CollegeBoard

Answer Explanations

SAT® Practice Test #6

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Section 1: Reading Test

QUESTION 1

Choice C is the best answer. In the first paragraph the reader is introduced to Nawab, a father of twelve daughters who feels compelled to make more money to care for his family: "he must proliferate his sources of revenue" (lines 6-7). The remainder of the paragraph focuses on the way Nawab attempts to "proliferate" those income sources by identifying some of the moneymaking schemes Nawab undertakes, including setting up a flour mill and a fish farm and attempting to fix both radios and watches.

Choice A is incorrect because even if the first paragraph does indicate that Nawab is willing to work hard to take care of his family, it does not specifically address how he interacts with his daughters emotionally. Choice B is incorrect because the first paragraph describes some of Nawab's activities but not the specifics of his schedule. Choice D is incorrect because the first paragraph introduces Harouni as Nawab's employer but does not describe his lifestyle.

QUESTION 2

Choice B is the best answer. The passage states that Nawab earned "more kicks than kudos" (line 16) for his failed attempts at fixing watches. In the context of not doing a job well, this means Nawab was not given compliments ("kudos") for his efforts but complaints ("kicks") about them.

Choices A and D are incorrect because the passage clearly states that Nawab was not successful fixing watches, which earned him a negative response ("kicks," or complaints). In this context it would be illogical to suggest that Nawab's unsuccessful efforts at fixing watches would result in the sort of positive response implied by choice A ("thrills") or choice D ("interests"). Choice C is incorrect because even though "jolts" might be unpleasant, they're not the kind of negative response one would get instead of compliments.

QUESTION 3

Choice D is the best answer. The passage states that Nawab works "like an engineer tending the boilers on a foundering steamer in an Atlantic gale" (lines 26-28) in his attempts to keep his employer comfortable. The author likely uses this image because it highlights the challenging nature of Nawab's work—work that is described in the next sentence as requiring "superhuman efforts" (line 28).

Choices A, B, and C are incorrect because the author's use of the image of an engineer working hard on a "foundering steamer" describes the effort Nawab is making in keeping his employer comfortable, not what Nawab might be dreaming about, anything to do with tube wells (which are not mentioned in the second paragraph), or that Nawab has had many different jobs in his life.

QUESTION 4

Choice A is the best answer because lines 28-32 show that Nawab is an efficient employee, stating that due to his "superhuman efforts," Nawab is able to keep his employer comfortable, or in almost "the same mechanical cocoon . . . that the landowner enjoyed in Lahore."

Choice B is incorrect because lines 40-42 describe the actions of Nawab's employer only and do not address the employer's feelings about Nawab's work. Choice C is incorrect because lines 46-49 show Nawab characterizing himself as an old and ineffective employee, not one who performs his job well. Choice D is incorrect because line 58 addresses the fact Nawab had always lived in his employer's household but not his effectiveness as an employee.

QUESTION 5

Choice C is the best answer. The main purpose of Nawab's comments in lines 43-52 is to highlight the labor and service he has provided for Harouni over the years. Nawab says "there is but one man, me, your servant" to take care of the tube wells on all Harouni's vast lands and that the extensive work has resulted in Nawab earning gray hairs on his employer's behalf.

Choice A is incorrect because even though lines 43-52 initially highlight the vastness of Harouni's lands, those lines primarily focus on Nawab's dedication and service to Harouni. Choice B is incorrect because lines 43-52 emphasize not that Nawab is competent and reliable but that Nawab feels he is no longer able to adequately fulfill his duties. Choice D is incorrect because in lines 43-52, Nawab doesn't say he intends to quit his job, asking instead only for help doing it.

QUESTION 6

Choice D is the best answer. In lines 61-62, Nawab says to his employer that he "cannot any longer bicycle about like a bridegroom from farm to farm." In this context, Nawab uses the word "bridegroom" to imply he is no longer a young man who can easily travel such great distances on his bike.

Choices A, B, and C are incorrect because in the context of Nawab not being able to bike so far, he uses the word "bridegroom" to imply that he is no longer young, not that he is no longer in love (choice A), naive (choice B), or busy (choice C).

QUESTION 7

Choice B is the best answer. Harouni's reaction to Nawab's request for a new motorcycle can be found in lines 66-68, where the employer is said not to "particularly care one way or the other, except that it touched on his comfort—a matter of great interest to him." For Harouni, in other words, the issue of Nawab getting a new motorcycle came down to what was best for Harouni, not what was best for Nawab.

Choice A is incorrect because in the passage Harouni is said not to be particularly impressed with how hard Nawab works; he cares about the issue of the motorcycle only in regard to its effect on his own comfort. Choice C is incorrect because Harouni is said to find Nawab's speech not eloquent but "florid" (line 54), meaning flamboyant or ostentatious. Choice D is incorrect because Nawab does not threaten to quit his job but politely asks his employer to "let me go" (line 64).

QUESTION 8

Choice B is the best answer. The previous question asks why Harouni purchases his employee Nawab a new motorcycle, with the correct answer (that Harouni did so because it was in his own best interest) supported in lines 66-68: "He didn't particularly care one way or the other, except that it touched on his comfort—a matter of great interest to him."

Choices A, C, and D are incorrect because the lines cited do not support the answer to the previous question about why Harouni buys Nawab a new motorcycle. Instead, they simply identify the issue (choice A), note that Harouni also gave Nawab money for gas (choice C), and show how the motorcycle affects Nawab's side businesses (choice D).

QUESTION 9

Choice A is the best answer. The passage states that Nawab's new motorcycle leads to the "disgust of the farm managers" (line 74).

Choices B, C, and D are incorrect because the passage specifically says Nawab's new motorcycle leads to the "disgust of the farm managers," not their happiness (choice B), envy (choice C), or indifference (choice D).

QUESTION 10

Choice D is the best answer. The passage specifically states what Nawab considers the greatest part of his getting a new motorcycle: "Best of all, now he could spend every night with his wife" (lines 81-82).

Choices A, B, and C are incorrect because the passage explicitly states that Nawab believes the best thing about his new motorcycle is that he can "spend every night with his wife," not that people start calling him "Uncle" (choice A), that he is able to expand his business (choice B), or that he is able to educate his daughters (choice C).

QUESTION 11

Choice B is the best answer. The passage states that historically, "newspapers such as *The Times* and broadcasters such as the BBC were widely regarded as the trusted shapers of authoritative agendas and conventional wisdom" (lines 27-30). But it goes on to say that "there is a growing feeling . . . that the news media should be 'informative rather than authoritative'" (lines 70-73). Together these lines indicate the main purpose of the passage, which is to discuss how people's perception of the news media is changing from its being an authoritative voice to simply an informative one.

Choice A is incorrect because the passage deals with changes in the way news is perceived but does not primarily focus on the technological changes that may have resulted in those or other changes. Choice C is incorrect because even if the passage implies that viewers might increasingly believe a journalist's values can affect the news stories being produced, it does not provide specific examples of that happening. Choice D is incorrect because the passage begins with the simple sentence "The news is a form of public knowledge" (line 1) and makes no attempt to refute that claim.

QUESTION 12

Choice D is the best answer. Although the passage initially states that traditional news authorities were once implicitly "trusted" (line 29) regarding the content they produced, it goes on to note that "as part of the general process of the transformation of authority . . . the demand has been for all authority to make explicit the frames of value which determine their decisions" (lines 33-38). The modern audience, in other words, wants to hear not only the stories a news organization produces but also the values that form the foundation of that organization's beliefs.

Choices A, B, and C are incorrect because lines 33-38 make clear that the expectation traditional authorities now face is the need to "make explicit the frames of value which determine their decisions," not that they shouldn't be affected by commercial interests (choice A), that they should work for the common good (choice B), or that they should consider the context of public versus private knowledge (choice C).

QUESTION 13

Choice C is the best answer. The previous question asks what expectation traditional authorities now face, with the answer being that they must make their perspectives or beliefs clear to the audience. This is supported in lines 33-38: "As part of the general process of the transformation of authority . . . the demand has been for all authority to make explicit the frames of value which determine their decisions."

Choices A, B, and D are incorrect because the lines cited do not support the answer to the previous question about what expectation traditional authorities now face, instead contrasting private and public knowledge (choice A), explaining the complexity of news dissemination (choice B), and providing one way news has changed in modern times (choice D).

QUESTION 14

Choice C is the best answer. In lines 23-25, the passage states that "there is not always common agreement about what the public needs to know." In this context, a "common" agreement is a widespread one shared by many people.

Choices A, B, and D are incorrect because in the context of something shared by many people, the word "common" implies that it is widespread, not that it is plentiful or abundant (choice A), recognizable to others (choice B), or normal (choice D).

QUESTION 15

Choice B is the best answer. Two quotes are provided in lines 43-53, one highlighting the way editors work differently in modern times due to the demands of the audience and one offering an opinion about the perceived negative effects of that new reality of news. Those extended quotations were added by the authors most likely because they provide concrete examples of how some journalists feel about modern news dissemination.

Choice A is incorrect because the two quotations provided in lines 43-53 are not contradictory: the first offers a description of how news editors work differently in modern times, and the second describes how certain changes might affect news stories or the audience. Choices C and D are incorrect because the two quotations illustrate how some feel about the way the dissemination of news might be changing and are not used to either criticize or make suggestions.

QUESTION 16

Choice A is the best answer. The passage explains that although the major news organizations were once considered "trusted shapers" (line 29) of public knowledge, that perception is changing due to the "growing feeling . . . that the news media should be 'informative rather than authoritative'; the job of journalists should be to 'give the news as raw as it is, without putting their slant on it'; and people should be given 'sufficient information' from which 'we would be able to form opinions of our own'" (lines 70-77). In other words, the audience now wants raw facts about the world, not facts constructed in support of a certain opinion.

Choice B is incorrect because the passage presents the public as wanting information without any slant on it, not as wanting only a limited amount of information. Choices C and D are incorrect because the passage does not specifically identify the public's feelings about including quotations from authorities in news stories or how they would want journalists to handle private details that the subjects of news stories do not want revealed.

QUESTION 17

Choice D is the best answer. The previous question asks what the public is beginning to believe should be avoided in news stories, with the answer being the personal opinions or feelings of journalists. This is supported in lines 70-77: "There is a growing feeling . . . that the news media should be 'informative rather than authoritative'; the job of journalists should be to 'give the news as raw as it is, without

putting their slant on it'; and people should be given 'sufficient information' from which 'we would be able to form opinions of our own.'"

Choices A, B, and C are incorrect because the lines cited do not support the answer that the modern public wants journalists to avoid personal judgments when telling news stories, instead contrasting personal or private knowledge with public knowledge (choice A), characterizing how trusted broadcasters were once viewed (choice B), and explaining how some professional journalists feel about the new reality of the news (choice C).

QUESTION 18

Choice A is the best answer. In lines 73-75, the passage states the modern belief that "the job of journalists should be to 'give the news as raw as it is, without putting their slant on it.'" In this context, the word "raw" means unfiltered or in its most basic state.

Choices B, C, and D are incorrect because in the context of news without any "slant on it," the word "raw" implies something unfiltered, not something unprotected or uncovered (choice B), severe (choice C), or untried or unproven (choice D).

QUESTION 19

Choice A is the best answer. The table shows that in 1985, 55% of respondents believed news organizations "get the facts straight," which was the highest percentage for that choice for any of the years provided.

Choices B, C, and D are incorrect because the table shows that the percentage of respondents who believed news organizations "get the facts straight" was smaller in 1992 (49%), 2003 (36%), and 2011 (25%) than in 1985 (55%).

QUESTION 20

Choice C is the best answer. The table shows that from 2003 to 2007, the percentage of people who believed news organizations "get the facts straight" rose only minimally, from 36 to 39%, while their perception of the independence and fairness of those organizations changed not at all, remaining at 23% and 26%, respectively.

Choice A is incorrect because the table indicates viewers' perceptions of the accuracy of news organizations but does not identify how many inaccurate news stories there were in any of the years listed. Choice B is incorrect because the number of people who believe news organizations "tend to favor one side" did not double between 1992 and 2003, rising only from 63% to 66%. Choice D is incorrect because the table shows that between 2007 and 2011, people's perception of the accuracy of news organizations decreased rather than increased, dropping from 39% to 25%.

QUESTION 21

Choice C is the best answer. The 2011 data in the table indicate that only 25% of respondents believed news organizations were accurate, 15% believed they were independent, and 16% believed they were fair. Combined, these data support the idea put forth in lines 69-70 that modern audiences are becoming skeptical of the authority of experts.

Choices A, B, and D are incorrect because the 2011 data in the table show the public's lack of faith in the accuracy, independence, and fairness of news organizations but do not indicate how politically involved that public was (choice A), demonstrate the claims of experts (choice B), or reveal the importance of viewer mouse clicks in modern news (choice D).

