



Chapter 18

Practice Test 8: Answers and Explanations

PRACTICE TEST 8 ANSWER KEY

Section 1: Reading		Section 2: Writing & Language		Section 3: Math (No Calculator)		Section 4: Math (Calculator)	
1. C	27. C	1. C	23. B	1. A	11. B	1. C	20. C
2. D	28. B	2. B	24. C	2. A	12. C	2. D	21. A
3. C	29. A	3. A	25. C	3. D	13. C	3. B	22. B
4. A	30. B	4. D	26. B	4. D	14. D	4. A	23. C
5. B	31. A	5. D	27. B	5. B	15. C	5. C	24. D
6. A	32. C	6. B	28. A	6. A	16. 16	6. D	25. C
7. D	33. C	7. D	29. D	7. A	17. 1, 2, 3, 4, 6, or 12	7. B	26. D
8. B	34. B	8. B	30. A	8. B	18. $\frac{1}{24}$, .041, or .042	8. C	27. A
9. D	35. A	9. A	31. A	9. D	19. $\frac{49}{8}$, 6.12, or 6.13	9. C	28. D
10. B	36. D	10. A	32. D	10. A	20. $\frac{5}{2}$ or 2.5	10. A	29. A
11. C	37. D	11. D	33. D			11. B	30. B
12. A	38. B	12. B	34. D			12. C	31. 247, 248, 249, 250, or 251
13. C	39. C	13. B	35. B			13. A	
14. A	40. C	14. D	36. C			14. D	
15. D	41. D	15. A	37. C			15. A	
16. B	42. A	16. A	38. B			16. B	
17. C	43. D	17. C	39. D			17. B	32. 8
18. D	44. D	18. B	40. B			18. B	33. 11
19. C	45. C	19. C	41. C			19. A	34. $\frac{6}{5}$ or 1.2
20. B	46. B	20. D	42. B				35. 5.8
21. D	47. C	21. C	43. A				36. 6
22. C	48. D	22. D	44. A				37. 750
23. A	49. D						38. 20
24. D	50. A						
25. D	51. A						
26. D	52. C						

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PRACTICE TEST 8 EXPLANATIONS

Section 1: Reading

1. **C** The question asks why the author uses the image of the *waters of the Jordan*. Use the given line reference to find the window and read carefully. The answer should come from a window of approximately lines 1–10. The passage states that *The ever-increasing current of Christmas shoppers flowed on. Now and then it rolled up, like the waters of the Jordan*. The image is used to describe the movement of the crowd. Find an answer that matches this prediction. Choice (A) includes the word *never*, which is extreme language. The passage does not suggest that the crowd *will never ebb*. Eliminate (A). Choice (B) can be eliminated because there is no indication in the passage that *the little woman was drowning in the throng*. Choice (C) matches the prediction, so hang on to it. The image of the *waters of Jordan* is used to describe the movement of the crowd, not the movements of one person. Eliminate (D). The correct answer is (C).
2. **D** The question asks what the word *caught* means in line 16. Go back to the text, find the word *caught*, and mark it out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. The text says the woman *caught the scent of fresh-cut flowers*. In other words, the woman “became aware of” the scent. Find an answer that means something similar to becoming aware of. The only answer that matches this meaning is (D). The other answers might initially look attractive because they all relate to the word “caught,” but none of the other three answers match the context of the passage. The correct answer is (D).
3. **C** The question asks about supporting the claim that *the shabby little woman was at first excited by the tall young girl*. Use the line references in the answer choices. The lines for (A) state that the shabby little woman *caught the scent of fresh-cut flowers and looked up into the eyes of a tall young girl in a white-plumed velvet hat, with a bunch of English violets in her brown mink fur*. These lines are an objective description of the young girl. There is no indication in these lines of how the woman feels. Eliminate (A). The lines for (B) state that *As their glances met, the shabby little woman checked a start, and half-defensively dropped her lids*. This description of the woman notes that she is startled and somewhat defensive. However, the question asks which lines show that the woman was excited. Eliminate (B). The lines for (C) state that *the thrill of response that set the woman’s pulses throbbing died suddenly*. The phrase *thrill of response that set the woman’s pulses throbbing* indicates that the woman was initially excited. Keep (C). The lines for (D) describe how the woman saw herself. These lines do not relate to how the woman felt at meeting the tall young girl. Eliminate (D). The correct answer is (C).
4. **A** The question asks why the woman invites the visitor to come in. Use chronology to find the answer. The answer to question 3 was in the third paragraph, and the line reference for question 5 is in the seventh paragraph. Therefore, scan between the third and seventh paragraph for a description of the woman inviting a visitor. The fifth paragraph provides the following description. “*Come in,*” *invited the woman, expecting some famine-pressed neighbor for a spoonful of coffee or a drawing of tea*. Look for an answer that matches the idea of the woman *expecting* someone in need. Choice (A) matches that idea, so keep it. Choice (B) can be eliminated because, though she does invite this person in, there’s no evidence that the woman allows everyone in. Eliminate (C) because there is no indication that the woman expected *the young girl to drop by*. The passage also does not suggest that the woman *cannot see*, so eliminate (D). The correct answer is (A).

5. **B** The question asks about the purpose of the girl's comments in lines 51–58. The passage describes the young girl as saying “*I’ve such a silly excuse for coming.... I noticed you had a rare fur-piece... and I want to ask a very great favor of you. Now please don’t be shocked—I’ve been ransacking the city for something like it, and...I should like to buy it of you.*” Find an answer that matches the idea of the girl explaining why she has come to the apartment. Choice (A) can be eliminated: while the girl seeks to persuade the woman to sell her the fur, there is no indication that she wants a *discount*. Choice (B) is a solid paraphrase of the prediction, so keep it. The girl is not laughing at the shabby woman, nor does she demand *the shabby woman surrender her wrap*, so (C) and (D) can both be eliminated. The correct answer is (B).
6. **A** The question asks why the girl uses the word *ransacking*. In the passage, the young girl says “*I noticed you had a rare fur-piece...and I want to ask a very great favor of you. Now please don’t be shocked—I’ve been ransacking the city for something like it, and...I should like to buy it of you.*” In context, *ransacking the city* means that the girl has been looking everywhere in the city for a similar rare fur piece. Find an answer that matches this prediction. Only (A) matches the context of the passage. The girl has searched everywhere in the city for the same fur piece, so her search can be described as *comprehensive*. The correct answer is (A).
7. **D** The question asks why *the shabby woman initially declines to sell the fur*. In lines 72–73, the woman first expresses confusion about the girl’s request, but then says, “*I can’t, it ain’t worth....*” The woman doesn’t think the fur is worth anything. Eliminate (A) because the question asks about the woman’s thoughts, not the young girl’s. Choice (B) has nothing to do with the passage, so eliminate it. Choice (C) does mention the worth of the piece, but there is no discussion about the actual price. Eliminate (C). Choice (D) is a solid paraphrase of the prediction. The correct answer is (D).
8. **B** The question asks for the best evidence for the answer to the previous question. Lines 72–73 were used to answer Q8. The correct answer is (B).
9. **D** The question asks how the shabby woman felt after the girl’s departure. Use chronology to find the answer. The answer to question 8 came from lines 72–73. Start reading after these lines to find how the woman felt. According to the passage, *As she sat huddled on the cot, warmth and vitality glowed within her, kindled by the memory of a recent kindly human touch.* Find an answer that is consistent with that prediction. The only answer that matches the positive feeling that the woman has after the young girl leaves is (D), *warmth*. The correct answer is (D).
10. **B** This question asks what the purpose of the last paragraph is. According to the last paragraph, *It was unusual to sell expensive furs to such a customer. But...[i]n this case, the shabby little woman was prepared. She produced three crisp ten-dollar bills...and two dollars more from the savings in her worn little purse.* Find an answer that matches the idea of the purchase being different than what normally happened. Choice (A) is a detail. Although the first sentence of the paragraph states that *it was unusual to sell expensive furs to such a customer*, this is not the purpose of the paragraph as a whole. Eliminate (A). Choice (B) matches the prediction, so keep it. Choice (C) uses extreme language. While the last paragraph describes the shabby woman as *triumphantly* leaving the store, there is no indication in the passage that the purchase was the shabby woman’s *greatest triumph*. Eliminate (C). Choice (D) does not match the prediction. According to the passage, the sale of the furs to the shabby woman is described as *unusual*. Therefore, the last paragraph does not illustrate how servants go *Christmas shopping*. Eliminate (D). The correct answer is (B).
11. **C** The question asks for a point *von Mises makes about socialism relative to capitalism* in Passage 1. Notice that the following question is a best evidence question, so this question and Q12 can be answered in tandem. Look at the answers for Q12 first. The lines in (12A) mention *present-day*

social and political conflicts and *the socialist state*. Although these lines don't directly mention capitalism, the first sentence of the third paragraph references *the antagonism between socialism and capitalism*, and the blurb states that *von Mises spoke...in favor of capitalism*, which indicates that the *social and political conflicts* are between socialism and capitalism. Look to see whether these lines support any of the answers in Q11. They support (11C): these lines state that surrendering to *the socialist state* means giving up *freedom* and *private initiative*, which supports the claim that *socialism oppresses self-motivation, but capitalism allows individuals to retain their liberties*. Connect these two answers. Next, look at the lines in (12B). These lines don't compare capitalism and socialism, so eliminate (12B). The lines in (12C) mention socialism, but they don't compare it with capitalism, so eliminate (12C). The lines for (12D) also mention socialism, but don't compare it with capitalism, so eliminate (12D). Without support from Q12, (11A), (11B), and (11D) can be eliminated. The correct answers are (11C) and (12A).

12. A (See explanation above.)
13. C The question asks what the word *advance* means in line 13. Go back to the text, find the word *advance*, and mark it out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. The second paragraph states, *Our age has witnessed a triumphal advance of the socialist cause. As much as half a century ago an eminent British statesman, Sir William Harcourt, asserted: "We are all socialists now."* The correct answer should mean something like "increase" or "furthering." Eliminate (A) because *upgrade* means "improvement," not "increase." Although a *breakthrough* could be related to an *advance*, the context of the passage indicates that socialism is continuously expanding, not "suddenly advancing." Eliminate (B). Keep (C) because *progress* is consistent with "increase." Eliminate (D) because there is no indication of any *deposit* being made. The correct answer is (C).
14. A The question asks for Einstein's central claim in Passage 2. Because this is a general question, it should be answered after all the specific questions about Passage 2. Einstein says that the *economic anarchy of capitalist society...is...the real source of the evil*. He describes it as *a huge community of producers...unceasingly striving to deprive each other of the fruits of their collective labor*. He goes on to explain how *capital tends to become concentrated in few hands... which results in an oligarchy of private capital...which cannot be effectively checked even by a democratically organized political society*. Eliminate any answers that aren't consistent with the idea of capitalism causing an unequal distribution of resources and power. Choice (A) is a clear paraphrase of the prediction, so keep it. Eliminate (B) because Einstein does not make an argument that the *economic success of a society depends on the ability of citizens to make their own decisions*. Eliminate (C) because Einstein does not mention *initiative and creativity*. Eliminate (D) because Passage 2 discusses *disadvantages* of capitalism and *merits* of socialism; it does not argue that *different economic systems should be considered carefully*. The correct answer is (A).
15. D The question asks what the word *fruits* means in line 36. Go back to the text, find the word *fruits*, and mark it out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. The first paragraph discusses producers who *are unceasingly striving to deprive each other of the fruits of their collective labor*. The correct answer should mean something like "products" or "results." Eliminate (A) because, although *produce* is another word for *fruits*, that definition is not consistent with this context. Eliminate (B), *consequences*, because the *fruits* in the text are intentionally produced and are not negative outcomes of decisions. Eliminate (C), *byproducts*, because the *fruits* are the intended outcome, not "secondary or incidental products." Keep (D) because *output* is consistent with "products." The correct answer is (D).

