment was done in which human subjects recognize a pattern within a matrix of abstract designs and then select another design that completes that pattern. The results of the experiment were surprising. The lowest expenditure of energy in neurons in the brain was found in those subjects who performed most successfully in the experiments.

Which of the following hypotheses best accounts for the findings of the experiment?

(A) The neurons of the brain react less when a subject is trying to recognize patterns than when the subject is doing other kinds of reasoning.

(B) Those who performed best in the experiment experienced more satisfaction when working with abstract patterns than did those who performed less well.

(C) People who are better at abstract pattern recognition have more energy-efficient neural connections.

(D) The energy expenditure of the subjects' brains increases when a design that completes the initially recognized pattern is determined.

(E) The task of completing a given design is more capably performed by athletes, whose energy expenditure is lower when they are at rest.

Argument Construction

Situation Experimental subjects worked with pattern recognition and completion. The subjects who performed best showed the lowest expenditure of energy in neurons in the brain.

Reasoning *Which hypothesis best accounts for the findings?* In order to account for the findings, the hypothesis must suggest a plausible link between successful performance and the energy expenditure of neurons in the brain. Consider each answer choice, and evaluate its plausibility and logic. Where is there a reasonably direct relationship between the given factors and the conclusion that is drawn? Understand that hypotheses based on factors not included in the experiment cannot be used to account for the findings.

A The experiment did not compare types of reasoning so this hypothesis does not account for the results.

B No information is provided about subjects' satisfaction, so this hypothesis is not warranted.

C **Correct.** This statement properly identifies a hypothesis that connects subjects' performance with their energy expenditure and so could account for the experiment's results.

D The most successful subjects would presumably not have completed fewer patterns than average, so the posited increase in energy would likely lead to higher energy expenditures for them, not lower.

E No information is offered on the subjects, so no hypothesis about athletes is warranted.

The correct answer is C.

666. With seventeen casinos, Moneyland operates the most casinos in a certain state. Although intent on expanding, it was outmaneuvered by Apex Casinos in negotiations to acquire the Eldorado chain. To complete its acquisition of Eldorado, Apex must sell five casinos to comply with a state law forbidding any owner to operate more than one casino per county. Since Apex will still be left operating twenty casinos in the state, it will then have the most casinos in the state.

Which of the following, if true, most seriously undermines the prediction?

(A) Apex, Eldorado, and Moneyland are the only organizations licensed to operate casinos in the state.

(B) The majority of Eldorado's casinos in the state will need extensive renovations if they are to continue to operate profitably.

(C) Some of the state's counties do not permit casinos.

(D) Moneyland already operates casinos in the majority of the state's counties.

(E) Apex will use funds it obtains from the sale of the five casinos to help fund its acquisition of the Eldorado chain.

Argument Evaluation

Situation Moneyland operates seventeen casinos, the most in a certain state, and is intent on expanding. Another operator, Apex Casinos, is acquiring the Eldorado casino chain, but must sell five casinos to comply with a state law forbidding any owner to operate more than one casino per county. After these transactions, Apex will operate twenty casinos in the state.

Reasoning *What observation would cast the most doubt on the prediction that Apex will have the most casinos in the state after the transactions?* Apex will operate twenty casinos, whereas Moneyland now operates just seventeen, and no one else operates even that many. It follows that Apex will operate more casinos after its transactions than Moneyland or any other one owner now operates. However, if Moneyland also acquires three or more casinos during the transactions, then Apex will not have the most casinos in the state afterward. Thus, any observation suggesting that Moneyland is about to acquire several casinos would undermine the prediction.

A **Correct.** Since Apex is acquiring Eldorado, Moneyland and Apex will be the only remaining licensed casino operators in the state. Therefore, Moneyland is the only likely buyer for the five casinos Apex needs to sell. So Moneyland is likely to acquire the five casinos during the sale and end up with twenty-two casinos—more than Apex.

B This does not undermine the prediction. Even if the Eldorado casinos cannot operate profitably for long without extensive renovations, Apex will still have twenty casinos immediately after its transactions.

C This supports rather than undermines the prediction. If fewer counties permit casinos, there will be fewer opportunities for Moneyland or any other operator to acquire more casinos to surpass the twenty Apex will own.

D This supports rather than undermines the prediction. If Moneyland's seventeen casinos are in most of the state's counties already, then there are fewer counties in which Moneyland could acquire additional casinos to surpass the twenty Apex will own.

E This supports rather than undermines the prediction. Apex's use of the funds from selling the five casinos to acquire the Eldorado chain will not help anyone else to acquire more casinos to surpass the twenty Apex will own.

The correct answer is A.

667. It is widely assumed that people need to engage in intellectual activities such as solving crossword puzzles or mathematics problems in order to maintain mental sharpness as they age. In fact, however, simply talking to other people—that is, participating in social interaction, which engages many mental and perceptual skills—suffices. Evidence to this effect comes from a study showing that the more social contact people report, the better their mental skills.

Which of the following, if true, most seriously weakens the force of the evidence cited?

(A) As people grow older, they are often advised to keep exercising their physical and mental capacities in order to maintain or improve them.

(B) Many medical conditions and treatments that adversely affect a person's mental sharpness also tend to increase that person's social isolation.

(C) Many people are proficient both in social interactions and in solving mathematical problems.

(D) The study did not itself collect data but analyzed data bearing on the issue from prior studies.

(E) The tasks evaluating mental sharpness for which data were compiled by the study were more akin to mathematics problems than to conversation.

Argument Evaluation

Situation A study shows that the more social contact people report, the better their mental skills are, so engaging in social interaction is sufficient for maintaining mental sharpness.

Reasoning *What would suggest that the study does not establish the truth of the conclusion?* The study shows a correlation between mental sharpness and social interaction but does not indicate why this correlation exists. Evidence that mental sharpness contributes to social interaction or that some third factor affects both mental sharpness and social interaction, could provide an alternative explanation for the correlation and thus cast doubt on the explanation that social interaction contributes to mental sharpness.

A People are often wrongly advised to do things that are not actually beneficial. And even if exercising mental capacities does help to maintain them, the passage says that social interaction provides such exercise.

B **Correct.** This provides evidence that the correlation observed in the study results from mental sharpness facilitating social interaction, in which case the study results do not indicate that social interaction facilitates mental sharpness.

C This would be expected, given the argument's conclusion that social interaction helps to maintain better mental skills overall.

D A study that analyzes data from prior studies can provide evidence just as well as a study that collects its own data can.

E The argument's conclusion would be compatible with this observation, and would then suggest that social interaction contributes to the mental sharpness needed for tasks similar to math problems.

The correct answer is B.