QUESTION 22

Choice B is the best answer. The first paragraph of the passage identifies and describes "Texas gourd vines" (line 1), but the primary focus of the passage is introduced in the first sentence of the second paragraph: "In one recent study, Nina Theis and Lynn Adler took on the specific problem of the Texas gourd—how to attract enough pollinators but not too many beetles" (lines 17-20). The remainder of the passage focuses on describing the purpose, process, and results of the recent research done on those Texas gourd vines.

Choice A is incorrect because the passage doesn't focus on the assumptions behind a theory but rather on the way in which that theory was tested. Choice C is incorrect because the passage does not present much conflicting data; most of it supports the idea there can be too much fragrance for the Texas gourd vine. Choice D is incorrect because the passage explains the procedures used in a study were "'very labor intensive'" (line 58) but does not present them as particularly innovative.

QUESTION 23

Choice A is the best answer. The passage says that to test their hypothesis, the scientists "planted 168 Texas gourd vines in an Iowa field" (lines 33-34) and then ultimately walked "from flower to flower, observing each for two-minute intervals" (lines 62-63). Because they gathered data by looking at and studying the plants in question, the scientists' research is best characterized as relying on direct observation.

Choices B, C, and D are incorrect because lines 62-63 make clear that the research emphasized direct observation, not historical data (choice B), expert testimony (choice C), or random sampling (choice D).

QUESTION 24

Choice D is the best answer. The passage states that by using the smell of their nectar to lure pollinators like bees, Texas gourd vines are employing an "'open communication network'" that attracts "'not just the good guys, but . . . also . . . the bad guys'" (lines 7-10). Because cucumber beetles are then identified as some of "the very bad guys" (line 12) as far as the Texas gourd plant is concerned, it can be inferred that both the beetles and the bees are attracted to the same scent.

Choices A and C are incorrect because they are not supported by the text; the passage states that cucumber beetles "chew up pollen and petals" (lines 12-13) from the Texas gourd vines but not that those vines are their "primary" food source, and the passage does not address any effects, positive or negative, that cucumber beetles experience as a result of carrying bacterial wilt disease. Choice B is incorrect because the passage states that treating the Texas gourd vines with dimethoxybenzene led to "double the normal number of beetles" (lines 65-66) but that pollinators like bees "did not prefer" (line 67) the treated flowers, which implies that cucumber beetles are not less attracted but more attracted to dimethoxybenzene than honey bees are.

QUESTION 25

Choice C is the best answer. The author indicates that it is reasonable to think that the Texas gourd plants might lure more pollinators if their smell was stronger. This is clear from lines 26-27, which state that "intuition suggests that more of that aroma should be even more appealing to bees."

Choices A and D are incorrect because lines 26-27 support the idea that it was initially thought that Texas gourd vines could lure more pollinators through "more of that aroma," not by lacking an aroma (choice A) or giving off a more varied aroma (choice D). Choice B is incorrect because bees are the only pollinators specifically discussed in the passage, and there is no suggestion that targeting other insects would attract more bees.

QUESTION 26

Choice A is the best answer. The passage explains that as part of their research the scientists "made half the plants more fragrant by tucking dimethoxybenzene-treated swabs deep inside their flowers. Each treated flower emitted about 45 times more fragrance than a normal one" (lines 35-39). In this context, a flower that was "treated" would be one that was changed or altered.

Choices B, C, and D are incorrect because in the context of a flower having a compound like dimethoxybenzene added to it, the word "treated" means changed or altered, not returned to normal (choice B), given (choice C), or kept for future use (choice D).

QUESTION 27

Choice D is the best answer. In the passage Theis surmises that honey bees were likely repelled not by the enhanced fragrance of the dimethoxybenzene-treated flowers but "by the abundance of beetles" (lines 71-72) found on them. She was able to make that assumption because the honey bees were able to choose between both normal flowers and fragrance-enhanced flowers without any beetles on them, because one of the parameters of the research was that "every half hour throughout the experiments, the team plucked all the beetles off of half the fragrance-enhanced flowers and half the control flowers, allowing bees to respond to the blossoms with and without interference by beetles" (lines 45-50).

Choice A is incorrect because the passage states only that the scientists observed the bees and beetles on the flowers as soon as they opened (lines 59-61), not both before and after they opened. Choice B is

incorrect because although the passage does state that the experiment only took place during the "August flowering season" (line 35), it doesn't state that this was a variable in the experiment or had any effect on it. Choice C is incorrect because comparing gourds based on the type of pollination is not related to the issue of what repelled bees from the fragrance-enhanced plants.

QUESTION 28

Choice A is the best answer. The previous question asks what Theis and Adler did to allow Theis to theorize that the bees were repelled not by the enhanced fragrance of certain flowers but by the excessive number of beetles on them, with the answer (they give the bees the chance to visit both normal and fragrance-enhanced flowers that did not have beetles on them) being supported in lines 45-50: "So every half hour throughout the experiments, the team plucked all the beetles off of half the fragrance-enhanced flowers and half the control flowers, allowing bees to respond to the blossoms with and without interference by beetles."

Choices B, C, and D are incorrect because the lines cited do not support the answer to the previous question about what allowed Theis and Adler to theorize that the bees were repelled not by fragrance but by insects, instead highlighting a variable that didn't directly address the effect of fragrance on bees (choice B), describing the timing of one of the steps undertaken in the experiment (choice C), and discussing an aspect of gourd growth that was not related to the question of why bees may or may not have wanted to visit fragrance-enhanced flowers (choice D).

QUESTION 29

Choice A is the best answer. The first six paragraphs (lines 1-64) of the passage introduce a plant (the Texas gourd vine) and its problem (luring enough insects to pollinate it but not too many of those that will harm it) and then describe a study undertaken to deal with "the specific problem of the Texas gourd—how to attract enough pollinators but not too many beetles" (lines 18-20). After the specifics of that experiment are described in detail, the results are explained and summarized in the seventh and eighth paragraphs (lines 65-84): "What they saw was double the normal number of beetles. . . . Squash bees were indifferent, and honey bees visited enhanced flowers less often. . . . That added up to less reproduction for fragrance-enhanced flowers" (lines 65-76).

Choice B is incorrect because Theis and Adler's hypothesis (that more fragrance would make the flowers "even more appealing to bees," line 27) is found in the third paragraph (lines 26-40). Choice C is incorrect because Theis and Adler's methods are described in the third through sixth paragraphs (lines 26-64), not the seventh and eighth (lines 65-84). Choice D is incorrect because the seventh and eighth paragraphs detail the results in an experiment but do not focus on the researchers' reasoning.

QUESTION 30

Choice B is the best answer. To be "indifferent" is to be apathetic, or without care or concern. In the context of an experiment that tested whether or not insects preferred normally scented flowers or ones

with enhanced fragrance, describing the squash bees as “indifferent” implies they did not care about the scents and were equally drawn to both types of flowers.

Choice A is incorrect because “indifference” suggests the amount of concern one has about something but not anything to do with physical capabilities (such as being able to distinguish between the flowers). Choice C is incorrect because “indifference” suggests that one has no preference. Choice D is incorrect because the squash bees are said to be “indifferent” to certain flowers based on their fragrance, not on the number of beetles that may or may not be on them.

QUESTION 31

Choice B is the best answer. Theis and Adler’s research clearly provided an answer to the question of why there is an upper limit on the intensity of the aroma emitted by Texas gourd plants, as their experiment was described as being able to “provide a reason that Texas gourd plants never evolved to produce a stronger scent” (lines 85-86).

Choice A is incorrect because Theis and Adler’s research was not able to show how to increase pollinator visits to the Texas gourd vine, as the results of their experiment showed that “pollinators, to their surprise, did not prefer the highly scented flowers” (lines 67-68). Choice C is incorrect because Theis and Adler’s research was not able to explain how hand pollination rescued fruit weight, a finding the passage describes as “a hard-to-interpret result” (line 83). Choice D is incorrect because the passage never indicates that the flowers stop producing fragrance when beetles are present.

QUESTION 32

Choice D is the best answer. The previous question asks what question from among the answer choices Theis and Adler’s research was able to answer regarding Texas gourd vines. The answer (they determined why there was an upper limit to the amount of fragrance produced) is supported in lines 85-86: “The new results provide a reason that Texas gourd plants never evolved to produce a stronger scent.”

Choices A, B, and C are incorrect because the lines cited do not support the answer to the previous question about what Theis and Adler’s research revealed about Texas gourd vines, instead explaining the goal of the experiment undertaken (choice A), identifying some of the fragrance compounds found in the plant’s aroma (choice B), and describing results related to hand pollination rather than fragrance (choice C).

QUESTION 33

Choice B is the best answer. In Passage 1, Lincoln asserts that citizens of the United States should never break the laws of their land, for any reason, because to do so undermines the nation’s values. This is clearly demonstrated when he says, “let every man remember that to violate the law, is to trample on the blood of his father, and to tear the character of his own, and his children’s liberty” (lines 9-12).

Choice A is incorrect because Lincoln says that bad laws "should be repealed as soon as possible" (line 30), not that breaking the law would slow their repeals. Choice C is incorrect because Lincoln says that "there is no grievance that is a fit object of redress by mob law" (lines 36-37) but doesn't argue that breaking the law will lead to mob rule. Choice D is incorrect because in his speech Lincoln doesn't discuss divisions between social groups.

QUESTION 34

Choice A is the best answer. The previous question asks what Lincoln believes is the result of breaking the laws, with the answer being that such actions undermine a nation's values. This is supported in lines 9-12: "let every man remember that to violate the law, is to trample on the blood of his father, and to tear the character of his own, and his children's liberty."

Choices B, C, and D are incorrect because the lines cited do not support the answer to the previous question regarding what Lincoln contends happens when citizens break the law, instead explaining exactly which groups Lincoln believes should vow to follow the laws (choice B), illustrating how Lincoln believes unjust laws should be dealt with (choice C), and stating Lincoln's belief that no law is ever improved through mob rule (choice D).

QUESTION 35

Choice D is the best answer. In lines 24-25, Lincoln says, "I so pressingly urge a strict observance of all the laws." In this context, the word "urge" most nearly means advocate, because when Lincoln urges people to obey the laws, he is pleading in favor of them doing so.

Choices A and C are incorrect because in the context of lines 24-25 ("I so pressingly urge a strict observance of all the laws"), to urge that laws be followed is to advocate for them to be obeyed, not to speed up such adherence (choice A) or make such adherence necessary (choice C). Choice B is incorrect because Lincoln is asking people to follow the laws but not directly causing people to obey them.

QUESTION 36

Choice D is the best answer. After advocating for citizens "never to violate in the least particular, the laws of the country" (lines 3-4), Lincoln begins the second paragraph by making another point: "When I so pressingly urge a strict observance of all the laws, let me not be understood as saying there are no bad laws, nor that grievances may not arise, for the redress of which, no legal provisions have been made" (lines 24-28). This sentence is an attempt on Lincoln's part to make clear what could be a misunderstanding of his position ("let me not be understood") and to correct that possible misunderstanding. Lincoln doesn't want people to believe he is saying all laws are always good, but rather that those laws need to be followed as long as they are on the books.

Choices A and B are incorrect because the sentence in lines 24-28 does not raise and refute a possible counterargument to Lincoln's argument or identify a shortcoming of his argument, but rather it is an attempt on Lincoln's part to make sure he is not misunderstood. Choice C is incorrect because that sentence does not acknowledge and provide support for a central assumption of Lincoln's argument but looks at a different aspect of the issue.

QUESTION 37

Choice A is the best answer. In the passage Lincoln states his belief that any laws that "continue in force, for the sake of example, they should be religiously observed" (lines 31-32). In this context, "observed" most nearly means followed, as Lincoln is urging citizens to heed or follow the country's laws.

Choices B, C, and D are incorrect because in the context of Lincoln advocating that laws be religiously "observed," he means those laws should be followed, not that they should be studied closely (choice B), considered at length (choice C), or merely recognized (choice D).

QUESTION 38

Choice D is the best answer. Passage 2 begins with Thoreau's statement that "unjust laws exist" (line 45). His philosophy regarding how to deal with those unjust laws is evident in lines 58-59: "If the injustice is part of the necessary friction of the machine of government, let it go, let it go." Thoreau believes, in other words, that some injustices are an unfortunate part of normal governance and just need to be endured ("let it go, let it go").

Choice A is incorrect because Thoreau does not say some unjust aspects of government can be fixed easily or that they are merely superficial. Choice B is incorrect because Thoreau does not argue that such injustices are subtle and should be studied, but rather that in certain cases it is best to "let it go, let it go" (line 59), while in other cases one should act or "break the law" (line 66). Choice C is incorrect because Thoreau does not say that any such unjust aspects of government are beneficial or helpful.