16. **B** The question asks what *Einstein implies* about *an educational system that fosters extreme competition over social goals* in Passage 2. Look for the lead words *educational system* in the passage. In the second paragraph, Einstein argues that the *whole educational system suffers from this evil. An exaggerated competitive attitude is inculcated into the student, who is trained to worship acquisitive success as a preparation for his future career.* He explains that the problem with those values is that they make it *quite impossible...for the individual citizen to come to objective conclusions and to make intelligent use of his political rights.* Eliminate any answers that aren't consistent with this idea. Choice (A) can be eliminated because there is no indication that an education system that fosters competition *appears beneficial.* Keep (B); such an education system does *limit the ability of individuals to exercise their rights.* Eliminate (C) because the education system is not mentioned as the cause of heightened *differences between social classes.* Eliminate (D) because the passage says that the educational system cripples individuals; therefore, it does not prepare *the next generation for success.* The correct answer is (B).
17. **C** The question asks for a point that Einstein makes *about an improperly attempted socialist economy* in Passage 2. Notice that the following question is a best evidence question, so this question and Q18 can be answered in tandem. Look at the answers for Q18 first. The lines in (18A) do not reference an *improperly attempted socialist economy*, so eliminate (18A). The lines in (18B) do not reference an *improperly attempted socialist economy*, so eliminate (18B). The lines in (18C) do not reference an *improperly attempted socialist economy*, so eliminate (18C). The lines in (18D) come from the fourth paragraph, which states, *Nevertheless, it is necessary to remember that a planned economy is not yet socialism. A planned economy as such may be accompanied by the complete enslavement of the individual.* Look to see whether these lines support any of the answers for Q17. They support (17C): the phrase *could permit the destruction of free choice* is a paraphrase of *may be accompanied by the complete enslavement of the individual.* Connect these two answers. Without support from Q18, (17A), (17B), and (17D) can be eliminated. The correct answers are (17C) and (18D).
18. **D** (See explanation above.)
19. **C** The question asks for *the relationship between the two passages.* Since the question is about both passages, it should be done after the questions that ask about the passages individually. Both passages take a position on the choice of socialism versus capitalism. Passage 1 favors capitalism, stating that the *main issue in present-day social and political conflicts is whether or not man should give away freedom, private initiative, and individual responsibility and surrender to the guardianship of a gigantic apparatus of compulsion and coercion, the socialist state.* Einstein argues against capitalism in Passage 2, saying that *economic anarchy of capitalist society as it exists today is, in my opinion, the real source of the evil.* Eliminate (A) because the passages make opposing arguments for two different economic systems, rather than focusing on *social context* and one *financial system.* Eliminate (B) because Passage 2 advocates for *the economic system criticized in Passage 1* rather than *elaborate[ing] on the pitfalls.* Keep (C) because Passage 2 does advocate *against* capitalism, which is *the economic system championed in Passage 1.* Eliminate (D) because Passage 2 opposes the *ideas put forth in Passage 1* rather than *us[ing] specifics to illustrate the ideas.* The correct answer is (C).
20. **B** The question asks how *von Mises would have most likely reacted to lines 72–76 (“I am...goals”) of Passage 2.* Since the question is about both passages, it should be done after the questions that ask about the passages individually. The given lines from Passage 2 state that *the establishment of the socialist economy would eliminate these grave evils.* In the first paragraph of Passage 1, von Mises strongly criticizes socialism, saying that to *surrender to the guardianship of a gigantic apparatus of compulsion and coercion, the socialist state* would be to substitute *authoritarian totalitarianism*

for *individualism and democracy*. Eliminate (A) because von Mises is not *in agreement* with the views expressed in Passage 2. Keep (B), because the statement that *a socialist society enslaves its citizens and eliminates individualism* is supported by the first paragraph of Passage 1. Although the language of (B) is strong, it is supported by equally strong wording in the text. Eliminate (C) because von Mises does not discuss *relying on social goals to fix financial issues*. Eliminate (D) because von Mises is strongly opposed to implementing socialism and argues that it would cause serious problems; he would not merely express *reservation* because *socialism isn't effective*. The correct answer is (B).

21. **D** The question asks for *the point of view* of the authors of the passage. Since this is a general question, it should be answered after the specific questions. The passage is about the effects of increased natural gas use on global carbon dioxide emissions. The authors state that where natural gas *replaces coal for electricity generation, it's reducing carbon dioxide emissions and improving air quality. It still produces carbon pollution, though, and therefore slows, but does not solve, the climate problem. Where it's providing new energy and new emissions—replacing low- and no-carbon technologies or keeping them from being deployed—it is hindering climate solutions*. Therefore, the authors are concerned about carbon pollution and its effects on the climate. Eliminate answers that don't match this prediction. There is no evidence that the authors work in the natural gas industry, so eliminate (A). Eliminate (B) because the passage is not focused on *avenues of research*. Eliminate (C) because the passage is not directed at *consumers*. Keep (D) because the effects of carbon pollution on the climate are *global developments* that the authors are *concerned* about. The correct answer is (D).
22. **C** The question asks what the phrase *aided by* most nearly means in line 12. Go back to the text, find the phrase *aided by*, and cross it out. Then read the window carefully, using context clues to determine another word that would fit in the text. The text says, *Natural gas use is surging at almost twice that rate, aided by the boom in liquefied natural gas (LNG) that is connecting global gas markets*. Therefore, *aided by* could be replaced by a phrase such as “helped to increase.” *Lessened by* does not match “helped to increase,” so eliminate (A). *Relieved of* does not match “helped to increase,” so eliminate (B). *Boosted by* matches “helped to increase,” so keep (C). *Revealed by* does not match “helped to increase,” so eliminate (D). The correct answer is (C).
23. **A** The question asks for the purpose of the *last sentence of the second paragraph*. Use the given line reference to find the window. The second paragraph states, *Increased natural gas and oil use are driving the increase in carbon dioxide emissions* and goes on to say, *Natural gas use is surging at almost twice the rate of oil use*. The last sentence of the second paragraph says, *Emissions from natural gas use rose almost 200 million metric tons of CO₂ in 2019, and were responsible for two thirds of the global emissions increase*. Therefore, the last sentence gives specific information about the trend of increasing natural gas use. Eliminate answers that don't match this prediction. Keep (A) because it matches the prediction. Eliminate (B) because the sentence gives data; it does not *evaluate a claim*. Eliminate (C) because only the year 2019 is mentioned in the sentence. Eliminate (D) because the sentence does not mention any *efforts to mitigate climate change*. The correct answer is (A).
24. **D** The question asks what *the authors believe* about *current natural gas production*. Notice that this is the first question in a paired set, so it can be done in tandem with Q25. Look at the answer choices for Q25 first. The lines for (25A) indicate that *[n]atural gas use is surging at almost twice the rate of oil use, aided by the boom in liquefied natural gas (LNG) that is connecting global gas markets*. Although these lines mention *natural gas use*, they do not support any of the answers for Q24. Eliminate (25A). The lines for (25B) say, *In the United States and Europe, natural gas is replacing coal in electricity generation*. At first glance, this information may seem to support (24A).

However, these lines indicate that natural gas use is increasing in both the United States and Europe; they do not indicate that *natural gas production performs better in the American market than in global markets*. Eliminate (25B) because it does not support any of the answers for Q24. The lines for (25C) say that when natural gas *replaces coal for electricity generation, it's reducing carbon dioxide emissions and improving air quality*. At first glance, this information may seem to support (24C), but the authors go on to state that natural gas still produces carbon pollution, so the authors do not believe that natural gas is the *ultimate solution for clean air technology*. Eliminate (25C) because it does not support any of the answers for Q24. The lines for (25D) say that natural gas *still produces carbon pollution, though, and therefore slows, but does not solve, the climate problem*. These lines support (24D). Draw a line connecting (24D) and (25D). Without any support in the answers from Q25, (24A), (24B), and (24C) can be eliminated. The correct answers are (24D) and (25D).

25. **D** (See explanation above.)
26. **D** The question asks how *the Allam cycle can improve on current pollution levels*. This is the first question in a paired set, but it is easy to find, so it can be done on its own. Since there is no line reference, use lead words and the order of the questions to find the window. The answer to Q25 came from the fifth paragraph, so scan the sixth paragraph, looking for the lead words *Allam cycle*. Lines 55–56 indicate that the *Allam cycle* is a *promising new technology*. The paragraph then explains, *An Allam cycle power plant produces almost pure CO₂ as a byproduct. This pipeline-quality CO₂ removes the need for CO₂ capture in current technologies that use amines or hydroxides to scrub the CO₂*. Eliminate answers that don't match this prediction. Choice (A) is a Deceptive Language trap answer: although the text mentions *carrier gas*, it does not say that the *Allam cycle* produces *fewer carrier gases*. Eliminate (A). Choice (B) is also a Deceptive Language trap answer; the text indicates that people could sequester the CO₂ that is produced by the Allam cycle underground, but it does not state that the Allam cycle stores its own byproducts underground. Eliminate (B). Choice (C) is also a Deceptive Language trap answer; the text says that the Allam cycle *burns natural gas or other fossil fuels in oxygen rather than air*, not that it burns *pure oxygen*. Eliminate (C). Keep (D) because it matches the prediction. The correct answer is (D).
27. **C** The question is the best evidence question in a paired set. Because the previous question was easy to find, simply look at the lines used to answer Q26. Lines 59–62 provided the prediction for Q26: *This pipeline-quality CO₂ removes the need for CO₂ capture in current technologies that use amines or hydroxides to scrub the CO₂*. Eliminate (A), (B), and (D). The correct answer is (C).
28. **B** The question asks what the word *radical* most nearly means in line 81. Go back to the text, find the word *radical*, and cross it out. Then read the window carefully, using context clues to determine another word that would fit in the text. The last paragraph discusses the *good news* and *bad news* about *emissions*, and then states, *What we need is much more radical news: a steep drop in pollution that drains the emissions glass as quickly as a final champagne toast*. Therefore, *radical news* could be described as news of a large or noteworthy change. Eliminate answers that don't match this prediction. *Fanatical* means “full of zeal” and does not match “noteworthy,” so eliminate (A). *Remarkable* matches “noteworthy,” so keep (B). *Militant* does not match “noteworthy,” so eliminate (C). *Enlightening* does not match “noteworthy,” so eliminate (D). Note that (A) and (C) are Could Be True trap answers based on other meanings of *radical* that are not supported by the text. The correct answer is (B).
29. **A** The question asks which source of *global CO₂ emissions in 2018* is closest to *the 2018 CO₂ emissions from gas in the United States*. First locate the 2018 CO₂ emissions from gas in the *United States* on figure 2. Figure 2 shows that in 2018 the CO₂ emissions from gas in the United States were slightly greater than 1.6 billion tons. Then find the source that is closest to 1.6 billion tons

in 2018 on figure 1. Figure 1 shows that the source closest to 1.6 billion tons in 2018 is *cement*. Keep (A) and eliminate (B), (C), and (D). The correct answer is (A).

30. **B** The question asks for the year in which *global CO₂ emissions from oil equal the U.S. CO₂ emissions from natural gas in the year 2000*. First locate CO₂ emissions from natural gas for the *United States* in the year 2000 on figure 2. Figure 2 shows that the emissions from natural gas in the United States in 2000 were around 1.2 billion tons. Then find the year when global CO₂ emissions from oil were closest to 1.2 billion tons on figure 1. Figure 1 shows that global CO₂ emissions from oil were closest to 1.2 billion tons around 1940. Keep (B), 1945, and eliminate (A), (C), and (D). The correct answer is (B).
31. **A** The question asks for the *main purpose of the passage*. Because this is a general question, it should be done after all the specific questions. Beginning from the opening sentence, the passage states that the *mass media play a role in the construction of environmental issues and problems*. The second paragraph states that *when it comes to coverage of global warming, balanced reporting can be a form of informational bias*. The correct answer will reflect this information. *Question the journalistic ideal of balanced coverage regarding scientific reporting* matches the prediction, so keep (A). The passage does not focus solely on the *bias of scientific journalists*, so eliminate (B). There is no analysis of *the antagonistic relationship between the elite press and local news outlets*, so eliminate (C). The *ideals of objectivity* are not just discussed, they are questioned; eliminate (D). The correct answer is (A).
32. **C** The question asks what expectation *reporters covering controversy face*. Notice that this is the first question in a paired set, so it can be done in tandem with question 33. Start with the best evidence answer choices for Q33. The lines for (33A), (33B), and (33D) talk about *the mass media, journalistic norms and values*, and *scientific consensus*, respectively, but not specifically *reporters*; eliminate (33A), (33B), and (33D). The fact that *journalistic fairness requires reporters who write about a controversy to present competing points of view* in the lines for (33C) matches the idea that *reporters should offer equal consideration to opposing perspectives*. The correct answers are (32C) and (33C).
33. **C** (See explanation above.)
34. **B** The question asks what the word *particular* means in line 51. Go back to the text, find the word *particular*, and mark it out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. The passage states that *a remarkably high level of scientific consensus has emerged on these two issues*. In the previous sentence, *these two issues* are defined as the facts *that global warming is a serious problem that has anthropogenic influences, and that it must be addressed immediately*. In the context of the passage, *particular* means something like “defined” or “exact.” *Local* can mean “exact,” but only in reference to place or position; eliminate (A). *Specific* means “defined” or “exact,” so keep (B). *Appropriate* means “suitable,” not exact; eliminate (C). *Peculiar* means “strange” or “different,” so eliminate (D). The correct answer is (B).
35. **A** The question asks why the authors include the quotation in lines 54–56. Use the given line reference to find the window. The sentence prior to the quotation says that *a remarkably high level of scientific consensus has emerged on these two particular issues*. This references the issues from the prior sentence *that global warming is a serious problem that has anthropogenic influences, and that it must be addressed immediately*, so it can be predicted that the quotation highlights this *remarkably high level of scientific consensus*. This high level of *consensus of scientific authorities* does *contrast... with the reporting in prestige publications*, as mentioned in the beginning of the fifth paragraph, so keep (A). The quote does not *propose models for accurate reporting, criticize readers*, nor *demonstrate the importance of scientific facts*; eliminate (B), (C), and (D). The correct answer is (A).

36. **D** The question asks what *the work of journalists may involve*. Notice that this is the first question in a paired set, so it can be done in tandem with question 37. Start with the best evidence answer choices for Q37. The lines for (37A) discuss *prestige-press coverage of global warming as a social relationship between people*. The only paired answer discussing social aspects of journalists' work is (36C), but it specifically mentions an unsupported claim about the journalists *relating socially to interview subjects*; eliminate (37A). The lines for (37B) and (37C) are related to concerned scientists and scientific discourse, not *the work of journalists*; eliminate (37B) and (37C). The lines for (37D) indicate that journalists engage in a *continuous juggling act [that] often mitigates against meaningful, accurate, and urgent coverage of the issue of global warming*. This provides evidence to support (36D), stating that the *work of journalists is prioritizing balanced reporting of viewpoints over covering the facts*. The correct answers are (36D) and (37D).
37. **D** (See explanation above.)
38. **B** The question asks what the word *curb* means in line 79. Go back to the text, find the word *curb*, and mark it out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. The passage states that a *disconnection has played a significant role in the lack of concerted international action to do something to the practices that contribute to global warming*. From the overall passage, it is known that journalism has not helped to stop global warming. Therefore, *curb* must mean something like "stop" or "restrict" in the context of the passage. Neither *bend* nor *edge* matches this prediction, so eliminate (A) and (D). *Limit* means "restrict," so keep (B). *Delay* is a close answer that means "slow down" rather than "stop" or "restrict," so eliminate (C). The correct answer is (B).
39. **C** The question asks *in what year the percentages of all three types of coverage of action tactics regarding global warming were most similar*, based on the graph. Check the answer choices against the graph, looking for a year where the three lines are closest together. In 1989, the lines for balanced accounts and immediate/mandatory action are close together, but the line for cautious/voluntary action is not; eliminate (A). In 1993 and 1999, the lines for cautious/voluntary action and immediate/mandatory action are close together, but the line for balanced accounts is not; eliminate (B) and (D). In 1994, all three lines, for balanced accounts, immediate/mandatory action, and cautious/voluntary action, are close together. The correct answer is (C).
40. **C** The question asks *which statement is best supported by information in the graph*. Check the answer choices against the table. *Between 1989 and 1999, the number of "cautious/voluntary" accounts of global warming did decline dramatically, but then never rose significantly*; eliminate (A). *Between 1995 and 2000, the number of "immediate/mandatory" accounts of global warming may not have varied as much as the number of balanced accounts regarding action, but they didn't remain the same either*; eliminate (B). Overall, *the number of "balanced" accounts of global warming did increase between 1988 and 2002*, so keep (C). There is no indication that the information from the graph includes *all accounts of global warming*, so eliminate (D). The correct answer is (C).
41. **D** The question asks what *the 2001 data in the graph best serve as evidence of*. Check the graph for where the coverage of action lines lie in 2001 to predict that in 2001 balanced accounts regarding global warming action had peaked. The graph provides no information regarding the composition of *coverage of global warming or anthropogenic influences*; eliminate (A) and (C). Choice (B) refers to *balanced reporting*, but the graph has no reference to *informational bias*; eliminate (B). Choice (D) also refers to *balanced reporting*, and states that *popular discourse has significantly diverged from the scientific discourse*. According to the passage, *balanced reporting is the popular discourse*, and according to the graph, in 2001 the line for *balanced reporting* diverged the most from the other types of reporting. The correct answer is (D).

42. **A** The question asks about the *primary purpose of the passage*. Because this is a general question, it should be done after all the specific questions. The passage starts with the report of the death of howler monkeys in Nicaragua, goes on to present different theories on why the howler monkeys died, and concludes by stating that the *cause of the recent howler monkey deaths remains a mystery* and that there is *probably an interaction of factors*. Choice (A) is consistent with this structure. The passage presents concerns for the howler monkey deaths, portrays the actions of the researchers, and raises several theories for why the howler monkeys died. Choice (B) can be eliminated because there are no *contradictory results* presented in the passage. The passage simply raises various theories as to why the howler monkeys died. Eliminate (C) because there is no indication in the passage that the researchers are *unusual[ly]* persistent. Choice (D) can be eliminated because the passage does not examine the researcher's *methodology*. The correct answer is (A).
43. **D** The question asks what type of evidence *Williams-Guillén's ultimate hypothesis* rests on. In the eighth paragraph of the passage, the author states that *William-Guillén thinks that disease is an unlikely cause of the recent monkey deaths*, and that *she and her colleagues are still waiting to export blood and tissue samples to U.S. labs for further analysis*. Therefore, Williams-Guillén's ultimate hypothesis rests on laboratory tests, which is (D). The correct answer is (D).
44. **D** The question asks what the words *hopped on* mean in line 15. Go back to the text, find the words *hopped on*, and mark them out. Carefully read the surrounding text to determine another word that would fit in the blank based on the context of the passage. According to the passage, *William-Guillén hopped on a plane to Nicaragua*. In this context, *hopped on* would mean something like "boarded" a plane. Look for an answer that could mean "boarded." The only answer that could have a similar meaning is (D), *entered*. Choice (B), *flew*, may seem tempting. However, there is no indication in the passage that William-Guillén is a pilot. The correct answer is (D).
45. **C** The question asks what the passage states about *howler monkeys*. Given that the entire passage is about the howler monkeys, this is a general question that should be done after all the specific questions. For (A), there is no indication in the passage that howler monkeys *are less affected by ecological changes than other species would be*. In fact, the passage states that drought may have played a role in the death of the howler monkeys. Eliminate (A). For (B), although the third paragraph describes sick monkeys being easily captured, it never describes how difficult it is to capture healthy howler monkeys. Eliminate (B). For (C), look to the sixth paragraph of the passage, which states that one way to test whether limited food availability was a factor in the howler monkeys' deaths is to *see how other animals in the area are faring...If there are no reports of deaths in other frugivorous primates and other frugivorous animals, perhaps [food availability] doesn't have to do with it*. This suggests that howler monkeys *share some known dietary similarities with other species*. Keep (C). Choice (D) can be eliminated, because while the passage suggests that the howler monkeys may have eaten toxic food as a result of not having enough food available, it does not indicate whether the howler monkeys *prefer the taste of non-toxic foods*. The correct answer is (C).
46. **B** The question asks for *an early consideration regarding howler monkey deaths*. Given that the question is asking about an *early consideration*, the answer is likely to be found toward the beginning of the passage. According to the first paragraph, in late September Williams-Guillén received the first report that *a handful of howler monkeys...had been found dead at an eco-resort in Nicaragua*. According to the second paragraph, *Over the next couple of months, Williams-Guillén and her colleagues continued to receive news that howler monkeys were dying. Then around mid-January, the reports really started to flood in*. According to the third paragraph, *When it became clear that this was not just an isolated incident, Williams-Guillén hopped on a plane to Nicaragua to see for herself*. Therefore, an early consideration was whether the deaths were an isolated incident. Iso-