QUESTION 39

Choice C is the best answer. The previous question asks what Thoreau feels about some unjust aspects of government, with the answer being that he finds them inevitable and something that needs to be endured. This is supported in lines 58-59: "If the injustice is part of the necessary friction of the machine of government, let it go, let it go."

Choices A, B, and D are incorrect because the lines cited do not support the answer to the previous question about Thoreau's thoughts regarding certain injustices in government, instead asking a theoretical question about how one should respond to unjust laws (choice A), providing an observation about how some view acting out against unjust laws (choice B), and acknowledging that in some questions of conscience, one may or may not choose to act (choice D).

QUESTION 40

Choice C is the best answer. In Passage 1, Lincoln makes clear his belief that individuals should always heed the laws: "Let every American . . . swear . . . never to violate in the least particular, the laws of the country" (lines 1-4). Even bad laws, he states, "while they continue in force, for the sake of example, they should be religiously observed" (lines 30-32). In Passage 2, Thoreau is less rigid in his beliefs regarding the need for individuals to heed the laws of the country, arguing at times that some laws should be broken: "but if it is of such a nature that it requires you to be the agent of injustice to another, then, I say, break the law" (lines 64-66). While Lincoln and Thoreau can therefore be said to disagree about the moral imperative to follow existing laws, both passages advance an opinion regarding the need to follow or not follow all of the country's laws.

Choice A is incorrect because the passages are not making arguments about differences between legal duties and moral imperatives but rather are addressing the need to follow (or not) the laws of a land. Choice B is incorrect. Both passages address the question of changing existing laws in the United States, but that is only a minor part of what is a greater debate about the need to follow or not follow existing laws. Choice D is incorrect because neither passage addresses the standards for determining whether or not laws are just, only whether laws should be heeded or not.

QUESTION 41

Choice B is the best answer. In Passage 2, Thoreau says that if a law "is of such a nature that it requires you to be the agent of injustice to another, then, I say, break the law" (lines 64-66). It is clear from Passage 1 that Lincoln would reject this stance, as he says individuals should never break the law ("Let every American . . . swear . . . never to violate in the least particular, the laws of the country," lines 1-4) and should wait for a bad law to be repealed ("bad laws, if they exist, should be repealed . . . still while they continue . . . they should be religiously observed," lines 29-32).

Choices A and C are incorrect because in Passage 1, Lincoln is absolutely clear that all laws "should be religiously observed" (line 32); he does not describe anyone's suggestion to break the law as either excusable (choice A) or honorable (choice C). Choice D is incorrect because it is not supported by the passage, as Lincoln does not discuss the core principles of the Constitution in Passage 1.

QUESTION 42

Choice D is the best answer. In Passage 1, Lincoln uses abolitionism solely as an example to illustrate the argument he is making about heeding the law: "In any case that arises, as for instance, the promulgation of abolitionism, one of two positions is necessarily true" (lines 37-39). In Passage 2, Thoreau does the same thing by noting that "those who call themselves Abolitionists should at once effectually withdraw their support . . . from the government" (lines 79-82). Although Lincoln and Thoreau use the cause of abolitionism to argue different points, a commonality they share is that neither embraces the cause personally in the passage; Lincoln simply uses it as an example ("as for instance") while Thoreau specifically talks of *other people* "who call themselves Abolitionists."

Choice A is incorrect because in Passage 1, Lincoln argues against drastic action, saying that even in the case of abolitionism, such a response is not "necessary, justifiable, or excusable" (line 44). Choice B is incorrect because it's not accurate to say abolitionism was central to the arguments, only that each used that subject as an example. Choice C is incorrect because neither Lincoln nor Thoreau offers an opinion about whether or not abolitionism will gain widespread acceptance, instead they incorporate it only as an example in their discussions of just and unjust laws.

QUESTION 43

Choice C is the best answer. In lines 10-17, the passage illustrates how the cost of solar energy has dropped in recent years: "A few years ago, silicon solar panels cost $4 per watt. . . . 'Now it's down to something like 50 cents a watt, and there's talk of hitting 36 cents per watt.'" In lines 44-47, the passage describes some of the new technology that exists in the field: "Meanwhile, researchers at the National Renewable Energy Laboratory have made flexible solar cells on a new type of glass from Corning called Willow Glass, which is thin and can be rolled up." Overall, the passage can be regarded as an objective overview of the solar panel industry delivered by a journalist covering the field.

Choices A and D are incorrect because the author does not present himself as either a consumer who plans to buy solar panels or a hobbyist with a personal interest in solar panel technology. Rather, the author focuses on developments in solar technology. Choice B is incorrect because the passage does not discuss research methods used in the solar panel field but rather the technologies that exist in the field.

QUESTION 44

Choice A is the best answer. In the context of describing the solar panel manufacturing industry as being "in the doldrums because supply far exceeds demand" (lines 2-3), saying it is currently a "poor" market implies it is a weak, or slow, market.

Choices B, C, and D are incorrect because in the context of describing the solar panel manufacturing industry as being "in the doldrums," saying it is a poor market implies it is a weak market, not a modest one (choice B), a pathetic one (choice C), or an outdated one (choice D).

QUESTION 45

Choice C is the best answer. It can reasonably be inferred that much of the solar panel industry believes current solar technology is too expensive and inefficient because the passage states that the industry has been working to improve those two things: "All parts of the silicon solar panel industry have been looking for ways to cut costs and improve the power output of solar panels, and that's led to steady cost reductions" (lines 27-30).

Choice A is incorrect because the passage explains how solar panels work but never states or implies that consumers do not understand the technology. Choice B is incorrect because while the passage explains how two-sided solar cells can increase solar electric output, it does not suggest that they have

any existing or possible weaknesses. Choice D is incorrect because the passage characterizes Willow Glass as entirely promising and doesn't imply that it is not efficient enough to be marketed.

QUESTION 46

Choice D is the best answer. The previous question asks what can be inferred from the passage about beliefs in the solar panel industry, with the answer being that many in the industry believe current solar technology is too expensive and too inefficient. This is supported in lines 27-30: "All parts of the silicon solar panel industry have been looking for ways to cut costs and improve the power output of solar panels, and that's led to steady cost reductions."

Choices A, B, and C are incorrect because the lines cited do not support the answer to the previous question, which is that much of the solar panel industry believes current solar technology is too expensive and inefficient. Choice A highlights the industry's current limited sales. Choice B addresses the high cost of solar panels but not their inefficiency. Choice C addresses a potential decrease in the cost of solar panels and does not mention efficiency.

QUESTION 47

Choice B is the best answer. The passage clearly states how two-sided solar panels will increase the efficiency of solar electricity units, explaining that they will be able to absorb excess reflected light, especially if those panels are built on sand: "That light reflects onto the back of the panels and could be harvested to increase the power output" (lines 61-62).

Choices A, C, and D are incorrect because the passage explains only that two-sided solar panels can raise efficiency by harvesting reflected light, not that they can raise efficiency because they take little energy to operate (choice A), are cost-effective (choice C), or keep sunlight from reaching the ground (choice D).

QUESTION 48

Choice B is the best answer. The previous question asks how two-sided solar panels can raise the efficiency of solar electricity units, with the answer being they can increase solar power input by catching excess reflected light. This is supported in lines 61-62: "That light reflects onto the back of the panels and could be harvested to increase the power output."

Choices A, C, and D are incorrect because the lines cited do not support the answer to the previous question about how two-sided solar panels can raise the efficiency of solar electricity units, instead highlighting that some sunlight is missed by current units (choice A), explaining why two-sided solar panels work well in sand (choice C), and projecting how much more effective those two-sided solar panels could be (choice D).

QUESTION 49

Choice D is the best answer. In lines 69-71, the passage states that "even longer-term, Green is betting on silicon, aiming to take advantage of the huge reductions in cost already seen with the technology." In this context, the phrase "betting on" most nearly means "optimistic about," as the sentence implies that Green has positive expectations for silicon use now and in the future.

Choice A is incorrect because "dabbling in" a subject implies being only minimally involved with it, but in lines 69-71, Green is shown to be committed to silicon use. Choice B is incorrect because in this context the phrase "betting on" is figurative and implies believing in something, not actually being involved with games of chance. Choice C is incorrect because Green is said to want to "take advantage" of silicon use, meaning he does not intend to switch from it.

QUESTION 50

Choice B is the best answer. The passage concludes by stating that "the challenge is to produce good connections between these semiconductors, something made challenging by the arrangement of silicon atoms in crystalline silicon" (lines 81-84). As this last sentence identifies an issue the solar panel industry still faces, and describes it as a "challenging" one at that, it mainly serves to identify a problem or hurdle that must be dealt with by the industry.

Choices A, C, and D are incorrect because the main point of the passage's last sentence is that there is a "challenge" or hurdle that the solar panel industry has to deal with; it doesn't express concerns about what a material won't be able to do (choice A), make predictions (choice C), or introduce a new idea for study (choice D).

QUESTION 51

Choice D is the best answer. Figure 2 shows that in 2009, the US average electricity cost per megawatt-hour (MWh) was $120. Of the projected 2017 energy costs for fuels listed in figure 1, the one closest to the 2009 US average electricity cost 120 dollars per megawatt-hour is the projected cost of advanced nuclear energy, estimated at just below 125 dollars per megawatt-hour.

Choices A, B, and C are incorrect because figure 1 shows the projected energy costs of natural gas, wind (onshore), and conventional coal as just below 75 dollars per megawatt-hour, 100 dollars per megawatt-hour, and approximately 105 dollars per megawatt-hour, respectively. None of these costs is as close to the 2009 US average electricity cost of 120 dollars per megawatt-hour as the projected 2017 cost of advanced nuclear energy, which is just below 125 dollars per megawatt-hour.

QUESTION 52

Choice B is the best answer. Figure 2 shows that the dropping cost of solar photovoltaic power per megawatt-hour is projected to intersect with the 2009 US average electricity cost of 120 dollars per megawatt-hour in the year 2020.

Choice A is incorrect because figure 2 projects that the solar photovoltaic cost per megawatt-hour in 2018 will be approximately $140, which is more than the 2009 US average electricity cost of 120 dollars per megawatt-hour. Choices C and D are incorrect because figure 2 projects that the solar photovoltaic cost per megawatt-hour will be around $90 in 2025 and $70 in 2027, both of which are less than the 2009 US average electricity cost of 120 dollars per megawatt-hour.

Section 2: Writing Test

QUESTION 1

Choice D is the best answer because a comma is needed to separate the main independent clause ("In the winter . . . Lake 227") from the dependent clause that describes the lake. The pronoun "one" is used correctly to refer to its antecedent "Lake 227."

Choice A is incorrect because it creates a comma splice (two independent clauses joined by only a comma). Choices B and C are incorrect because in both choices the information that follows the period is not in the form of a complete sentence.

QUESTION 2

Choice A is the best answer because the comma is used correctly to separate the introductory dependent clause ("While . . . irresponsible") from the independent clause that follows it.

Choices B, C, and D are incorrect because the comma in each is misplaced. Choices B and D lack a comma where one is needed after the dependent clause ("While . . . irresponsible"). In choice C, while a comma is provided after "irresponsible," there is an unnecessary comma after "and."

QUESTION 3

Choice D is the best answer because it most clearly and concisely combines the sentences using the correct punctuation. This choice eliminates unnecessary words, and the commas are placed correctly between the clauses.

Choice A is incorrect because the phrase "the result being that it" is wordy and could be replaced with the single word "which." Choice B is incorrect because the words "algal blooms cause oxygen depletion" need not be repeated. Choice C is incorrect because there is unnecessary repetition of the words "oxygen depletion" and "algal blooms."

QUESTION 4

Choice B is the best answer because the colon is used properly to introduce an independent clause ("it was . . . Erie") that explains or elaborates on the information that came before in the sentence.

Choice A is incorrect because the colon is misplaced. It should be placed after the word "green," not after "with." Choice C is incorrect because the dash is not placed correctly. If it were placed after the word "green," it could be used. Choice D is incorrect because the comma creates a comma splice. A comma cannot be used without a conjunction to join two independent clauses.

QUESTION 5

Choice C is the best answer because it contains the best transition between the two paragraphs. The previous paragraphs describe an experiment that Schindler and Brunskill conducted in Lake 227. This paragraph is about an experiment they performed in Lake 226. Only choice C provides a transition that introduces the new experiment performed in Lake 226.

Choice A is incorrect because it contains no specific reference to the previous paragraph and is too general to be tied to this paragraph. Choices B and D are incorrect because they contain unnecessary details that do not connect the ideas in the paragraphs.