- lated incidents can also be thought of as *random occurrences*, which matches (B). The passage doesn't provide any suggestions on what could prevent the howler monkey deaths. Eliminate (A). The passage does not state that *all ages* of howler monkeys were impacted. Eliminate (C). The passage does not suggest that *the entire population* of howler monkeys was impacted. Eliminate (D). The correct answer is (B).
47. **C** The question asks which theory provided by the passage *supports William-Guillén's belief that "no one hypothesis will be correct."* Notice that this is the first question in a paired set, so it can be done in tandem with Q48. Start with the best evidence answer choices for Q48. The lines for (48A) state that *although the mortality rate seems to have slowed since mid-February, the researchers are anxious to understand what is going on.* These lines do not discuss the accuracy of any hypotheses. Eliminate (48A). The lines for (48B) state that *the deaths are all really concentrated in the areas worst hit by drought.* This does not support any of the answers in Q47. Eliminate (48B). The lines for (48C) state that in areas where it is *slightly more humid, there's a lot fewer deaths, and there's visibly more potential howler monkey food, whereas the areas that have the highest rates of mortality, the trees are just bare.* This does not support any of the answers in Q47. Eliminate (48C). The lines for (48D) state that *limited food availability is likely a contributing factor, though the cause of death may not be starvation per se. Rather, the lack of food may drive the monkeys to consume plants with high levels of certain toxins that aren't part of their normal diet.* This supports (47C). Connect (48D) and (47C). Any unsupported answers for Q47 can be eliminated. The correct answers are (47C) and (48D).
48. **D** (See explanation above.)
49. **D** The question asks about the *primary purpose of the seventh and eighth paragraphs (lines 56–75).* The seventh paragraph introduces disease as a possible cause for the howler monkeys' deaths and provides the historical impact of yellow fever on howler monkeys. The eighth paragraph discusses Williams-Guillén's thoughts that *disease is an unlikely cause of the recent monkey deaths.* According to the eighth paragraph, none of the virus diagnostics done tested positive for yellow fever. Find an answer consistent with this prediction. Choice (A) does not match the prediction. Neither paragraph 7 nor paragraph 8 discusses Williams-Guillén's methodology. Choice (B) can be eliminated because there is no discussion of Williams-Guillén's *expertise* in either the seventh or eighth paragraph. Choice (C) can also be eliminated because in the eighth paragraph Williams-Guillén rules out disease as a cause for the howler monkey deaths. However, there is no assumption that is underscored in either paragraph. Choice (D) matches the prediction. Williams-Guillén's perspective is that disease was not responsible for the howler monkey deaths. The seventh paragraph provides background on the historical impact of yellow fever on the howler monkeys, while the eighth paragraph rules yellow fever out as a cause for the current howler monkey deaths. The correct answer is (D).
50. **A** The question asks what the author means when he indicates that *yellow fever may have created bottlenecks* in line 65. According to Dias, *yellow fever may be a cause of the relatively low genetic diversity among Central American howler monkeys.* 'Yellow fever could have caused important bottlenecks.' Find an answer that matches this prediction. Choice (A) matches the prediction. The bottleneck is related to the *relatively low genetic diversity*. Choice (B) can be eliminated because, although the passage states that yellow fever *devastated howler monkey populations into the late 1940s and into the 1950s*, there is no indication that yellow fever *led to the current howler monkey deaths*. In fact, later in the passage yellow fever is specifically ruled out as a cause of the howler monkey deaths. Eliminate (C) because nowhere in the passage is it suggested that a *prohibitively large number of virus-free monkeys* were introduced into the ecosystem. Choice (D) can be eliminated because there is no discussion of *competition between monkeys*. The correct answer is (A).

51. **A** The question asks what question Williams-Guillén's investigation answers. Notice that this is the first question in a paired set, so it can be done in tandem with question 52. Start with the best evidence answer choices for Q52. The lines for (52A) state that *Some researchers even speculate that yellow fever may be a cause of the relatively low genetic diversity among Central American howler monkeys*. It may be tempting to connect this answer with (51C). However, these lines do not relate to the findings of Williams-Guillén's investigation. For this reason, eliminate (52A). The lines for (52B) state that *Williams-Guillén thinks that disease is an unlikely cause of the recent monkey deaths*. This might initially seem to connect with (51A). Keep it if there isn't a clear reason to immediately eliminate it. The lines for (52C) state that *so far, none [of the howler monkeys] have tested positive for yellow fever, Zika, chikungunya, or dengue viruses*. This solidly supports (51A). The listed diseases are unlikely to have contributed to howler monkey deaths. Connect (52C) with (51A). The lines for (52D) state that *Animals that might have had some clinical or secondary infections that normally aren't that problematic...got into a situation where they were extremely food- and water-stressed, and that might have been enough to tip them into mortality*. This does not support any of the answers in Q51. Eliminate (52D). Compare the remaining answers. While both (52B) and (52C) address the issue of whether disease caused the howler monkey deaths, (52B) only provides a hypothesis—*Williams-Guillén thinks*. Choice (52C), on the other hand, provides concrete evidence of disease not being present. The correct answers are (51A) and (52C).
52. **C** (See explanation above.)

Section 2: Writing and Language

- C** Commas are changing in the answer choices, so the question tests comma usage. The phrase *or early in the morning* is necessary information, so it should not be surrounded by commas; eliminate (A). There is no reason to break up the phrase *you almost certainly know the feeling* with a comma, so eliminate (B). There is no reason to break up the phrase *late at night or early in the morning* with a comma, so eliminate (D). Choice (C) appropriately uses a comma to separate the phrase *If you've ever been driving on a long stretch of highway late at night or early in the morning* from the main part of the sentence, *you almost certainly know the feeling*.
- B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *This may seem like a harmless enough problem, but as many as one-seventh of these drivers admit to falling asleep at the wheel*, is an independent clause. The second part of the sentence, *causing more than a million crashes each year, including 50,000 injuries and 6,400 deaths*, is not an independent clause. A period can only be used between two independent clauses, so eliminate (A). Adding the word *which* to the beginning of the second part of the sentence does not make it an independent clause, so eliminate (D). Adding the word *this* to the beginning of the second part of the sentence does make it an independent clause. A comma on its own cannot be used between two independent clauses, so eliminate (C). Choice (B) appropriately uses a comma to connect the two parts of the sentence. The correct answer is (B).
- A** Note the question! The question asks which sentence *provides the best transition from the previous paragraph*, so it is testing consistency. Determine the subject of the paragraph and find the answer that is consistent with that idea. The end of the previous paragraph states that drivers *falling asleep at the wheel* cause *more than a million crashes each year* and the following sentence says that *driving on fewer than two hours of sleep is the equivalent of driving while intoxicated*. The

statement *these* [numbers] *may sound like drunk driving numbers and with good cause* combines both of these concepts, so keep (A). There is no reason to mention *the leading causes of death every year, medical professionals, or drunk driving penalties* in general so eliminate (B), (C), and (D). The correct answer is (A).

4. **D** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *At a recent forum, Czeisler suggested that driving on fewer than two hours of sleep is the equivalent of driving while intoxicated*, is an independent clause. The second part of the sentence, *Judgement is seriously compromised, and reaction times are correspondingly slowed*, is also an independent clause. A comma on its own cannot be used between two independent clauses, so eliminate (B). Either a period or a colon can be used between two independent clauses, so look at the punctuation at the end of the underlined portion. *Judgement is* is not an independent clause. A colon or a dash can only be used after an independent clause, so eliminate (A) and (C). The correct answer is (D).
5. **D** Note the question! The question asks which choice best addresses a *specific proposal that Czeisler's group has made*, so it is testing consistency. The previous sentence indicates that *Czeisler and the committee are now attempting to implement changes in the law code to address sleep deprivation*, so the correct answer should provide a legal proposal to address sleep deprivation. *Conferences, risks of sleep-deprived driving, and Czeisler's career* are not consistent with the idea of changing the *law code*, so eliminate (A), (B), and (C). *Trying to get sleep-deprived driving added to the list of criminal statutes* is a proposed change *in the law code to address sleep deprivation*. The correct answer is (D).
6. **B** Note the question! The question asks how to effectively combine the underlined sentences, so it tests precision and concision. Look for the answer that combines the sentences while maintaining the meaning of the originals. Both sentences use the phrase *sleep disorder*, but there is no need to repeat the phrase when the sentences are combined. Choices (A) and (D) repeat the phrase, so eliminate them. *Among them are* redundantly refers to the *sleep disorders*, and the plural verb *are* is not consistent with the singular noun *sleep apnea*; eliminate (C). The correct answer is (B).
7. **D** Verbs are changing in the answer choices, so the question is testing verb consistency. A verb must be consistent with its subject and with the other verbs in the sentence. The subject of the verb is *the disorder*, which is singular. To be consistent, the underlined verb should also be singular. Eliminate (B) because *are doubling* is plural. The other verb in the sentence is *don't*, which is in simple present tense. To be consistent, the underlined verb should also be in present tense. Eliminate (A) because *was doubling* is past tense. Eliminate (C) because it's less concise than (D) and because *is doubling* is not consistent with *don't*. *Doubles* is consistent with *don't*. The correct answer is (D).
8. **B** Transition words are changing in the answer choices, so the question is testing the consistency of ideas. A transition should be consistent with the relationship between the ideas it connects. The sentence with the underlined transition indicates that *the findings regarding young people were not quite so obvious*. These ideas contrast with each other, so look for a contrasting transition. *For example, furthermore, and thus* are all same-direction transitions, so eliminate (A), (C), and (D). *However* indicates that the ideas contrast. The correct answer is (B).
9. **A** Note the question! The question asks which of the following *most effectively cites commonly held views while previewing what is to come in this paragraph*, so it is testing consistency. Eliminate any answers that are not consistent with the purpose stated in the question. Before the underlined portion, it is stated that *young people have a tendency to think that they can operate at a high level with less sleep*. The rest of the paragraph after the underlined portion then explains that this

thought regarding young people and sleep deprivation is actually a misconception, so the correct answer will address this “misconception.” That *science suggests the opposite is true* is consistent with this idea, so keep (A). The notions that young people *drive faster* and are susceptible to *alcoholism* are both irrelevant to the paragraph, so eliminate (B) and (C). Whether *you are one of the lucky few who doesn’t need sleep* is also not consistent with the paragraph, so eliminate (D). The correct answer is (A).

10. **A** The vocabulary is changing in the answer choices, so this question is testing the precision of word choice. Look for a phrase that has a definition consistent with the other ideas in the sentence. The cells in younger people are compared to the same cells in older people that *have died or function at a lower level*. Therefore, the cells in younger people could accurately be described as “alive” and “high functioning.” *Firing on all cylinders, going off, and off the chain* are all slang phrases that do not match the formal tone of the passage; eliminate (B), (C), and (D). The correct answer is (A).
11. **D** The length of the phrase changes in the answer choices, so this question tests precision and concision. The words *and* and *also* mean the same thing, so there is no reason to use both words; eliminate (B). Similarly, *plus* and *as well* mean the same thing, so eliminate (C). Choice (D) is both more concise than (A) and makes the meaning of the sentence more precise. Eliminate (A). The correct answer is (D).
12. **B** Transitions change in the answer choices, so the question is testing consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The previous sentence states that the temple that *stands in ruins today was completed in 432 B.C.E.* The next sentence states that it *served its original purpose for a thousand years*. These ideas are similar but *nevertheless* indicates a contrast, so eliminate (A). There is no cause/effect relationship between the two ideas, so eliminate (C) and (D). Two thousand years is a long time, and is remarkable, as (B) indicates. The correct answer is (B).
13. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *The shift of the building’s religious affiliation involved some minor architectural changes, but until the late 17th century*, is not an independent clause. The second part of the sentence, *the building largely retained its majestic, classical profile*, is an independent clause. A colon can only be used after an independent clause, so eliminate (C). There is no need to break up the independent clause in the second part of the sentence with commas, so eliminate (A) and (D). Choice (B) appropriately uses a comma to separate the two parts of the sentence. The correct answer is (B).
14. **D** The words and punctuation are changing in the choices with the option to DELETE. Consider the DELETE option carefully as it is often the correct answer. The sentence already states that the Parthenon was used as a *gunpowder storehouse*. The phrase *for storing ammunition* is redundant, so the phrase should be deleted. Eliminate (A), (B), and (C), which all repeat the idea. The correct answer is (D).
15. **A** Note the question! The question asks whether the sentence should be added, so it’s testing consistency. If the content of the new sentence is consistent with the ideas surrounding it, then it should be added; otherwise, it should not be added. The previous sentence states that the Parthenon exploded. The next sentence starts with the word *additionally*, which indicates more information about the results of the explosion. The sentence to be added discusses the results of the explosion. Therefore, it’s consistent with the surrounding ideas and should be added. Eliminate (C) and (D). The sentence does not explain later facts, so eliminate (B). The correct answer is (A).

16. **A** Note the question! The question asks for the choice that best supports the main point of the paragraph, so it's testing consistency of ideas. The only other sentence in the paragraph states that Britain took the first steps to preserve the Parthenon, so the correct answer should contain that idea. Only (A) mentions Britain. The correct answer is (A).
17. **C** Apostrophes are changing in the choices, so the question is testing apostrophe usage. When used with a pronoun, an apostrophe indicates a contraction. In this sentence, *it* refers to the Parthenon, which is possessing the *iconic columns*. The possessive pronoun does not use an apostrophe, so eliminate (B) and (D). When used with a noun, an apostrophe indicates possession. In this sentence, the *columns* are plural and are not possessing anything, so the apostrophe is not needed. Eliminate (A). The correct answer is (C).
18. **B** The verbs are changing in the answer choices, so the question is testing verb consistency. A verb must be consistent with the other verbs in the sentence. The verb *corroded* is in the past tense, so the verb *used* must also be in the past tense. Eliminate (A) and (C) because *using* is not past tense. Choices (B) and (D) mean the same thing, but (D) is less concise, so eliminate (D).
19. **C** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *Most disastrously, the iron clamps that he used to hold pieces of masonry together corroded after years of exposure to the weather*, is an independent clause. The second part of the sentence, *eventually it caused even more damage to the already fragile building*, is also an independent clause. A comma on its own cannot be used between two independent clauses, so eliminate (A). Removing the word *it* from the second part of the sentence means it is no longer an independent clause. A semicolon can only be used between two independent clauses, so eliminate (B). Changing the verb in the second part of the sentence to *causing* makes the entire sentence incomplete, so eliminate (D). Choice (C) appropriately uses a comma to separate the two parts of the sentence. The correct answer is (C).
20. **D** The vocabulary is changing in the answer choices, so this question is testing precision of word choice. Look for a word with a definition that is consistent with the other ideas in the sentence. The sentence states that the pieces are *incredibly sophisticated* and *match by fractions of millimeters*, so the word should mean something like "small details." *Shadows* means "areas of less light," so eliminate (A). *Tininess* means "small" but does not capture the intricacies of the details, so eliminate (B). *Suggestions* means "hints" or "possible ideas," so eliminate (C). *Nuances* means "slight difference or variation," so keep (D). The correct answer is (D).
21. **C** Note the question! The question asks where sentence 2 should be placed, so it's testing consistency. The sentence must be consistent with the ideas that come both before and after it. Sentence 2 discusses *a result of this painstaking work*, so it should follow the description of the work. Sentence 5 states that the work is hard because the *design is incredibly sophisticated*, and *pieces match one another by fractions of millimeters*. Therefore, sentence 2 should be placed after sentence 5. The correct answer is (C).
22. **D** The length of the phrase changes in the answer choices, so this question could test concision. There is also the option to DELETE; consider this option carefully as it is often the correct answer. The sentence contains the name *Manolis Korres* followed by a description of who that person is. Only a comma is needed to link the name and the description, so the sentence could read *Manolis Korres, the project's chief architect*. The correct answer is (D).
23. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The sentence contains a list of three things: 1) *how many items an online shopper looks at before deciding to make a purchase*, 2) *exactly how much time a delivery truck*

spends idling in traffic, and 3) *how the weather affects which books patrons check out from the library*. There should be commas separating the items in the list. Eliminate (C) and (D) because they don't use commas. There is no reason to include a comma after the word *or*, so eliminate (A). The correct answer is (B).

24. **C** Transitions change in the answer choices, so the question is testing consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The previous sentence discusses one of the sources of the *glut of data: sensors*. The next sentence introduces a different source—*social media posts*—which *can't be analyzed in traditional ways*. This indicates a shift in ideas, so the transition word should indicate a shift. Eliminate (A), (B), and (D) because they all indicate that the ideas agree. The correct answer is (C).
25. **C** The vocabulary is changing in the answer choices, so this question is testing the precision of word choice. Look for a word whose definition is consistent with the other ideas in the sentence. The previous sentence states that *social media posts can't be analyzed in traditional ways*. This sentence highlights that *new ways of "digging" online activity* are needed. Therefore, the word should mean something like "analyzing" or "studying." *Digging* means either "to burrow under the earth" or "to really like something," so eliminate (A). *Checking out* means "to look at," so keep (B). *Mining* means "to extract a desired material or information," so keep (C). *Take a peek at* means "to look at for a brief time," so eliminate (D). *Checking out* is too informal for this passage and doesn't indicate analysis, so eliminate (B). The correct answer is (C).
26. **B** The vocabulary is changing in the answer choices, so this question is testing the precision of word choice. Look for a word whose definition is consistent with the other ideas in the sentence. The sentence uses the comparison *from this to that*. The word *too* means "also" and is not correct. Eliminate (A). *Sector* means "a distinct part or area," so keep (B). *Section* means "part that is cut off or separated," so eliminate (C) and (D). The correct answer is (B).
27. **B** The pronouns are changing in the answer choices, so the question is testing consistency and precision of meaning. There is also the option to DELETE; consider this choice carefully as it is often the correct answer. There is a comparison in the sentence, so this question tests consistency. When two things are compared, they should be consistent with each other. The first item in the comparison is *the average starting salary of a data analyst*. Deleting the underlined portion would make the second part of the comparison *a computer programmer*, which is not consistent with *salary*, so eliminate (D). The underlined pronoun refers to *salary*, which is singular. To be consistent, the underlined portion should also be singular. Eliminate (C) because *those* is plural. The phrase *that of* is consistent with the first part of the comparison, so eliminate (A). The correct answer is (B).
28. **A** Note the question! The question asks for the best introduction to the paragraph, so it's testing consistency of ideas. The rest of the paragraph discusses how the analyst works with other experts in the field, so that the analyst doesn't need to be an expert in everything. The correct answer should be consistent with this idea. Stating that *specialized knowledge of a particular field is not necessarily a requirement* is consistent, so keep (A). *Schools are offering degree programs* is not consistent, so eliminate (B). *A field in which data analytics is of fundamental importance* is not consistent, so eliminate (C). *Creating new positions* is not consistent, so eliminate (D). The correct answer is (A).
29. **D** Pronouns are changing in the answer choices, so the question tests consistency of pronouns. A pronoun must be consistent with the noun it refers to. The pronoun refers to *researchers*, which is plural. The pronoun must also be plural, so eliminate (A). *There* does not refer to people, so eliminate (B). The apostrophe in *they're* indicates the conjunction "they are," while the pronoun

- their* indicates possession. The information belongs to the researchers, so the possessive pronoun is needed. Eliminate (C). The correct answer is (D).
30. **A** Note the question! The question asks whether the sentence should be added, so it's testing consistency. If the content of the new sentence is consistent with the ideas surrounding it, then it should be added; otherwise, it should not be added. The sentence to be added discusses *how much the field is growing*. The rest of the paragraph discusses how *related jobs have projected growth rates of up to 34% over the next ten years* and that the *big data will no doubt become a part of nearly every other aspect* of our society. Thus, the sentence is consistent with the rest of the paragraph, so it should be added. Eliminate (C) and (D). The sentence *introduces an issue that is further discussed in the paragraph*, so keep (A). The sentence does not *offer additional details about a point made in the previous paragraph*, so eliminate (B). The correct answer is (A).
31. **A** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *According to the Bureau of Labor Statistics, related job titles*, is not an independent clause. Eliminate (B) because a colon can only be used after an independent clause. The phrase *including operations research analyst and statistician* is not necessary to the main meaning of the sentence, so it should be set off by some type of punctuation. Choice (A) appropriately uses parentheses to set off the unnecessary phrase, so keep (A). Eliminate (C) both because it lacks a comma before the unnecessary phrase and because it has an unnecessary comma after *analyst*. Eliminate (D) because it lacks a comma after the unnecessary phrase. The correct answer is (A).
32. **D** Note the question! The question asks whether the sentence should be added, so it's testing consistency. If the content of the new sentence is consistent with the ideas surrounding it, then it should be added; otherwise, it should not be added. The sentence to be added states that *operations research analyst positions are projected to have the greatest number of jobs in the field by 2024*. The rest of the paragraph discusses the *projected growth rates* of analysts, so the content is consistent. However, the claim is not supported by the table. The number of *operations research analyst[s]* in 2024 is projected to be 587,800, and the number of *management analysts* is projected to be 861,400. The new sentence is not supported by the table, so it should not be added. Eliminate (A) and (B). The sentence is related to the topic, so eliminate (C). The correct answer is (D).
33. **D** The vocabulary is changing in the answer choices, so this question is testing precision of word choice. Look for a word whose definition is consistent with the other ideas in the sentence. The previous sentence states *big data is used in deliveries and to recommend music and movies*. The next sentence discusses how the use of big data will grow in the next decades. The word should mean something like other aspects of our "lives" or "society." *Goings-on* is too informal for this passage, so eliminate (A). *Habits* means "a reoccurring practice," so eliminate (B). *Usual procedures* means "common course of action," so eliminate (C). *Daily lives* means "everyday society," so keep (D). The correct answer is (D).
34. **D** The vocabulary is changing in the answer choices, so this question is testing precision of word choice. Look for a word whose definition is consistent with the other ideas in the sentence. The sentence is discussing time periods and mentions the *early 60s*. Therefore, the word must mean something like "late" or "latter." *Delayed* means "postponed," so eliminate (A). *Tardy* means "behind schedule," so eliminate (B). *Behind* means "come after," so eliminate (C). *Late* means "at the end," so keep (D). The correct answer is (D).
35. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *The film Blackboard Jungle*, is not an independent clause. The second part of the sentence, *which featured the song "Rock Around*

the Clock” by Bill Haley and his Comets—catapulted popular culture into the rock-and-roll era in 1955, is also not an independent clause. A semicolon can only be used between two independent clauses, so eliminate (D). A colon must come after an independent clause, so eliminate (C). Note that there is a non-underlined dash in the sentence. The phrase that comes before the dash, *which featured the song “Rock Around the Clock” by Bill Haley and his Comets*, is not necessary to the main meaning of the sentence, so it should be set off by some type of punctuation. Since there is a dash at the end of the phrase, there needs to be a dash at the beginning of the phrase also. Eliminate (A). The correct answer is (B).