QUESTION 6

Choice B is the best answer because it is concise. It does not repeat the idea of addition.

Choices A, C, and D are incorrect because they are repetitive. The conjunction "and" is sufficient after "they added just nitrates" to indicate that "a source of carbon" was also added. Choice A needlessly contains "was added." In choice C "plus also" and in choice D "also adding" are similarly repetitive.

QUESTION 7

Choice A is the best answer because the singular past tense verb "was teeming" agrees in number with the singular subject "half" and is consistent with the other past tense verbs in the paragraph.

Choices B and C are incorrect because they contain plural verbs instead of the singular one that is needed to agree with the singular subject "half." Choice D is incorrect because it contains a present tense verb that is inconsistent with the past tense verbs in the paragraph.

QUESTION 8

Choice C is the best answer because the verb “published” most effectively indicates the relationship between research findings and a journal, *Science*. Scientific research is published in scientific journals.

Choices A, B, and D are incorrect because they don’t feature the specific vocabulary required, and the tone of the answer choices is too informal for the content of the passage.

QUESTION 9

Choice D is the best answer because “subsequently” logically indicates that after the research demonstrated a clear correlation between the growth of blue-green algae and the introduction of phosphates into the water, Canadian legislators passed laws banning phosphates in laundry detergent.

Choices A, B, and C are incorrect because the transitional phrase “for example” and the conjunctive adverbs “similarly” and “however” do not indicate a logical relationship between what the research demonstrated and what the Canadian legislators did with that knowledge.

QUESTION 10

Choice B is the best answer because it deals with a “policy outcome” related to the research. The adoption of legislation to reduce or eliminate phosphates in detergents is a policy outcome (a change in official policy concerning detergents) that was clearly informed by Schindler and Brunskill’s research.

Choices A, C, and D are incorrect because they do not mention legislation or policies that were adopted as a result of Schindler and Brunskill’s research on the effects of phosphates in laundry detergents.

QUESTION 11

Choice C is the best answer because it offers a counterargument to the previous sentence’s claim in favor of “experiments like these.” Acknowledging that “scientists should not be allowed to randomly perform experiments on just any body of water” shows that the writer is aware of the potential problems with these experiments.

Choices A, B, and D are incorrect because none of them offers a counterargument. They all make factual statements.

QUESTION 12

Choice D is the best answer because it correctly provides the plural noun “stages” and the singular possessive pronoun “its” (no apostrophe).

Choices A and C are incorrect because a possessive pronoun is needed to replace the proper noun “Tower of Pisa,” not the contraction “it’s.” Choices B and C are incorrect because there is no reason to make “stage” possessive; nothing belongs to it.

QUESTION 13

Choice A is the best answer because the conjunctive adverb “indeed” appropriately points back to and elaborates on the fact provided in the previous sentence (that the Tower has been leaning from the very beginning).

Choices B, C, and D are incorrect because they do not accurately present the relationship between the first and second sentences. Choice B, “therefore,” indicates that what follows is a consequence of what came before. Choice C, “nevertheless,” and choice D, “however,” suggest that what follows contrasts with what was stated previously.

QUESTION 14

Choice B is the best answer because the participle “attracting” introduces a dependent clause (“attracting . . . world”) that appropriately modifies the noun “icon.”

Choice A is incorrect because it creates a comma splice. A comma cannot be used without a conjunction to separate two independent clauses. Choice C is incorrect because the possessive pronoun “its” makes no sense in the context of the sentence. Choice D is incorrect because a semicolon is used to join two independent clauses, not an independent and a dependent clause.

QUESTION 15

Choice C is the best answer because it would be appropriate to characterize a famous and unusual building like the Tower of Pisa as “one of the greatest architectural oddities in the world.”

Choices A, B, and D are incorrect. The words “weirdnesses,” “deviations,” and “abnormalities” would all result in inappropriate characterizations. The Tower is a beloved icon and tourist magnet; as such, it is more fitting to describe it as an architectural oddity than as an architectural weirdness, architectural deviation, or architectural abnormality.

QUESTION 16

Choice B is the best answer because it confirms that the sentence should be added and provides the appropriate reason: it establishes a key shift in the passage between the introduction of the tower and the discussion of recent attempts to save it.

Choice A is incorrect because the suggested sentence does not repeat a previous idea. Choices C and D are incorrect because the sentence should be added. The suggested sentence does not contain irrelevant information that interrupts the flow of the paragraph, nor does it repeat information.

QUESTION 17

Choice A is the best answer because the comma is used correctly after the prepositional phrase "in 1990" to introduce the independent clause "Italy's government closed the tower. . . ."

Choices B and C are incorrect because each places a comma between the subject "government" and the verb "closed." Choice D is incorrect because a comma can be used, but not a colon, after an introductory prepositional phrase.

QUESTION 18

Choice C is the best answer because it supports the main point of the paragraph. The paragraph suggests that the committee's goal was to maintain the tower's "aesthetic" by reducing (but not eliminating) the tilt without ruining the tower's appearance or causing it to fall.

Choices A, B, and D are incorrect because none of the choices supports the main point of the paragraph—the need to both keep the tower from falling and maintain its charming appearance. Choice A repeats an idea from earlier in the passage. Choices B and D provide information that is only loosely related to the paragraph's discussion of efforts to save the tower.

QUESTION 19

Choice D is the best answer because deleting "he is" eliminates the comma splice that exists in the original sentence. Two independent clauses cannot be joined by only a comma.

Choice A is incorrect because two independent clauses cannot be joined by only a comma. Choice B is incorrect because it creates a comma splice and also needlessly repeats Burland's name. Choice C is incorrect because "his being" is unnecessary and unidiomatic in this context.

QUESTION 20

Choice D is the best answer because the earlier phrase “a years-long process” is sufficient to indicate that Burland’s work spanned several years.

Choices A, B, and C are incorrect because they all repeat information provided in the earlier phrase “a years-long process.”

QUESTION 21

Choice A is the best answer because the verb “advocated” and the participle “using” are appropriate in this context: “advocated” functions as the main verb and “using” introduces the clause that tells what Burland advocated.

Choices B and C are incorrect because they are unidiomatic. Choice D doesn’t provide a main verb necessary to create an independent clause before the semicolon.

QUESTION 22

Choice A is the best answer because sentence 5 introduces Burland’s plan for using gravity to straighten the tower—a plan that is presented in detail in the subsequent sentences 2, 3, and 4.

Choices B and C are incorrect because if sentence 5 were to be placed after either sentence 2 or sentence 3, the sequencing and logic of the paragraph would be impaired. Choice D is incorrect because if sentence 5 were to be deleted, a key aspect of the plan—its use of gravity to straighten the tower—would never be mentioned. The reader would then have to infer what Burland was doing by “drilling out small amounts of soil from under the tower.”

QUESTION 23

Choice B is the best answer because the main point of the paragraph is that the supply of physicians in the United States is not expected to keep up with the demand or need for them in the future. Choice B introduces the idea that it may become increasingly difficult for Americans to find a physician.

Choice A is not correct because it discusses “paramedics,” health care workers who are not mentioned elsewhere in the paragraph. Choice C is incorrect because it does not introduce the doctor shortage problem that is the main topic of the paragraph. Choice D is incorrect because the paragraph is not focused on the costs of health care.

QUESTION 24

Choice A is the best answer because “keep pace” is an appropriate idiomatic expression that clearly indicates the writer’s concern that the supply of doctors won’t be able to match the growing demand for them.

Choices B, C, and D are incorrect because they are unidiomatic in the context of the sentence. The sentence discusses the mismatch between the "increased demand for care" and the limited "supply of physicians." The writer is concerned with the extent to which supply can grow to meet the growth in demand—or, in other words, "keep pace" with increased demand. The phrases "maintain the tempo," "get in line," and "move along" are inappropriate to convey this idea.

QUESTION 25

Choice B is the best answer because "bolstering" means supporting, which is appropriate in the context of "medical-college enrollments." It makes sense in a discussion of a doctor shortage to mention the idea of providing support for enrollments—that is, maintaining and perhaps increasing the numbers of students enrolled in medical colleges.

Choices A and D are incorrect because they are excessively casual and unclear in context: it is not clear what it would mean for "medical-college enrollments" (the numbers of students enrolled in medical colleges) to be amped or revved up. Choice C is incorrect because it would be inappropriate to describe enrollments as being aroused.

QUESTION 26

Choice B is the best answer because it provides an appropriate reason for adding the sentence. In context, the sentence sets up the "several factors" that follow in the paragraph: the services that a PA can provide, the monetary advantages associated with employing a PA, and the short training period required for becoming a PA.

Choice A is incorrect because the sentence does not introduce a counterargument; rather, it supports the claim made in the previous sentence. Choices C and D are incorrect because the sentence should be added.

QUESTION 27

Choice C is the best answer because the plural possessive pronoun "their" correctly refers to its plural antecedent "PAs."

Choice A is incorrect because the word "there" does not show possession and does not make sense in the context of the sentence. Choice B is incorrect because the contraction "they're" does not show possession and does not make sense in the context of the sentence. Choice D is incorrect because the singular pronoun phrase "his or her" does not agree in number with the plural antecedent "PAs."

QUESTION 28

Choice D is the best answer because the comma is used correctly to separate the items in the list of jobs that PAs can perform.

Choice A is incorrect because a colon should not be used to separate items in a list. Choice B is incorrect because, while semicolons may be used to separate items in a list, they must be used consistently (that is, after "conditions" as well as after "surgeries"). Choice C is incorrect because a comma should not be used after the conjunction "and" in a list of items.

QUESTION 29

Choice B is the best answer because the parentheses are used correctly to enclose information that is interesting but not essential to the sentence. If the parenthetical information were to be deleted, the sentence would still make sense.

Choice A is incorrect because a comma or other punctuation is necessary to separate "well compensated" from the nonessential clause "earning in 2012 a median annual salary of $90,930." Choice C is incorrect because a comma is necessary after "$90,930" to set off the clause from the rest of the sentence. Choice D is incorrect because a colon is typically preceded by an independent clause and because a nonessential clause should be set off from the sentence by matching punctuation, such as two commas or parentheses.

QUESTION 30

Choice C is the best answer because "that for" agrees with the singular antecedent "period" and compares two similar things: the training period for PAs and that (the training period) for physicians.

Choice A is incorrect because the plural pronoun "those" doesn't agree with the singular antecedent "period." Choice B is incorrect because "compared with" repeats the idea of comparison already provided in the word "shorter." Choice D is incorrect because the underlined portion cannot be deleted without eliminating a necessary element in the comparison. A "training period" can't be compared to "physicians."

QUESTION 31

Choice A is the best answer because the transitional phrase "in addition" correctly introduces another example of PAs' "extraordinary contribution to rural health care."

Choices B, C, and D are incorrect because they do not convey the appropriate relationship between ideas. In choice B, "Thus" does not make sense because the claim that PAs "provide a broader spectrum of such services" is not a result or consequence of the claim that they provide "cost-efficient, widely appreciated services." Choices C and D, "despite this" and "on the other

hand," incorrectly indicate that the claim about the "broader spectrum of such services" is in contrast to the previous claim rather than in addition to it.

QUESTION 32

Choice C is the best answer because it gives an appropriate explanation for why the sentence should not be added. While relevant, the sentence does not accurately interpret the data in the table, which indicates that the number of physicians in 2025 will be 216,000 and the number of physician assistants will be 42,000.

Choices A and B are incorrect because the sentence incorrectly interprets the data in the table and should not be added. Choice D is incorrect because the sentence contains false information, not irrelevant information.

QUESTION 33

Choice D is the best answer because the word "patients" correctly identifies the people served by PAs. Additionally, the comparative conjunction "than" is used correctly in the comparison introduced by the adverb "more."

Choices A and B are incorrect because the noun "patience" refers to a human quality of tolerance or perseverance. It cannot be used to refer to people served by PAs. Choice C is incorrect because the word "then" refers to a time sequence or tells when something happened.

QUESTION 34

Choice B is the best answer because it most effectively combines the underlined sentences. The introductory dependent clause clearly and concisely sets up the comparison between the "rebooting" of films and the reworking of comic books. It also provides a clear and logical referent for the phrase "This practice" in the second sentence.

Choices A, C, and D are incorrect because the combinations do not connect the two sentences logically and concisely to demonstrate the comparison between the "rebooting" of films and the reworking of comic books. In addition, none provides a clear and logical referent for the phrase "This practice" in the second sentence.

QUESTION 35

Choice B is the best answer because the adjective "old" is used appropriately to describe a longstanding practice.

Choices A and D, “elderly” and “geriatric,” are incorrect in this context because they are generally used to refer to people, not to a practice. Choice C, “mature,” is incorrect because it does not fit the context of the sentence, which is about a longstanding practice, not a fully developed one.