36. **C** Transitions change in the answer choices, so the question is testing consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The previous sentence mentions that the film *catapulted popular culture*. The next sentence states that the *movie sparked controversy*. The two ideas are contrasting, so the conjunction should indicate a contrast. *Moreover*, *and*, and *as a result* both indicate similar ideas, so eliminate (A), (B), and (D). The correct answer is (C).
37. **C** Verbs are changing in the choices, so the question is testing verb consistency. A verb must be consistent with the other verbs in the sentence. Both the sentence before and after this one have verbs in the past tense: *movie sparked controversy* and *rock and roll was widely embraced*. To be consistent, the answer choice must also be in the past tense. Eliminate (A) and (B) because they are not past tense. Choice (D) is past tense, but it is less concise than (C), and is not consistent with the other verbs. The correct answer is (C).
38. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The first part of the sentence, *Rock and roll was widely embraced as the symbol* is not an independent clause. The second part of the sentence, *of a new, rebellious generation*, is also not an independent clause. A colon can only be used after an independent clause, so eliminate (C). There is no reason to break up the phrase *symbol of a new, rebellious generation* with commas before or after *of*, so eliminate (A) and (D). The correct answer is (B).
39. **D** Note the question! The question asks for the choice that *logically completes the discussion of the popularity of early rock and provides an effective transition into the next paragraph*, so it’s testing consistency of ideas. The paragraph discusses the rise in the popularity of rock and roll and the artists that propelled it to popularity. The next paragraph begins with *but in the late 50s*, which indicates a shift in ideas. The paragraph goes on to say that many of the popular artists were disappearing from the rock-and-roll scene. The concluding sentence should end on a very positive note about the popularity of rock and roll. The type of *guitar* is not consistent with the popularity of the music, so eliminate (A). The type of *dance moves* is not consistent with the popularity of the music, so eliminate (B). The information about *American Bandstand* does discuss the *popularity* of rock music, but it does not provide a direct contrast to the next paragraph, so eliminate (C). The *rise of rock and roll was unstoppable* is consistent with the popularity of the music and does provide a contrast to the next paragraph, so keep (D). The correct answer is (D).
40. **B** Note the question! The question asks for the choice that *most effectively sets up the main idea of the paragraph*, so it’s testing consistency of ideas. The paragraph discusses how many of the popular artists were leaving the rock-and-roll scene. The correct answer will be consistent with this idea. *Expand their musical styles* is not consistent with leaving the scene, so eliminate (A). *Icons of early rock disappeared from the music scene* is consistent, so keep (B). *Write their own songs* is not consistent with leaving the scene, so eliminate (C). *British rock bands* are not consistent with leaving the scene, so eliminate (D). The correct answer is (B).

41. **C** Note the question! The question asks for the choice that is *most consistent with the examples in the previous sentences*, so it's testing consistency of ideas. All the other examples are negative situations that caused artists to leave the rock-and-roll scene. The correct answer will be consistent with this idea. *Debuted his signature move* is not consistent with leaving the scene, so eliminate (A). *Opened some of the first integrated music clubs* is not consistent with leaving the scene, so eliminate (B). *Served time in jail* is consistent with leaving the scene, so keep (C). *An innovative new way* is not consistent with leaving the scene, so eliminate (D). The correct answer is (C).
42. **B** Apostrophes are changing in the choices, so the question is testing apostrophe usage. When used with a noun, an apostrophe indicates possession. In this sentence, The Beatles are possessing the albums, but the albums are not possessing anything. Therefore, *albums* does not need an apostrophe. Eliminate (A), (C), and (D). The correct answer is (B).
43. **A** Pronouns change in the answer choices, so this question tests consistency of pronouns. There is also the option to DELETE; consider this choice carefully as it is often the correct answer. There is a comparison in the sentence, so this question tests consistency. When two things are compared, they should be consistent with each other. The first item in the comparison is *these new stars*. Deleting the underlined portion would make the second part of the comparison *of the late 50s*, which is not consistent with *stars*, so eliminate (D). The word *them* cannot be used before the phrase *of the late 50s*, so eliminate (B). *These* indicates something nearby; the stars of the late 50s are not nearby, so eliminate (C). Choice (A) makes the comparison consistent. The correct answer is (A).
44. **A** Note the question! The question asks how to effectively combine the underlined sentences, so it tests precision and concision. The first sentence mentions that Elvis was *met with disapproval*, and the second sentence mentions that The Beatles were *seen as a symbol of rebellion*. These two ideas are similar examples of the same phenomenon, so the combination should be consistent with this comparison. *Just as* indicates two similar ideas, so keep (A). *Even though* indicates opposite ideas, so eliminate (B). The sentence is supposed to convey that *parents* not *the band's fans* viewed The Beatles' hairdos as a symbol of rebellion; eliminate (C). In (D), it is unclear what is *shaggy and rebellious*, so eliminate (D). The correct answer is (A).

Section 3: Math (No Calculator)

1. **A** The question asks for the sum of two complex numbers, which are numbers with both real and imaginary parts. To do this, add the real parts and the imaginary parts separately. Therefore, $(3 + 6i) + (7 + 2i) = (3 + 7) + (6i + 2i) = 10 + 8i$. The correct answer is (A).
2. **A** The question asks for the meaning of a constant in context. Start by reading the full question, which asks for the meaning of the number 100. Then label the parts of the equation with the information given. The question states that C is the total cost and h is the hours. The number 100 is added to the expression for hours, so it must be unrelated to the number of hours. Next, use process of elimination to get rid of answer choices that are not consistent with the labels. Choices (B), (C), and (D) all refer to hours, which is represented by h , not 100, so eliminate these answers. To check (A), plug in some numbers. Choice (A) says that 100 is the registration fee, which must be paid no matter how many hours are charged. Make $h = 0$ to get $C = 40(0) + 100 = 100$. This fits the situation described. The correct answer is (A).

3. **D** The question asks to model a relationship, so figure out one part at a time and eliminate after each step. In all four choices, 150 is given on the right side as a result of addition on the left side. Since 150 is the total number of ounces of gold, determine what is added to get the total number of ounces. Because there are two samples, the number of ounces of gold in each sample is added to get 150. Since a represents the percent, as a decimal, of pure gold in Sample F, which weighs 220 ounces, the number of ounces of gold in Sample F is $220a$. Eliminate any choice that does not include this quantity. Eliminate (A), (B), and (C). Only one choice remains. To better see why (D) is correct, follow a similar line of reasoning to get that the number of ounces of gold in Sample B is $140b$. This must be added to $220a$ to get 150. The correct answer is (D).
4. **D** The question asks for the value of $4a - 5$. Put the value $b = 15$ into $a = \frac{4}{5}b$ to get $a = \frac{4}{5} \times \frac{15}{1}$.
Cancel a 5 from the numerator and denominator to make the math easier: $a = \frac{4}{1} \times \frac{3}{1} = 12$.
Now plug this value into $4a - 5$ to get $4(12) - 5 = 48 - 5 = 43$. The correct answer is (D).
5. **B** The question asks for the value of c , which appears on the left side of the question. Notice that the left side is in the form of one of the common quadratics: $a^2 - b^2 = (a + b)(a - b)$ with $a = cy$ and $b = d$. Therefore, $(cy - d)(cy + d) = (cy)^2 - d^2 = c^2y^2 - d^2$. Since $25y^2 - 16 = c^2y^2 - d^2$, $c^2 = 25$ and $d^2 = 16$. The question asks for the value of c , so take the square root of both sides in $c^2 = 25$ to get $c = \pm 5$. Only +5 is a choice. The correct answer is (B).
6. **A** The question asks for the value of y , so isolate y in the equation $\sqrt{49} = \sqrt{y} - \sqrt{16}$. Add $\sqrt{16}$ to both sides to get $\sqrt{49} + \sqrt{16} = \sqrt{y}$. Now simplify the equation. Since $\sqrt{49} = 7$ and $\sqrt{16} = 4$, the equation simplifies to $7 + 4 = \sqrt{y}$. Add on the left side to get $11 = \sqrt{y}$. Square both sides to get $y = 121$. The correct answer is (A).
7. **A** The question asks for the graph of the given equation. To find the graph of an equation in the form $y = mx + b$, use the fact that m is the slope and b is the y -intercept. In the equation $y = \frac{1}{3}x - 2$, the y -intercept is -2 , so eliminate any choice that crosses the y -axis at a point other than -2 . Eliminate (B) and (D). The slope of $y = \frac{1}{3}x - 2$ is $\frac{1}{3}$. Because the slope is positive, the graph increases as it goes from left to right. Eliminate (C), which decreases as it goes from left to right. The correct answer is (A).
8. **B** The question asks for h , in terms of F and n . Isolate h in the equation $F = 300nh$ by dividing both sides by $300n$ to get $\frac{F}{300n} = h$. The correct answer is (B).
9. **D** The question asks for the value of s , and there are numbers in the choices, so use those in the equation. Eliminate any choice for which $r(s) \times t(s)$ is not equal to s . For (A), $s = 0$, so $r(s) \times t(s) = r(0) \times t(0) = (-1) \times (-1) = 1$. Since this is not equal to 0, eliminate (A). For (B), $s = 1$, so $r(s) \times t(s) = r(1) \times t(1) = 2 \times 1 = 2$. Since this is not equal to 1, eliminate (B). For (C), $s = 2$, so $r(s) \times t(s) = r(2) \times t(2) = 3 \times 1 = 3$. Since this is not equal to 2, eliminate (C). For (D), $s = 3$, so $r(s) \times t(s) = r(3) \times t(3) = (-1) \times (-3) = 3$. This is equal to the value of s . Therefore, the correct answer is (D).

10. **A** The question asks for an equivalent expression to the given one. Rather than doing complex algebra, choose a number for y . Let $y = 2$. If $y = 2$, then $\frac{2y^2 + 5y}{2y + 7} = \frac{2(2)^2 + 5(2)}{2(2) + 7} = \frac{2(4) + 5(2)}{4 + 7} = \frac{8 + 10}{11} = \frac{18}{11}$. Plug $y = 2$ into each of the choices and eliminate any that are not equal to $\frac{18}{11}$.
 Choice (A) is $2 - 1 + \frac{7}{2(2) + 7} = 1 + \frac{7}{11} = \frac{18}{11}$. Keep (A), but try the other answers just in case.
 Choice (B) is $2 + \frac{7}{2(2) + 7} = 2 + \frac{7}{11} = \frac{29}{11}$. Eliminate (B). Choice (C) is $2 + 2 = 4$. Eliminate (C).
 Choice (D) is 2. Eliminate (D). The correct answer is (A).
11. **B** The question asks for an inequality to represent the value of s , the score Renee could receive on a test and still maintain her desired average. For averages, use the formula $T = AN$, in which T is the total, A is the average, and N is the number of things. Here, Renee wants her average for the 3 tests to be 90 or more. To find the total, multiply these numbers to get $T = 3(90)$. Renee has already received scores of 99 and 83, so the total can also be represented as $99 + 83 + s$. Since Renee wants at least this much, the full inequality is $99 + 83 + s \geq 3(90)$. The correct answer is (B).
12. **C** The question asks what is true about the parabola given by the equation $y = -a(x + j) - k$. Look at one part of the parabola equation at a time and use Process of Elimination. First, notice $-a$. The negative sign on the a means the parabola opens downwards. Eliminate (B) and (D). The equation $y = -a(x + j)^2 - k$ is in vertex form, so it is straightforward to determine the vertex. In vertex form $a(x - h)^2 + k$, the vertex is (h, k) . Therefore, the vertex in the given equation is $(-j, -k)$. Eliminate (A). The correct answer is (C).
13. **C** The question asks for an expression that is equivalent to the given one. Rather than doing complicated algebraic manipulation, try some numbers for the variables. Let $x = 4$ and $y = 5$. The given expression becomes $\left(\frac{x}{2} - y\right)^2 = \left(\frac{4}{2} - 5\right)^2 = (2 - 5)^2 = (-3)^2 = 9$. Plug $x = 4$ and $y = 5$ into each of the choices, and eliminate any that are not 9. Choice (A) is $\frac{4^2}{2} + 5^2 = \frac{16}{2} + 25 = 8 + 25 = 33$, so eliminate (A). Choice (B) is $\frac{4^2}{4} + 5^2 = \frac{16}{4} + 25 = 4 + 25 = 29$, so eliminate (B). Choice (C) is $\frac{4^2}{4} - (4)(5) + 5^2 = \frac{16}{4} - 20 + 25 = 4 - 20 + 25 = -16 + 25 = 9$, so keep (C). Choice (D) is $\frac{4^2}{2} - \frac{(4)(5)}{2} + 5^2 = \frac{16}{2} - \frac{20}{2} + 25 = 8 - 10 + 25 = -2 + 25 = 23$, so eliminate (D). The correct answer is (C).
14. **D** The question asks for the value of k in the equation. Since there are numbers in the answer choices, try them out in the equation to see which one yields two real values of x . Start with one of the middle choices. Try (C). If $k = -2$, then $4x^2 - 5x = -2$. Add 2 to both sides to get $4x^2 - 5x + 2 = 0$. Determine whether this has two real solutions. This may be difficult to factor, so use the quadratic formula. To find the solutions to a quadratic in the form $ax^2 + bx + c = 0$, use the formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Plug in $a = 4$, $b = -5$, and $c = 2$ to get