QUESTION 36

Choice D is the best answer because no punctuation is needed to set off the prepositional phrase “of publishers.”

Choices A and B are incorrect because neither a colon nor a comma is needed to separate the noun “example” from the prepositional phrase that describes it. Choice C is incorrect because no comma is needed to separate the noun “publishers” from the participle “responding” that describes it.

QUESTION 37

Choice A is the best answer because the phrase “lift a car over his head” is consistent with the other examples of Superman’s superhuman physical abilities: “hurdle skyscrapers,” “leap an eighth of a mile,” etc.

Choices B, C, and D are incorrect because they are inconsistent with the other examples in the sentence of Superman’s superhuman physical abilities. Holding a job, wearing a costume, and living in a city describe the original Superman but do not characterize his physical abilities.

QUESTION 38

Choice D is the best answer because it most effectively sets up the following sentences, which describe the “realistic” nature of superheroes in the Silver Age. According to these sentences, Silver Age superheroes dealt with everyday problems and had richer interior lives and more complex motivations than their Golden Age counterparts.

Choices A, B, and C are incorrect because neither “scientific experiments gone wrong,” conservatism in the United States in the 1950s, nor the influence of science fiction on comics is addressed in the following two sentences.

QUESTION 39

Choice D is the best answer because it uses punctuation correctly. Because there is a dash between “them” and the verb “had,” another dash is required before “Spider-Man” to set off the nonessential clause “Spider-Man, the Fantastic Four, and the Hulk among them.” A

nonessential clause should be set off from the sentence by matching punctuation, such as two dashes or commas.

Choice A is incorrect because a colon needs to be preceded by an independent clause. Choice B is incorrect because, when used in this way, a semicolon needs to be preceded and followed by independent clauses. Choice C is incorrect because a comma and a dash cannot be used to enclose a nonessential clause. Two dashes or two commas should be used instead.

QUESTION 40

Choice C is the best answer because, as the only choice that focuses on Silver Age characters ("the upstarts"), it most logically completes the discussion of the Silver Age. It also provides an effective transition to the next paragraph: by indicating that "the Silver Age drew to a close," it sets up the next paragraph's discussion of the Bronze and other ages.

Choices A and D are incorrect because each focuses on Golden Age characters and thus fails to logically complete the discussion of the Silver Age. Choice B is incorrect because it prematurely discusses a topic that would be better addressed in the next paragraph.

QUESTION 41

Choice A is the best answer because the present perfect verb "have yielded" is used correctly to indicate that the action of the sentence began in the past and is ongoing in the present. In this case, the transformation of comics from the Silver Age to subsequent ages began in the past and continues today.

Choice B is incorrect because the verb "would have yielded" indicates that an action was possible but never happened. Choice C is incorrect because the past tense verb "were yielding" indicates that the action happened and ended in the past. Choice D is incorrect because the verb "will yield" means that the action will happen in the future, which is not necessarily true.

QUESTION 42

Choice D is the best answer because the possessive plural noun "Comics'" and adjective "superhero" appropriately indicate that the "superhero line" is a feature of the comics.

Choices A, B, and C are incorrect because the possessive singular noun "superhero's" is not correctly used in the sentence. Nothing belongs to a singular "superhero" in the sentence. Furthermore, in choice B, the singular possessive noun "Comic's" is used incorrectly since more than one comic is being referred to. In choice C, "Comics" is plural, but it needs to be possessive, too.

QUESTION 43

Choice A is the best answer because the conjunctive adverb “then” correctly shows that given previously stated information, the conclusion that can be drawn is that the transition between the Golden and Silver Ages of comic books was more successful than others.

Choices B, C, and D are incorrect because they do not indicate the correct relationship between the information presented earlier and conclusions that can be drawn from the information. “However,” “nevertheless,” and “yet” are ordinarily used to indicate that in spite of some action, a different or unexpected result occurs.

QUESTION 44

Choice C is the best answer because the singular pronoun “that” agrees in number with its singular antecedent “transition.”

Choices A and B are incorrect because the plural pronouns “those” and “these” do not agree with the singular antecedent “transition.” Additionally, choice B is incorrect because “these” implies that whatever is being referred to is at hand, not in the past. Choice D is incorrect because a pronoun is needed to complete the comparison of transitions between comic book ages.

Section 3: Math Test - No Calculator

QUESTION 1

Choice B is correct. The total amount T, in dollars, Salim will pay for n tickets is given by $T = 15n + 12$, which consists of both a per-ticket charge and a one-time service fee. Since n represents the number of tickets that Salim purchases, it follows that $15n$ represents the price, in dollars, of n tickets. Therefore, 15 must represent the per-ticket charge. At the same time, no matter how many tickets Salim purchases, he will be charged the $12 fee only once. Therefore, 12 must represent the amount of the service fee, in dollars.

Choice A is incorrect. Since n represents the total number of tickets that Salim purchases, it follows that $15n$ represents the price, in dollars, of n tickets, excluding the service fee. Therefore, 15, not 12, must represent the price of 1 ticket. Choice C is incorrect. If Salim purchases only 1 ticket, the total amount, in dollars, Salim will pay can be found by substituting $n = 1$ into the equation for T. If $n = 1$, $T = 15(1) + 12 = 27$. Therefore, the total amount Salim will pay for one ticket is $27, not $12. Choice D is incorrect. The total amount, in dollars, Salim will

pay for n tickets is given by $15n + 12$. The value 12 represents only a portion of this total amount. Therefore, the value 12 does not represent the total amount, in dollars, for any number of tickets.

QUESTION 2

Choice B is correct. Since Fertilizer A contains 60% filler materials by weight, it follows that x pounds of Fertilizer A consists of $0.6x$ pounds of filler materials. Similarly, y pounds of Fertilizer B consists of $0.4y$ pounds of filler materials. When x pounds of Fertilizer A and y pounds of Fertilizer B are combined, the result is 240 pounds of filler materials. Therefore, the total amount, in pounds, of filler materials in a mixture of x pounds of Fertilizer A and y pounds of Fertilizer B can be expressed as $0.6x + 0.4y = 240$.

Choice A is incorrect. This choice transposes the percentages of filler materials for Fertilizer A and Fertilizer B. Fertilizer A consists of $0.6x$ pounds of filler materials and Fertilizer B consists of $0.4y$ pounds of filler materials. Therefore, $0.6x + 0.4y$ is equal to 240, not $0.4x + 0.6y$. Choice C is incorrect. This choice incorrectly represents how to take the percentage of a value mathematically. Fertilizer A consists of $0.6x$ pounds of filler materials, not $60x$ pounds of filler materials, and Fertilizer B consists of $0.4y$ pounds of filler materials, not $40y$ pounds of filler materials. Choice D is incorrect. This choice transposes the percentages of filler materials for Fertilizer A and Fertilizer B and incorrectly represents how to take the percentage of a value mathematically.

QUESTION 3

Choice C is correct. For a complex number written in the form $a + bi$, a is called the real part of the complex number and b is called the imaginary part. The sum of two complex numbers, $a + bi$ and $c + di$, is found by adding real parts and imaginary parts, respectively; that is, $(a + bi) + (c + di) = (a + c) + (b + d)i$. Therefore, the sum of $2 + 3i$ and $4 + 8i$ is $(2 + 4) + (3 + 8)i = 6 + 11i$.

Choice A is incorrect and is the result of disregarding i and adding all parts of the two complex numbers together, $2 + 3 + 4 + 8 = 17$. Choice B is incorrect and is the result of adding all parts of the two complex numbers together and multiplying the sum by i. Choice D is incorrect and is the result of multiplying the real parts and imaginary parts of the two complex numbers, $(2)(4) = 8$ and $(3)(8) = 24$, instead of adding those parts together.

QUESTION 4

Choice A is correct. The right side of the equation can be multiplied using the distributive property: $(px + t)(px - t) = p^2x^2 - ptx + ptx - t^2$. Combining like terms gives $p^2x^2 - t^2$. Substituting this expression for the right side of the equation gives $4x^2 - 9 = p^2x^2 - t^2$, where p and t are

constants. This equation is true for all values of x only when $4 = p^2$ and $9 = t^2$. If $4 = p^2$, then $p = 2$ or $p = -2$. Therefore, of the given answer choices, only 2 could be the value of p.

Choices B, C, and D are incorrect. For the equation to be true for all values of x, the coefficients of x^2 on both sides of the equation must be equal; that is, $4 = p^2$. Therefore, the value of p cannot be 3, 4, or 9.

QUESTION 5

Choice D is correct. In the xy-plane, the graph of the equation $y = mx + b$, where m and b are constants, is a line with slope m and y-intercept $(0, b)$. Therefore, the graph of $y = 2x - 5$ in the xy-plane is a line with slope 2 and a y-intercept $(0, -5)$. Having a slope of 2 means that for each increase in x by 1, the value of y increases by 2. Only the graph in choice D has a slope of 2 and crosses the y-axis at $(0, -5)$. Therefore, the graph shown in choice D must be the correct answer.

Choices A, B, and C are incorrect. The graph of $y = 2x - 5$ in the xy-plane is a line with slope 2 and a y-intercept at $(0, -5)$. The graph in choice A crosses the y-axis at the point $(0, 2.5)$, not $(0, -5)$, and it has a slope of $\frac{1}{2}$, not 2. The graph in choice B crosses the y-axis at $(0, -5)$; however, the slope of this line is -2, not 2. The graph in choice C has a slope of 2; however, the graph crosses the y-axis at $(0, 5)$, not $(0, -5)$.

QUESTION 6

Choice A is correct. Substituting the given value of $y = 18$ into the equation $x = \frac{2}{3}y$ yields $x = \left(\frac{2}{3}\right)(18)$, or $x = 12$. The value of the expression $2x - 3$ when $x = 12$ is $2(12) - 3 = 21$.

Choice B is incorrect. If $2x - 3 = 15$, then adding 3 to both sides of the equation and then dividing both sides of the equation by 2 yields $x = 9$. Substituting 9 for x and 18 for y into the equation $x = \frac{2}{3}y$ yields $9 = \frac{2}{3}18 = 12$, which is false. Therefore, the value of $2x - 3$ cannot be 15. Choices C and D are also incorrect. As with choice B, assuming the value of $2x - 3$ is 12 or 10 will lead to a false statement.

QUESTION 7

Choice C is correct. By properties of multiplication, the formula $n = 7\ell h$ can be rewritten as $n = (7h)\ell$. To solve for ℓ in terms of *n* and *h*, divide both sides of the equation by the factor 7*h*. Solving this equation for ℓ gives $\ell = \frac{n}{7h}$.

Choices A, B, and D are incorrect and may result from algebraic errors when rewriting the given equation.

QUESTION 8

Choice B is correct. This question can be answered by making a connection between the table and the algebraic equation. Each row of the table gives a value of *x* and its corresponding values in both *w*(*x*) and *t*(*x*). For instance, the first row gives *x* = 1 and the corresponding values *w*(1) = −1 and *t*(1) = −3. The row in the table where *x* = 2 is the only row that has the property *x* = *w*(*x*) + *t*(*x*): 2 = 3 + (−1). Therefore, choice B is the correct answer.

Choice A is incorrect because when *x* = 1, the equation *w*(*x*) + *t*(*x*) = *x* is not true. According to the table, *w*(1) = −1 and *t*(1) = −3. Substituting the values of each term when *x* = 1 gives −1 + (−3) = 1, an equation that is not true. Choice C is incorrect because when *x* = 3, the equation *w*(*x*) + *t*(*x*) = *x* is not true. According to the table, *w*(3) = 4 and *t*(3) = 1. Substituting the values of each term when *x* = 3 gives 4 + 1 = 3, an equation that is not true. Choice D is incorrect because when *x* = 4, the equation *w*(*x*) + *t*(*x*) = *x* is not true. According to the table, *w*(4) = 3 and *t*(4) = 3. Substituting the values of each term when *x* = 4 gives 3 + 3 = 4, an equation that is not true.

QUESTION 9

Choice C is correct. The two numerical expressions in the given equation can be simplified as $\sqrt{9} = 3$ and $\sqrt{64} = 8$, so the equation can be rewritten as $\sqrt{x}$ + 3 = 8, or $\sqrt{x}$ = 5. Squaring both sides of the equation gives *x* = 25.

Choice A is incorrect and may result from a misconception about how to square both sides of $\sqrt{x}$ = 5 to determine the value of *x*. Choice B is incorrect. The value of $\sqrt{x}$, not *x*, is 5. Choice D is incorrect and represents a misconception about the properties of radicals. While it is true that 55 + 9 = 64, it is not true that $\sqrt{55} + \sqrt{9} = \sqrt{64}$.