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(4)(2)}}{2(4)} = \frac{5 \pm \sqrt{25 - 32}}{8} = \frac{5 \pm \sqrt{-8}}{8}. \text{ However, since } \sqrt{-8} \text{ does not have}$$

any real values, this does not have any real solutions. Eliminate (C). In order to get a positive number under the square root, a smaller number must be subtracted from b^2 . Try (D). If $k = -1$, then $4x^2 - 5x = -1$. Add 1 to both sides to get $4x^2 - 5x + 1 = 0$. Plug in $a = 4$, $b = -5$, and

$$c = 1 \text{ into the quadratic formula to get } x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(4)(1)}}{2(4)} = \frac{5 \pm \sqrt{25 - 16}}{8} = \frac{5 \pm \sqrt{9}}{8} = \frac{5 \pm 3}{8}.$$

Therefore, $x = \frac{5+3}{8} = \frac{8}{8} = 1$ or $x = \frac{5-3}{8} = \frac{2}{8} = \frac{1}{4}$. There are two real solutions.

Therefore, the correct answer is (D).

15. **C** The question asks for a system of inequalities to model a situation. Translate one piece at a time and use Process of Elimination. Start with the simplest piece. The store owner wants to buy at least three times as many T-shirts as pairs of jeans. Since the number of T-shirts must be at least 3 times the number of pairs of jeans, $t \geq 3j$. Eliminate (B) and (D), which don't include this inequality. The store owner wants to spend no more than \$200. Set what the store owner spends as ≤ 200 . Because the store owner spends \$1.25 on each of the t T-shirts, the store owner spends a total of $1.25t$ dollars on T-shirts. Even though the number of T-shirts is at least 3 times the number of pairs of jeans, there is no need to multiply this number by 3. Eliminate (A), which does not include $1.25t$. Only one choice remains. To better see why (C) is correct, note that the store owner spends \$9.75 on each of the j pairs of jeans she buys, for a total of $9.75j$ dollars spent on jeans. Therefore, she spends a total of $1.25t + 9.75j$ on T-shirts and jeans. Set this sum less than or equal to 200 to get $1.25t + 9.75j \leq 200$. The correct answer is (C).

16. **16** The question asks for the length of \overline{PS} , which is the longer leg of the larger triangle. Because \overline{PQ} is parallel to \overline{RT} , the two triangles are similar, making their corresponding sides proportional. Notice that the smaller right triangle has a leg with length 3 and a hypotenuse of 5. Therefore, this is a 3:4:5 right triangle with \overline{ST} measuring 4. Since \overline{PQ} corresponds to \overline{RT} and \overline{PS} corresponds to \overline{ST} , set up the proportion $\frac{PQ}{RT} = \frac{PS}{ST}$. Substitute the known lengths to get $\frac{12}{3} = \frac{PS}{4}$.

To make the math easier, reduce the left fraction to get $4 = \frac{PS}{4}$. Multiply both sides by 4 to get

$PS = 16$. The correct answer is 16.

17. **1, 2, 3, 4, 6, or 12**

The question asks for one possible value of s in an exponential equation. This indicates that there are likely many answers, but only one is needed. Rather than doing complicated algebra, try out a value for r . To make this as easy as possible, put the two sides of the equation in the same form. Because the left side of the equation is a base raised to an exponent, rewrite the right side as 64^1 to get $r^{\frac{s}{2}} = 64^1$. Since both sides are bases raised to exponents, the two bases could

be equal and the two exponents could be equal, so set $r = 64$ and $\frac{s}{2} = 1$. To find the value of s ,

multiply both sides of $\frac{s}{2} = 1$ by 2 to get $s = 2$. Therefore, one possible answer is 2. There is no need to continue, but other correct answers are $s = 1$ when $r = 4,096$, $s = 3$ when $r = 16$, $s = 4$ when $r = 8$, $s = 6$ when $r = 4$, and $s = 12$ when $r = 2$. All these value of s are correct answers.

18. $\frac{1}{24}$, .041, or .042

The question asks what fraction of the circumference is the length of arc PQ , so set up the fraction $\frac{\text{arc}}{\text{circumference}}$. The question says that the arc length is $\frac{\pi}{6}$, so put this into the numerator to

get $\frac{\frac{\pi}{6}}{\text{circumference}}$. Now find the circumference. The formula for circumference is $C = 2\pi r$. Since

the question says that the radius is 2, plug $r = 2$ into the formula to get $C = 2\pi(2) = 4\pi$. Plug this

into the denominator to get $\frac{\frac{\pi}{6}}{4\pi}$. Rewrite the denominator as a fraction to get $\frac{\frac{\pi}{6}}{\frac{4\pi}{1}}$. To divide

fractions, multiply the numerator by the reciprocal of the denominator to get $\frac{\pi}{6} \times \frac{1}{4\pi} = \frac{\pi}{24\pi}$.

Cancel π in the numerator and denominator to get $\frac{1}{24}$. The correct answer is $\frac{1}{24}$.

19. $\frac{49}{8}$, 6.12, or 6.13

The question asks for the value of a in an equation. To do this, divide both sides by the coefficient of a . Because the coefficient is a fraction, dividing by the coefficient is the same as multiply-

ing by the reciprocal. Multiply both sides by $\frac{7}{4}$ to get $a = \frac{7}{2} \times \frac{7}{4} = \frac{49}{8}$. The correct answer is $\frac{49}{8}$.

20. $\frac{5}{2}$ or 2.5

The question asks how many gallons of a certain juice mix must be added to another mix to make a final mix that contains 40% juice. The type of juice being added is 60% orange juice. Let this amount be x . A juice mix of x gallons that contains 60% orange juice has $\frac{60}{100}x$ gallons of orange

juice. The 5 gallons of a juice mix that have 30% orange juice contain $\frac{30}{100}(5)$ gallons of orange

juice. The solutions are added to a new solution that contains $\frac{60}{100}x + \frac{30}{100}(5)$ gallons of orange

juice. Because the combined juice mix has $x + 5$ total gallons and is 40% orange juice, it contains $\frac{40}{100}(x + 5)$ gallons of orange juice. Set the two equal to get $\frac{60}{100}x + \frac{30}{100}(5) = \frac{40}{100}(x + 5)$.

Multiply both sides by 100 to get $60x + 30(5) = 40(x + 5)$. Simplify the left side and distribute

the 40 on the right side to get $60x + 150 = 40x + 200$. Subtract $40x$ from both sides to get $20x + 150 = 200$. Subtract 150 from both sides to get $20x = 50$. Divide both sides by 20 to get $x = \frac{50}{20}$.

Because this requires more than four spaces to grid in, reduce the fraction. Divide the numerator and denominator by 10 to get that the correct answer is $\frac{5}{2}$.

Section 4: Math (Calculator)

1. **C** The question asks for the graph that could model a situation. Look at the graphs in the answer choices and use Process of Elimination to find the answer. Choice (D) shows that Laura's distance did not change over time. Since this isn't true, eliminate (D). Choice (A) indicates that after resting on the park bench, Laura didn't run any more. This isn't true either, so eliminate (A). The question states that after resting, Laura *ran at a slower rate than she had initially*. This means that her change in distance over time would be less after she rested. The graph in (B) shows that Laura's change in distance over time before and after resting is the same. This doesn't match the statement in the question, so eliminate (B). In (C), Laura's change in distance is less after resting than it was before resting. The correct answer is (C).
2. **D** The question asks for an expression that is equivalent to the given one. Combine one set of terms at a time and eliminate after each one. Start by finding the first term, which is $3y^2 - (-5y^2) = 3y^2 + 5y^2 = 8y^2$. Eliminate (A) and (B), since neither has $8y^2$ as the first term. Now find the last term, which is $-2 - (-6) = -2 + 6 = 4$. Eliminate (C) since it has -4 as the last term. The correct answer is (D).
3. **B** The question asks for the difference between the initial temperatures of Block A and Block B. Since the temperature is found on the y -axis, look for the temperature of each block at time $t = 0$. Block B has an initial temperature of 40 and Block A has an initial temperature of 25. The difference is $40 - 25 = 15$. The correct answer is (B).
4. **A** The question asks how many households receive their Internet service from either Corporate Cable or Global Networks. Corporate Cable serves 47% of households and Global Networks serves 17% of households. Add these to get $47\% + 17\% = 64\%$. Since the total number of households is 2,800, take 64% of that to get $2,800 \times \frac{64}{100} = 1,792$. The correct answer is (A).
5. **C** The question asks for the value of x , the cost in dollars of each carton of ink. Rather than creating an algebraic equation, try the numbers in the answer choices. Start with (B) and plug in 52 for the value of x . If the cost of the cartridges is \$52, 18 cartridges would cost $\$52 \times 18 = \936 . Add on the subscription fee of \$230 to get a total of $\$936 + \$230 = \$1,166$. This is not enough, so eliminate (B) and also (A), which is even smaller. The total was only slightly too small, so try (C) next. If the cartridges cost \$63 each, 18 cost $\$63 \times 18 = \$1,134$. With the subscription fee, the total is $\$1,134 + \$230 = \$1,364$. This matches the information in the question. The correct answer is (C).
6. **D** The question asks for an inequality that is equivalent to the given one. Simplify the inequality to find the answer. Since each term has a greatest common factor of 4, divide each term by 4 to get $4a + 5b > 3$. This inequality matches (D). The correct answer is (D).