QUESTION 10

Choice D is correct. Jaime's goal is to average at least 280 miles per week for 4 weeks. If *T* is the total number of miles Jamie will bicycle for 4 weeks, then his goal can be represented symbolically by the inequality: $\frac{T}{4} \geq 280$, or equivalently *T* ≥ 4(280). The total number of miles

Jamie will bicycle during this time is the sum of the distances he has completed and has yet to complete. Thus $T = 240 + 310 + 320 + x$. Substituting this expression into the inequality $T \geq 4(280)$ gives $240 + 310 + 320 + x \geq 4(280)$. Therefore, choice D is the correct answer.

Choices A, B, and C are incorrect because they do not correctly capture the relationships between the total number of miles Jaime will ride his bicycle ($240 + 310 + 320 + x$) and the minimum number of miles he is attempting to bicycle for the four weeks ($280 + 280 + 280 + 280$).

QUESTION 11

Choice B is correct. Since the shown parabola opens upward, the coefficient of x^2 in the equation $y = ax^2 + c$ must be positive. Given that a is positive, $-a$ is negative, and therefore the graph of the equation $y = -a(x - b)^2 + c$ will be a parabola that opens downward. The vertex of this parabola is (b, c), because the maximum value of y, c, is reached when $x = b$. Therefore, the answer must be choice B.

Choices A and C are incorrect. The coefficient of x^2 in the equation $y = -a(x - b)^2 + c$ is negative. Therefore, the parabola with this equation opens downward, not upward. Choice D is incorrect because the vertex of this parabola is (b, c), not $(-b, c)$, because the maximum value of y, c, is reached when $x = b$.

QUESTION 12

Choice D is correct. Dividing $4x^2 + 6x$ by $4x + 2$ gives:

$$\begin{array}{r} x + 1 \\ 4x + 2 \overline{)\,4x^2 + 6x} \\ -(4x + 2x) \\ \hline 4x \\ -(4x + 2) \\ \hline -2 \end{array}$$

Therefore, the expression $\frac{4x^2 + 6x}{4x + 2}$ is equivalent to $x + 1 - \frac{2}{4x + 2}$.

Alternate approach: The numerator of the given expression, $4x^2 + 6x$, can be rewritten in terms of the denominator, $4x + 2$, as follows: $4x^2 + 2x + 4x + 2 - 2$, or $x(4x + 2) + (4x + 2) - 2$. So the given expression can be rewritten as

$$\frac{x(4x+2)+(4x+2)-2}{4x+2} = x+1-\frac{2}{4x+2}.$$

Choices A and B are incorrect and may result from incorrectly factoring the numerator and denominator of the expression $\frac{4x^2 + 6x}{4x + 2}$ and then incorrectly identifying common factors in the two factored expressions. Choice C is incorrect and may result from a variety of mistakes made when performing long division.

QUESTION 13

Choice A is correct. The number of solutions to any quadratic equation in the form $ax^2 + bx + c = 0$, where a, b, and c are constants, can be found by evaluating the expression $b^2 - 4ac$, which is called the discriminant. If the value of $b^2 - 4ac$ is a positive number, then there will be exactly two real solutions to the equation. If the value of $b^2 - 4ac$ is zero, then there will be exactly one real solution to the equation. Finally, if the value of $b^2 - 4ac$ is negative, then there will be no real solutions to the equation.

The given equation $2x^2 - 4x = t$ is a quadratic equation in one variable, where t is a constant. Subtracting t from both sides of the equation gives $2x^2 - 4x - t = 0$. In this form, $a = 2$, $b = -4$, and $c = -t$. The values of t for which the equation has no real solutions are the same values of t for which the discriminant of this equation is a negative value. The discriminant is equal to $(-4)^2 - 4(2)(-t)$; therefore, $(-4)^2 - 4(2)(-t) < 0$. Simplifying the left side of the inequality gives $16 + 8t < 0$. Subtracting 16 from both sides of the inequality and then dividing both sides by 8 gives $t < -2$. Of the values given in the options, -3 is the only value that is less than -2. Therefore, choice A must be the correct answer.

Choices B, C, and D are incorrect and may result from a misconception about how to use the discriminant to determine the number of solutions of a quadratic equation in one variable.

QUESTION 14

Choice A is correct. The number of containers in a shipment must have a weight less than 300 pounds. The total weight, in pounds, of detergent and fabric softener that the supplier delivers can be expressed as the weight of each container multiplied by the number of each type of container, which is $7.35d$ for detergent and $6.2s$ for fabric softener. Since this total cannot exceed 300 pounds, it follows that $7.35d + 6.2s \leq 300$. Also, since the laundry service wants to buy at least twice as many containers of detergent as containers of fabric softener, the number of containers of detergent should be greater than or equal to two times the number of containers of fabric softener. This can be expressed by the inequality $d \geq 2s$.

Choice B is incorrect because it misrepresents the relationship between the numbers of each container that the laundry service wants to buy. Choice C is incorrect because the first inequality of the system incorrectly doubles the weight per container of detergent. The weight

of each container of detergent is 7.35, not 14.7 pounds. Choice D is incorrect because it doubles the weight per container of detergent and transposes the relationship between the numbers of containers.

QUESTION 15

Choice D is correct. The expression can be rewritten as $\left(a+\frac{b}{2}\right)\left(a+\frac{b}{2}\right)$. Using the distributive property, the expression yields $\left(a+\frac{b}{2}\right)\left(a+\frac{b}{2}\right)=a^2+\frac{ab}{2}+\frac{ab}{2}+\frac{b^2}{4}$. Combining like terms gives $a^2+ab+\frac{b^2}{4}$.

Choices A, B, and C are incorrect and may result from errors using the distributive property on the given expression or combining like terms.

QUESTION 16

The correct answers are 1, 2, 4, 8, or 16. Number 16 can be written in exponential form $a^{\frac{b}{4}}$, where *a* and *b* are positive integers as follows: 2^4, 4^2, 16^1, $\left(16^2\right)^{\frac{1}{2}}$, $\left(16^4\right)^{\frac{1}{4}}$. Hence, if $a^{\frac{b}{4}}=16$, where *a* and *b* are positive integers, then $\frac{b}{4}$ can be 4, 2, 1, $\frac{1}{2}$, or $\frac{1}{4}$. So the value of *b* can be 16, 8, 4, 2, or 1. Any of these values may be gridded as the correct answer.

QUESTION 17

The correct answer is $\frac{15}{4}$ or 3.75. Multiplying both sides of the equation $\frac{2}{3}t=\frac{5}{2}$ by $\frac{3}{2}$ results in $t=\frac{15}{4}$, or t = 3.75.

QUESTION 18

The correct answer is 30. In the figure given, since $\overline{BD}$ is parallel to $\overline{AE}$ and both segments are intersected by $\overline{CE}$, then angle *BDC* and angle *AEC* are corresponding angles and therefore congruent. Angle *BCD* and angle *ACE* are also congruent because they are the same angle. Triangle *BCD* and triangle *ACE* are similar because if two angles of one triangle are congruent to two angles of another triangle, the triangles are similar. Since triangle *BCD* and triangle *ACE* are similar, their corresponding sides are proportional. So in triangle *BCD* and triangle *ACE*, $\overline{BD}$ corresponds to $\overline{AE}$ and $\overline{CD}$ corresponds to $\overline{CE}$. Therefore, $\frac{BD}{CD}=\frac{AE}{CE}$. Since triangle *BCD* is a right triangle, the Pythagorean theorem can be used to give the value of *CD*: $6^2+8^2=CD^2$. Taking the square root of each side gives *CD* = 10. Substituting the values in the proportion $\frac{BD}{CD}=\frac{AE}{CE}$ yields

$\frac{6}{10} = \frac{18}{CE}$. Multiplying each side by *CE,* and then multiplying by $\frac{10}{6}$ yields *CE* = 30. Therefore, the length of $\overline{CE}$ is 30.

QUESTION 19

The correct answer is 1.5 or $\frac{3}{2}$. The total amount, in liters, of a saline solution can be expressed as the liters of each type of saline solution multiplied by the percent of the saline solution. This gives 3(0.10), *x*(0.25), and (*x* + 3)(0.15), where *x* is the amount, in liters, of a 25% saline solution and 10%, 15%, and 25% are represented as 0.10, 0.15, and 0.25, respectively. Thus, the equation 3(0.10) + 0.25*x* = 0.15(*x* + 3) must be true. Multiplying 3 by 0.10 and distributing 0.15 to (*x* + 3) yields 0.30 + 0.25*x* = 0.15*x* + 0.45. Subtracting 0.15*x* and 0.30 from each side of the equation gives 0.10*x* = 0.15. Dividing each side of the equation by 0.10 yields *x* = 1.5, or *x* = $\frac{3}{2}$.

QUESTION 20

The correct answer is $\frac{1}{6}$, .166, or .167. The circumference, *C*, of a circle is $C = 2\pi r$, where *r* is the radius of the circle. For the given circle with a radius of 1, the circumference is $C = 2(\pi)(1)$, or $C = 2\pi$. To find what fraction of the circumference the length of arc *AB* is, divide the length of the arc by the circumference, which gives $\frac{\pi}{3} \div 2\pi$. This division can be represented by $\frac{\pi}{3} \cdot \frac{1}{2\pi} = \frac{1}{6}$. The fraction $\frac{1}{6}$ can also be rewritten as .166 or .167.

Section 4: Math Test - Calculator

QUESTION 1

Choice A is correct. The given expression $(2x^2 - 4) - (-3x^2 + 2x - 7)$ can be rewritten as $2x^2 - 4 + 3x^2 - 2x + 7$. Combining like terms yields $5x^2 - 2x + 3$.

Choices B, C, and D are incorrect because they are the result of errors when applying the distributive property.

QUESTION 2

Choice C is correct. The lines shown on the graph give the positions of Paul and Mark during the race. At the start of the race, 0 seconds have elapsed, so the *y*-intercept of the line that represents Mark's position during the race represents the number of yards Mark was from Paul's position (at 0 yards) at the start of the race. Because the *y*-intercept of the line that

represents Mark's position is at the grid line that is halfway between 12 and 24, Mark had a head start of 18 yards.

Choices A, B, and D are incorrect. The *y*-intercept of the line that represents Mark's position shows that he was 18 yards from Paul's position at the start of the race, so he did not have a head start of 3, 12, or 24 yards.

QUESTION 3

Choice A is correct. The leftmost segment in choice A, which represents the first time period, shows that the snow accumulated at a certain rate; the middle segment, which represents the second time period, is horizontal, showing that the snow stopped accumulating; and the rightmost segment, which represents the third time period, is steeper than the first segment, indicating that the snow accumulated at a faster rate than it did during the first time period.

Choice B is incorrect. This graph shows snow accumulating faster during the first time period than during the third time period; however, the question says that the rate of snow accumulation in the third time period is higher than in the first time period. Choice C is incorrect. This graph shows snow accumulation increasing during the first time period, not accumulating during the second time period, and then decreasing during the third time period; however, the question says that no snow melted (accumulation did not decrease) during this time. Choice D is incorrect. This graph shows snow accumulating at a constant rate, not stopping for a period of time or accumulating at a faster rate during a third time period.

QUESTION 4

Choice D is correct. The equation $12d + 350 = 1{,}010$ can be used to determine d, the number of dollars charged per month. Subtracting 350 from both sides of this equation yields $12d = 660$, and then dividing both sides of the equation by 12 yields $d = 55$.

Choice A is incorrect. If d were equal to 25, the first 12 months would cost $350 + (12)(25) = 650$ dollars, not \$1,010. Choice B is incorrect. If d were equal to 35, the first 12 months would cost $350 + (12)(35) = 770$ dollars, not \$1,010. Choice C is incorrect. If d were equal to 45, the first 12 months would cost $350 + (12)(45) = 890$ dollars, not \$1,010.

QUESTION 5

Choice B is correct. Both sides of the given inequality can be divided by 3 to yield $2x - 3y > 4$.

Choices A, C, and D are incorrect because they are not equivalent to (do not have the same solution set as) the given inequality. For example, the ordered pair $(0, -1.5)$ is a solution to the given inequality, but it is not a solution to any of the inequalities in choices A, C, or D.

QUESTION 6

Choice C is correct. According to the table, 63% of survey respondents get most of their medical information from a doctor and 13% get most of their medical information from the Internet. Therefore, 76% of the 1,200 survey respondents get their information from either a doctor or the Internet, and 76% of 1,200 is 912.

Choices A, B, and D are incorrect. According to the table, 76% of survey respondents get their information from either a doctor or the Internet. Choice A is incorrect because 865 is about 72% (the percent of survey respondents who get most of their medical information from a doctor or from magazines/brochures), not 76%, of 1,200. Choice B is incorrect because 887 is about 74%, not 76%, of 1,200. Choice D is incorrect because 926 is about 77%, not 76%, of 1,200.

QUESTION 7

Choice D is correct. The members of the city council wanted to assess opinions of all city residents. To gather an unbiased sample, the council should have used a random sampling design to select subjects from all city residents. The given survey introduced a sampling bias because the 500 city residents surveyed were all dog owners. This sample is not representative of all city residents.

Choice A is incorrect because when the sampling method isn't random, there is no guarantee that the survey results will be reliable; hence, they cannot be generalized to the entire population. Choice B is incorrect because a larger sample size would not correct the sampling bias. Choice C is incorrect because a survey sample of non–dog owners would likely have a biased opinion, just as a sample of dog owners would likely have a biased opinion.

QUESTION 8

Choice D is correct. According to the table, 13 people chose vanilla ice cream. Of those people, 8 chose hot fudge as a topping. Therefore, of the people who chose vanilla ice cream, the fraction who chose hot fudge as a topping is $\frac{8}{13}$.

Choice A is incorrect because it represents the fraction of people at the party who chose hot fudge as a topping. Choice B is incorrect because it represents the fraction of people who chose vanilla ice cream with caramel as a topping. Choice C is incorrect because it represents the fraction of people at the party who chose vanilla ice cream.

QUESTION 9

Choice B is correct. The land area of the coastal city can be found by subtracting the area of the water from the total area of the coastal city; that is, 92.1 − 11.3 = 80.8 square miles. The population density is the population divided by the land area, or $\frac{621,000}{80.8} = 7,685$, which is closest to 7,690 people per square mile.

Choice A is incorrect and may be the result of dividing the population by the total area, instead of the land area. Choice C is incorrect and may be the result of dividing the population by the area of water. Choice D is incorrect and may be the result of making a computational error with the decimal place.

QUESTION 10

Choice B is correct. Let *x* represent the number of days the second voyage lasted. The number of days the first voyage lasted is then *x* + 43. Since the two voyages combined lasted a total of 1,003 days, the equation *x* + (*x* + 43) = 1,003 must hold. Combining like terms yields 2*x* + 43 = 1,003, and solving for *x* gives *x* = 480.

Choice A is incorrect because 460 + (460 + 43) = 963, not 1,003 days. Choice C is incorrect because 520 + (520 + 43) = 1,083, not 1,003 days. Choice D is incorrect because 540 + (540 + 43) = 1,123, not 1,003 days.

QUESTION 11

Choice B is correct. Adding the equations side-by-side eliminates *y*, as shown below.

$$\begin{aligned} 7x + 3y &= 8 \\ \underline{6x - 3y} &\underline{= 5} \\ 13x + 0 &= 13 \end{aligned}$$

Solving the obtained equation for *x* gives *x* = 1. Substituting 1 for *x* in the first equation gives 7(1) + 3*y* = 8. Subtracting 7 from both sides of the equation yields 3*y* = 1, so *y* = $\frac{1}{3}$. Therefore, the value of *x* − *y* is 1 − $\frac{1}{3}$, or $\frac{2}{3}$.

Choice C is incorrect because $1 + \frac{1}{3} = \frac{4}{3}$ is the value of *x* + *y*, not *x* − *y*. Choices A and D are incorrect and may be the result of some computational errors.

QUESTION 12

Choice D is correct. The average growth rate of the sunflower over a certain time period is the increase in height of the sunflower over the period divided by the time. Symbolically, this rate is $\frac{h(b)-h(a)}{b-a}$, where *a* and *b* are the first and the last day of the time period, respectively. Since the time period for each option is the same (21 days), the total growth over the period can be used to evaluate in which time period the sunflower grew the least. According to the graph, the sunflower grew the least over the period from day 63 to day 84. Therefore, the sunflower's average growth rate was the least from day 63 to day 84.

Alternate approach: The average growth rate of the sunflower over a certain time period is the slope of the line segment that joins the point on the graph at the beginning of the time period with the point on the graph at the end of the time period. Based on the graph, of the four time periods, the slope of the line segment is least between the sunflower's height on day 63 and its height on day 84.

Choices A, B, and C are incorrect. On the graph, the line segment from day 63 to 84 is less steep than each of the three other line segments representing other periods. Therefore, the average growth rate of the sunflower is the least from day 63 to 84.

QUESTION 13

Choice A is correct. Based on the definition and contextual interpretation of the function *h*, when the value of *t* increases by 1, the height of the sunflower increases by *a* centimeters. Therefore, *a* represents the predicted amount, in centimeters, by which the sunflower grows each day during the period the function models.

Choice B is incorrect. In the given model, the beginning of the period corresponds to $t = 0$, and since $h(0) = b$, the predicted height, in centimeters, of the sunflower at the beginning of the period is represented by *b*, not by *a*. Choice C is incorrect. If the period of time modeled by the function is *c* days long, then the predicted height, in centimeters, of the sunflower at the end of the period is represented by $ac + b$, not by *a*. Choice D is incorrect. If the period of time modeled by the function is *c* days long, the predicted total increase in the height of the sunflower, in centimeters, during that period is represented by the difference $h(c) - h(0) = (ac + b) - (a \cdot 0 + b)$, which is equivalent to *ac*, not *a*.

QUESTION 14

Choice B is correct. According to the table, the height of the sunflower is 36.36 cm on day 14 and 131.00 cm on day 35. Since the height of the sunflower between day 14 and day 35 changes at a nearly constant rate, the height of the sunflower increases by approximately

$\frac{131.00-36.36}{35-14} \approx 4.5$ cm per day. Therefore, the equation that models the height of the sunflower *t* days after it begins to grow is of the form *h* = 4.5*t* + *b*. Any ordered pair (*t*, *h*) from the table between day 14 and day 35 can be used to estimate the value of *b*. For example, substituting the ordered pair (14, 36.36) for (*t*, *h*) into the equation *h* = 4.5*t* + *b* gives 36.36 = 4.5(14) + *b*. Solving this for *b* yields *b* = −26.64. Therefore, of the given choices, the equation *h* = 4.5*t* − 27 best models the height *h*, in centimeters, of the sunflower *t* days after it begins to grow.

Choices A, C, and D are incorrect because the growth rates of the sunflower from day 14 to day 35 in these choices are significantly higher or lower than the true growth rate of the sunflower as shown in the graph or the table. These choices may result from considering time periods different from the period indicated in the question or from calculation errors.

QUESTION 15

Choice D is correct. According to the table, the value of *y* increases by $\frac{14}{4}=\frac{7}{2}$ every time the value of *x* increases by 1. It follows that the simplest equation relating *y* to *x* is linear and of the form $y=\frac{7}{2}x+b$ for some constant *b*. Furthermore, the ordered pair $\left(1,\frac{11}{4}\right)$ from the table must satisfy this equation. Substituting 1 for *x* and $\frac{11}{4}$ for *y* in the equation $y=\frac{7}{2}x+b$ gives $\frac{11}{4}=\frac{7}{2}(1)+b$. Solving this equation for *b* gives $b=-\frac{3}{4}$. Therefore, the equation in choice D correctly relates *y* to *x*.

Choices A and B are incorrect. The relationship between *x* and *y* cannot be exponential because the differences, not the ratios, of *y*-values are the same every time the *x*-values change by the same amount. Choice C is incorrect because the ordered pair $\left(2,\frac{25}{4}\right)$ is not a solution to the equation $y=\frac{3}{4}x+2$. Substituting 2 for *x* and $\frac{25}{4}$ for *y* in this equation gives $\frac{25}{4}=\frac{3}{2}+2$, which is false.

QUESTION 16

Choice B is correct. In right triangle *ABC*, the measure of angle *B* must be 58° because the sum of the measure of angle *A*, which is 32°, and the measure of angle *B* is 90°. Angle *D* in the right triangle *DEF* has measure 58°. Hence, triangles *ABC* and *DEF* are similar. Since *BC* is the side

opposite to the angle with measure 32° and *AB* is the hypotenuse in right triangle *ABC*, the ratio $\frac{BC}{AB}$ is equal to $\frac{DF}{DE}$.

Alternate approach: The trigonometric ratios can be used to answer this question. In right triangle *ABC*, the ratio $\frac{BC}{AB} = \sin(32°)$. The angle *E* in triangle *DEF* has measure 32° because $\text{m}(\angle D) + \text{m}(\angle E) = 90°$. In triangle *DEF*, the ratio $\frac{DF}{DE} = \sin(32°)$. Therefore, $\frac{DF}{DE} = \frac{BC}{AB}$.

Choice A is incorrect because $\frac{DE}{DF}$ is the inverse of the ratio $\frac{BC}{AB}$. Choice C is incorrect because $\frac{DF}{EF} = \frac{BC}{AC}$, not $\frac{BC}{AB}$. Choice D is incorrect because $\frac{EF}{DE} = \frac{AC}{AB}$, not $\frac{BC}{AB}$.

QUESTION 17

Choice B is correct. Isolating the term that contains the riser height, *h*, in the formula 2*h* + *d* = 25 gives 2*h* = 25 − *d*. Dividing both sides of this equation by 2 yields $h = \frac{25 - d}{2}$, or $h = \frac{1}{2}(25 - d)$.

Choices A, C, and D are incorrect and may result from incorrect transformations of the riser-tread formula 2*h* + *d* = 25 when expressing *h* in terms of *d*.

QUESTION 18

Choice C is correct. Since the tread depth, *d*, must be at least 9 inches, and the riser height, *h*, must be at least 5 inches, it follows that *d* ≥ 9 and *h* ≥ 5, respectively. Solving for *d* in the riser-tread formula 2*h* + *d* = 25 gives *d* = 25 − 2*h*. Thus the first inequality, *d* ≥ 9, is equivalent to 25 − 2*h* ≥ 9. This inequality can be solved for *h* as follows:

$$-2h \geq 9 - 25$$

$$2h \leq 25 - 9$$

$$2h \leq 16$$

$$h \leq 8$$

Therefore, the inequality $5 \le h \le 8$, derived from combining the inequalities $h \ge 5$ and $h \le 8$, represents the set of all possible values for the riser height that meets the code requirement.

Choice A is incorrect because the riser height, *h*, cannot be less than 5 inches. Choices B and D are incorrect because the riser height, *h*, cannot be greater than 8. For example, if $h = 10$, then according to the riser-tread formula $2h + d = 25$, it follows that $d = 5$ inches. However, *d* must be at least 9 inches according to the building codes, so *h* cannot be 10.

QUESTION 19

Choice C is correct. Let *h* be the riser height, in inches, and *n* be the number of the steps in the stairway. According to the architect's design, the total rise of the stairway is 9 feet, or $9 \times 12 = 108$ inches. Hence, $nh = 108$, and solving for *n* gives $n = \frac{108}{h}$. It is given that $7 < h < 8$. It follows that $\frac{108}{8} < \frac{108}{h} < \frac{108}{7}$, or equivalently, $\frac{108}{8} < n < \frac{108}{7}$. Since $\frac{108}{8} < 14$ and $\frac{108}{7} > 15$ and *n* is an integer, it follows that $14 \le n \le 15$. Since *n* can be an odd number, *n* can only be 15; therefore, $h = \frac{108}{15} = 7.2$ inches. Substituting 7.2 for *h* in the riser-tread formula $2h + d = 25$ gives $14.4 + d = 25$. Solving for *d* gives $d = 10.6$ inches.

Choice A is incorrect because 7.2 inches is the riser height, not the tread depth of the stairs. Choice B is incorrect and may be the result of calculation errors. Choice D is incorrect because 15 is the number of steps, not the tread depth of the stairs.

QUESTION 20

Choice C is correct. Since the product of $x - 6$ and $x + 0.7$ equals 0, by the zero product property either $x - 6 = 0$ or $x + 0.7 = 0$. Therefore, the solutions to the equation are 6 and −0.7. The sum of 6 and −0.7 is 5.3.

Choice A is incorrect and is the result of subtracting 6 from −0.7 instead of adding. Choice B is incorrect and may be the result of erroneously calculating the sum of −6 and 0.7 instead of 6 and −0.7. Choice D is incorrect and is the sum of 6 and 0.7, not 6 and −0.7.

QUESTION 21

Choice D is correct. The sample of 150 largemouth bass was selected at random from all the largemouth bass in the pond, and since 30% of them weighed more than 2 pounds, it can be concluded that approximately 30% of all largemouth bass in the pond weigh more than 2 pounds.

Choices A, B, and C are incorrect. Since the sample contained 150 largemouth bass, of which 30% weighed more than 2 pounds, the largest population to which this result can be generalized is the population of the largemouth bass in the pond.

QUESTION 22

Choice B is correct. The median of a list of numbers is the middle value when the numbers are listed in order from least to greatest. For the electoral votes shown in the table, their frequency should also be taken into account. Since there are 21 states represented in the table, the middle number will be the eleventh number in the ordered list. Counting the frequencies from the top of the table (4 + 4 + 1 + 1 + 3 = 13) shows that the median number of electoral votes for the 21 states is 15.

Choice A is incorrect. If the electoral votes are ordered from least to greatest taking into account the frequency, 13 will be in the tenth position, not the middle. Choice C is incorrect because 17 is in the fourteenth position, not in the middle, of the ordered list. D is incorrect because 20 is in the fifteenth position, not in the middle, of the ordered list.

QUESTION 23

Choice C is correct. Since the graph shows the height of the ball above the ground after it was dropped, the number of times the ball was at a height of 2 feet is equal to the number of times the graph crosses the horizontal grid line that corresponds to a height of 2 feet. The graph crosses this grid line three times.

Choices A, B, and D are incorrect. According to the graph, the ball was at a height of 2 feet three times, not one, two, or four times.

QUESTION 24

Choice D is correct. To find the percent increase of the customer's water bill, the absolute increase of the bill, in dollars, is divided by the original amount of the bill, and the result is multiplied by 100%, as follows: $\frac{79.86 - 75.74}{75.74} \approx 0.054$; $0.054 \times 100\% = 5.4\%$.

Choice A is incorrect. This choice is the difference 79.86 − 75.74 rounded to the nearest tenth, which is the (absolute) increase of the bill's amount, not its percent increase. Choice B is incorrect and may be the result of some calculation errors. Choice C is incorrect and is the result of dividing the difference between the two bill amounts by the new bill amount instead of the original bill amount.

QUESTION 25

Choice B is correct. A linear function has a constant rate of change, and any two rows of the shown table can be used to calculate this rate. From the first row to the second, the value of x is increased by 2 and the value of $f(x)$ is increased by $6 = 4 - (-2)$. So the values of $f(x)$ increase by 3 for every increase by 1 in the value of x. Since $f(2) = 4$, it follows that $f(2 + 1) = 4 + 3 = 7$. Therefore, $f(3) = 7$.

Choice A is incorrect. This is the third x-value in the table, not $f(3)$. Choices C and D are incorrect and may result from errors when calculating the function's rate of change.

QUESTION 26

Choice C is correct. Since Gear A has 20 teeth and Gear B has 60 teeth, the gear ratio for Gears A and B is 20:60. Thus the ratio of the number of revolutions per minute (rpm) for the two gears is 60:20, or 3:1. That is, when Gear A turns at 3 rpm, Gear B turns at 1 rpm. Similarly, since Gear B has 60 teeth and Gear C has 10 teeth, the gear ratio for Gears B and C is 60:10, and the ratio of the rpms for the two gears is 10:60. That is, when Gear B turns at 1 rpm, Gear C turns at 6 rpm. Therefore, if Gear A turns at 100 rpm, then Gear B turns at $\frac{100}{3}$ rpm, and Gear C turns at $\frac{100}{3} \times 6 = 200$ rpm.

Alternate approach: Gear A and Gear C can be considered as directly connected since their "contact" speeds are the same. Gear A has twice as many teeth as Gear C, and since the ratios of the number of teeth are equal to the reverse of the ratios of rotation speeds, in rpm, Gear C would be rotated at a rate that is twice the rate of Gear A. Therefore, Gear C will be rotated at a rate of 200 rpm since Gear A is rotated at 100 rpm.

Choice A is incorrect and may result from using the gear ratio instead of the ratio of the rpm when calculating the rotational speed of Gear C. Choice B is incorrect and may result from comparing the rpm of the gears using addition instead of multiplication. Choice D is incorrect and may be the result of multiplying the 100 rpm for Gear A by the number of teeth in Gear C.

QUESTION 27

Choice A is correct. One way to find the radius of the circle is to put the given equation in standard form, $(x - h)^2 + (y - k)^2 = r^2$, where (h, k) is the center of the circle and the radius of the circle is r. To do this, divide the original equation, $2x^2 - 6x + 2y^2 + 2y = 45$, by 2 to make the leading coefficients of x^2 and y^2 each equal to 1: $x^2 - 3x + y^2 + y = 22.5$. Then complete the square to put the equation in standard form. To do so, first rewrite $x^2 - 3x + y^2 + y = 22.5$ as $(x^2 - 3x + 2.25) - 2.25 + (y^2 + y + 0.25) - 0.25 = 22.5$. Second, add 2.25 and 0.25 to both sides of the equation: $(x^2 - 3x + 2.25) + (y^2 + y + 0.25) = 25$. Since $x^2 - 3x + 2.25 = (x - 1.5)^2$, $y^2 - x + 0.25 = (y$

$-0.5)^2$, and $25 = 5^2$, it follows that $(x - 1.5)^2 + (y - 0.5)^2 = 5^2$. Therefore, the radius of the circle is 5.

Choices B, C, and D are incorrect and may be the result of errors in manipulating the equation or of a misconception about the standard form of the equation of a circle in the *xy*-plane.

QUESTION 28

Choice A is correct. The coordinates of the points at a distance *d* units from the point with coordinate *a* on the number line are the solutions to the equation $|x - a| = d$. Therefore, the coordinates of the points at a distance of 3 units from the point with coordinate −4 on the number line are the solutions to the equation $|x - (-4)| = 3$, which is equivalent to $|x + 4| = 3$.

Choice B is incorrect. The solutions of $|x - 4| = 3$ are the coordinates of the points on the number line at a distance of 3 units from the point with coordinate 4. Choice C is incorrect. The solutions of $|x + 3| = 4$ are the coordinates of the points on the number line at a distance of 4 units from the point with coordinate −3. Choice D is incorrect. The solutions of $|x - 3| = 4$ are the coordinates of the points on the number line at a distance of 4 units from the point with coordinate 3.

QUESTION 29

Choice B is correct. The average speed of the model car is found by dividing the total distance traveled by the car by the total time the car traveled. In the first *t* seconds after the car starts, the time changes from 0 to *t* seconds. So the total distance the car traveled is the distance it traveled at *t* seconds minus the distance it traveled at 0 seconds. At 0 seconds, the car has traveled $16(0)\sqrt{0}$ inches, which is equal to 0 inches. According to the equation given, after *t* seconds, the car has traveled $16t\sqrt{t}$ inches. In other words, after the car starts, it travels a total of $16t\sqrt{t}$ inches in *t* seconds. Dividing this total distance traveled by the total time shows the car's average speed: $\frac{16t\sqrt{t}}{t} = 16\sqrt{t}$ inches per second.

Choices A, C, and D are incorrect and may result from misconceptions about how average speed is calculated.

QUESTION 30

Choice D is correct. The data in the scatterplot roughly fall in the shape of a downward-opening parabola; therefore, the coefficient for the x^2 term must be negative. Based on the location of

the data points, the *y*-intercept of the parabola should be somewhere between 740 and 760. Therefore, of the equations given, the best model is $y = -1.674x^2 + 19.76x + 745.73$.

Choices A and C are incorrect. The positive coefficient of the x^2 term means that these these equations each define upward-opening parabolas, whereas a parabola that fits the data in the scatterplot must open downward. Choice B is incorrect because it defines a parabola with a *y*-intercept that has a negative *y*-coordinate, whereas a parabola that fits the data in the scatterplot must have a *y*-intercept with a positive *y*-coordinate.

QUESTION 31

The correct answer is 10. Let n be the number of friends originally in the group. Since the cost of the trip was \$800, the share, in dollars, for each friend was originally $\frac{800}{n}$. When two friends decided not to go on the trip, the number of friends who split the \$800 cost became $n - 2$, and each friend's cost became $\frac{800}{n-2}$. Since this share represented a \$20 increase over the original share, the equation $\frac{800}{n} + 20 = \frac{800}{n-2}$ must be true. Multiplying each side of $\frac{800}{n} + 20 = \frac{800}{n-2}$ by $n(n - 2)$ to clear all the denominators gives

$$800(n - 2) + 20n(n - 2) = 800n$$

This is a quadratic equation and can be rewritten in the standard form by expanding, simplifying, and then collecting like terms on one side, as shown below:

$$800n - 1600 + 20n^2 - 40n = 800n$$

$$40n - 80 + n^2 - 2n = 40n$$

$$n^2 - 2n - 80 = 0$$

After factoring, this becomes $(n + 8)(n - 10) = 0$.

The solutions of this equation are −8 and 10. Since a negative solution makes no sense for the number of people in a group, the number of friends originally in the group was 10.

QUESTION 32

The correct answer is 31. The equation can be solved using the steps shown below.

$2(5x - 20) - 15 - 8x = 7$

$2(5x) - 2(20) - 15 - 8x = 7$ (Apply the distributive property.)

$10x - 40 - 15 - 8x = 7$ (Multiply.)

$2x - 55 = 7$ (Combine like terms.)

$2x = 62$ (Add 55 to both sides of the equation.)

$x = 31$ (Divide both sides of the equation by 2.)

QUESTION 33

The possible correct answers are 97, 98, 99, 100, and 101. The volume of a cylinder can be found by using the formula $V = \pi r^2 h$, where r is the radius of the circular base and h is the height of the cylinder. The smallest possible volume, in cubic inches, of a graduated cylinder produced by the laboratory supply company can be found by substituting 2 for r and 7.75 for h, giving $V = \pi(2^2)(7.75)$. This gives a volume of approximately 97.39 cubic inches, which rounds to 97 cubic inches. The largest possible volume, in cubic inches, can be found by substituting 2 for r and 8 for h, giving $V = \pi(2^2)(8)$. This gives a volume of approximately 100.53 cubic inches, which rounds to 101 cubic inches. Therefore, the possible volumes are all the integers greater than or equal to 97 and less than or equal to 101, which are 97, 98, 99, 100, and 101. Any of these numbers may be gridded as the correct answer.

QUESTION 34

The correct answer is 5. The intersection points of the graphs of $y = 3x^2 - 14x$ and $y = x$ can be found by solving the system consisting of these two equations. To solve the system, substitute x for y in the first equation. This gives $x = 3x^2 - 14x$. Subtracting x from both sides of the equation gives $0 = 3x^2 - 15x$. Factoring $3x$ out of each term on the left-hand side of the equation gives $0 = 3x(x - 5)$. Therefore, the possible values for x are 0 and 5. Since $y = x$, the two intersection points are (0, 0) and (5, 5). Therefore, $a = 5$.

QUESTION 35

The correct answer is 1.25 or $\frac{5}{4}$. The y-coordinate of the x-intercept is 0, so 0 can be substituted for y, giving $\frac{4}{5}x + \frac{1}{3}(0) = 1$. This simplifies to $\frac{4}{5}x = 1$. Multiplying both sides of $\frac{4}{5}x$

= 1 by 5 gives $4x = 5$. Dividing both sides of $4x = 5$ by 4 gives $x = \frac{5}{4}$, which is equivalent to 1.25. Either 5/4 or 1.25 may be gridded as the correct answer.

QUESTION 36

The correct answer is 2.6 or $\frac{13}{5}$. Since the mean of a set of numbers can be found by adding the numbers together and dividing by how many numbers there are in the set, the mean mass, in kilograms, of the rocks Andrew collected is $\frac{2.4+2.5+3.6+3.1+2.5+2.7}{6} = \frac{16.8}{6} = 2.8$. Since the mean mass of the rocks Maria collected is 0.1 kilogram greater than the mean mass of rocks Andrew collected, the mean mass of the rocks Maria collected is 2.8 + 0.1 = 2.9 kilograms. The value of x can be found by using the algorithm for finding the mean: $\frac{x+3.1+2.7+2.9+3.3+2.8}{6} = 2.9$. Solving this equation gives $x = 2.6$, which is equivalent to $\frac{13}{5}$. Either 2.6 or 13/5 may be gridded as the correct answer.

QUESTION 37

The correct answer is 30. The situation can be represented by the equation $x(2^4) = 480$, where the 2 represents the fact that the amount of money in the account doubled each year and the 4 represents the fact that there are 4 years between January 1, 2001, and January 1, 2005. Simplifying $x(2^4) = 480$ gives $16x = 480$. Therefore, $x = 30$.

QUESTION 38

The correct answer is 8. The 6 students represent (100 − 15 − 45 − 25)% = 15% of those invited to join the committee. If x people were invited to join the committee, then $0.15x = 6$. Thus, there were $\frac{6}{0.15} = 40$ people invited to join the committee. It follows that there were 0.45(40) = 18 teachers and 0.25(40) = 10 school and district administrators invited to join the committee. Therefore, there were 8 more teachers than school and district administrators invited to join the committee.