7. **B** The question asks for the number of nautical miles in the first stage of Amelia Earhart's trip. Rather than creating an algebraic equation, try the numbers in the answer choices. Start with (B) and plug in 283 for the number of nautical miles in the first stage. If the first stage was 283 nautical miles, then the second stage was $283 + 110 = 393$ nautical miles. Add the two stages together to get $283 + 393 = 676$ nautical miles. This matches the information in the question. The correct answer is (B).
8. **C** The question asks for the cost of oranges, in dollars per pound. The total weight of the carton of oranges is 27.3 pounds, but 9.6 of those pounds represent the weight of the carton itself. Since $27.3 - 9.6 = 17.7$ pounds, the oranges by themselves weigh 17.7 pounds. The cost of the carton is \$46.25. Divide to find $\frac{\$46.25}{17.7 \text{ pounds}} = \2.61 per pound. This is closest to (C). The correct answer is (C).
9. **C** The question asks what information is true about the board's survey. Since only marine biologists were included in the sample group, the results of the survey cannot be extrapolated to all scientists. Even though a majority of the marine biologists were in favor of the aquatic exhibit, this does not mean that a majority of all the scientists would also be in favor of the aquatic exhibit. Because of this, eliminate (B). For the survey to be truly representative of all the scientists, the sample group needs to include other scientists besides marine biologists. Adding more marine biologists would not make the sample group more representative, so eliminate (A). Using a sample group that contains no marine biologists at all would also not be representative, so eliminate (D). Since the sample group used in the survey was not representative of all the scientists, the survey was biased. The correct answer is (C).
10. **A** This question asks for the fraction of adopted cats that were black. First, find the total number of adopted cats, which is $9 + 7 = 16$. Of those 16 cats, 7 were black. Therefore, the fraction of adopted cats that were black is $\frac{7}{16}$. The correct answer is (A).
11. **B** The question asks for the meaning of d in the function $a(t) = c - dt$. Label what is known in the equation. The function a is the extent, in millions of square kilometers, of Arctic sea ice. The variable t represents the number of years since the study began. Next, use Process of Elimination. Constant d is multiplied by t . In a linear equation, the coefficient on the variable is the slope, which is the rate of change. Choices (A), (C), and (D) refer to a specific amount, not the change *per year*. Only (B) indicates that d is the rate of change. The correct answer is (B).
12. **C** The question asks for the best linear model for the extent from Year 7 to Year 11. Use the equations in the answer choices to try out values from the table during this period. Since the extent in Year 7 was 5.39, plug in $t = 7$ into each choice, and eliminate any for which a is not close to 5.39. Choice (A) is $a = 5 - 0.21(7) = 3.53$. This is not close to 5.39, so eliminate (A). Choice (B) is $a = 7 - 0.13(7) = 6.09$. This is not close to 5.39, so eliminate (B). Choice (C) is $a = 10 - 0.64(7) = 5.4$. This is close to 5.39, so keep (C). Choice (D) is $a = 15 - 1.82(7) = 2.26$. This is not close to 5.39, so eliminate (D). The correct answer is (C).
13. **A** The question asks for the period for which the average decrease in the ice extent was the greatest. Look at the years from the answer choices on the graph and estimate. A great decrease would be a line that slopes down sharply from left to right. Choice (A) shows a sharp decrease from Year 4 to Year 5, so keep (A). Choice (B) also shows a decrease from Year 7 to Year 8, but it is not as steep as the one in (A). Eliminate (B). Choice (C) shows a decrease from Year 9 to Year 10, but it

is not as steep as the one in (A). Eliminate (C). Choice (D) shows a decrease from Year 12 to Year 13, but it is not as steep as the one in (A). Eliminate (D). The correct answer is (A).

14. **D** This question asks for the sum of the values of c and d in the solution to the system of equations. Since the equations have the same coefficient on the d terms with opposite signs, add the two equations together to eliminate d .

$$\begin{array}{r} 9c + 5d = 22 \\ + 7c - 5d = 10 \\ \hline 16c \qquad = 32 \end{array}$$

Divide both sides by 16 to get $c = 2$. Plug $c = 2$ back into the top equation to get $9(2) + 5d = 22$. Simplify to $18 + 5d = 22$. Subtract 18 from both sides to get $5d = 4$. Divide both sides by 5 to get $d = \frac{4}{5}$.

The value of $c + d$ is $2 + \frac{4}{5} = \frac{10}{5} + \frac{4}{5} = \frac{14}{5}$. The correct answer is (D).

15. **A** The question asks for the ratio that is equivalent to $\frac{WZ}{WX}$. Start this question by filling in the missing

angle measurements for $\angle WXZ$ and $\angle YXZ$ by using the rule that there are 180° in a triangle. $\angle WXZ$ is 28° and $\angle YXZ$ is 62° . Since triangle WXZ and triangle XYZ have identical angle measurements, they are similar triangles. Start by determining what the numerator of the ratio represents. Side WZ is the side opposite the 28° angle in triangle WXZ and corresponds to side XZ of triangle XYZ , since side XZ is opposite the 28° angle in triangle XYZ . Therefore, WZ corresponds to XZ . Eliminate (B) and (D), since these answers do not have the correct numerator. As for the denominator of the ratio, side WX represents the hypotenuse of triangle WXZ . In triangle XYZ , the hypotenuse is represented

by XY . Therefore, WX corresponds to XY . Taken together, $\frac{WZ}{WX} = \frac{XZ}{XY}$. The correct answer is (A).

16. **B** The question asks for an equation to model the values in the table. Rather than trying to create an equation, pick a value from the table to test out the answers. Choose an easy number to work with,

like $s = 0$, and look for an equation that gives $t = \frac{31}{2}$. Choice (A) becomes $t = \frac{31}{2} \times (6)^0 = \frac{31}{2}(1) =$

$\frac{31}{2}$. This equals $\frac{31}{2}$, so keep (A). Choice (B) becomes $t = 6(0) + \frac{31}{2} = 0 + \frac{31}{2} = \frac{31}{2}$. This equals $\frac{31}{2}$,

so keep (B). Choice (C) becomes $t = \frac{1}{4} \times \left(\frac{31}{2}\right)^0 = \frac{1}{4}(1) = \frac{1}{4}$. This does not equal $\frac{31}{2}$, so eliminate

(C). Choice (D) becomes $t = \frac{1}{6}(0) - 4 = 0 - 4 = -4$. This does not equal $\frac{31}{2}$, so eliminate (D). Test

a second value to see if the answer is (A) or (B). Choose another easy value to plug in, like $s = 1$, and

look for an equation that gives $t = \frac{43}{2}$. Choice (A) becomes $t = \frac{31}{2}(6)^1 = \frac{31}{2}(6) = \frac{186}{2}$. This does

not equal $\frac{43}{2}$, so eliminate (A). Choice (B) becomes $t = 6(1) + \frac{31}{2} = 6 + \frac{31}{2} = \frac{43}{2}$. Choice (B) equals

$\frac{43}{2}$. Therefore, the correct answer is (B).

17. **B** The question asks for all the possible values for box width. The question states that the box width must be at least 3 inches. Use this information to eliminate (D), since it allows for box widths that are less than 3 inches. Now, determine what possible box dimensions meet the requirements of a width of at least 3 inches and a height of at least 12 inches using the box size formula, $h + 3w = 30$. If the width of the box is 3 inches, then the height is $h + (3)(3) = 30$, or $h + 9 = 30$. Subtract 9 from both sides to get $h = 21$. This means that when a box has a width of 3 inches, the height of the box is 21 inches. Since 21 inches is more than 12 inches, these dimensions meet the requirement. Therefore, 3 inches is a possible width for this requirement. Use this information to eliminate (A), since 3 inches is not included in this answer choice. According to the box size formula, as the width of the box increases, the height of the box decreases. Therefore, to find the maximum possible width of the box, plug in the least possible height of 12 inches to get $12 + 3w = 30$. Subtract 12 from both sides to get $3w = 18$. Divide both sides by 3 to get $w = 6$. Therefore, 6 inches is a possible box width, and it is also the greatest possible box width given the restrictions in the question. Since 6 inches must be the greatest possible width, eliminate (C), which allows for unlimited box widths. The correct answer is (B).
18. **B** The question asks for the width of the box. Rather than doing complicated algebraic manipulations, try the values in the answer choices. Use the box size formula, $h + 3w = 30$, to find the corresponding height for each answer choice. The question states that this height must be between 8 and 10 inches. Start with (B) and make $w = 7.2$ inches. The box size formula becomes $h + 3(7.2) = 30$, which simplifies to $h + 21.6 = 30$. Subtract 21.6 from both sides to get $h = 8.4$. Since 8.4 is between 8 and 10, keep (B). Now use the other information in the question to determine if the answer is (B). The question says that the stacked display has a total height of 7 feet, which is $7 \times 12 = 84$ inches. Since the height of the boxes is equal to the height of each level, divide the total height of the stacked display by the height of the box to find the number of levels. The question states that the stacked display must have an even number of levels. If the boxes have a height of 8.4 inches, divide to find $\frac{84}{8.4} = 10$ levels. This is an even integer, so the value for the width in (B) satisfies all the requirements in the question. The correct answer is (B).
19. **A** This question asks for the box width in terms of the box height. To find the answer, rearrange the box size formula in terms of w . The formula states that $h + 3w = 30$. Start by subtracting h from both sides to get $3w = 30 - h$. Divide both sides by 3 to get $w = \frac{30 - h}{3} = \frac{1}{3}(30 - h)$. This matches (A). The correct answer is (A).
20. **C** The question asks for the conclusion that is best supported by the data. The main result of the study was that of the 250 red maple trees measured in the sample, 40% had a circumference less than 35 inches. This data is specific to one type of tree, the red maple tree, and cannot be extrapolated to other types of trees or generalized to all the trees in the forest. Use this logic to eliminate (A), (B), and (D), which draw conclusions for *all the trees in the forest*. The data from the study can only be used to support conclusions about red maple trees. Since (C) is the only choice that specifically references red maple trees, the correct answer is (C).
21. **A** The question asks for the product of the solutions to an equation. To solve the equation in the question, set each binomial equal to 0 and solve. For the first binomial, $y + 4 = 0$, so subtract 4 from both sides to get $y = -4$. For the second binomial, $y - 0.3 = 0$, so add 0.3 to both sides to get $y = 0.3$. Therefore, there are two solutions to the equation, $y = -4$ or 0.3. A *product* is the result of multiplication, so multiply these values to get $-4 \times 0.3 = -1.2$. The correct answer is (A).

22. **B** The question asks how many times the gymnast was at a height of 15 feet. Find 15 feet on the y -axis and draw a line across. Look for the number of times this line intersects with the graph. It intersects twice: once at about 4 seconds and a second time at about 5.5 seconds. Since the gymnast was at a height of 15 feet exactly two times, the correct answer is (B).
23. **C** The question asks by what percent the writer's salary increased. Rather than creating an equation with the awkward numbers given, use the percents in the answer choices, looking for the answer choice that gives the writer's new salary of \$88.51. Start with (B). If the writer's original salary of \$81.34 increased by 8.1%, her salary would increase by $\$81.34 \times \frac{8.1}{100} = \6.59 . Add this increase to her original salary to get a new salary of $\$81.34 + \$6.59 = \$87.93$. This is not equal to the new salary of \$88.51, so eliminate (B). Additionally, since the salary calculated with (B) is too small, eliminate (A) as well. Try (C) next. If the writer's original salary of \$81.34 increased by 8.8%, her salary would increase by $\$81.34 \times \frac{8.8}{100} = \7.16 . Add this increase to her original salary to get a new salary of $\$81.34 + \$7.16 = \$88.50$. This is closest to the new salary of \$88.51. The correct answer is (C).
24. **D** The question states that the function is a linear function and asks for the value of $b(6)$, or the value of y when $x = 6$. The function is linear, so use two points to find the slope of the line, which is defined as $\frac{y_2 - y_1}{x_2 - x_1}$. Using the second and third points on the table, slope = $\frac{21 - 5}{7 - 3} = \frac{16}{4} = 4$. Plug this value and point (3, 5) into $y = mx + b$ to get $5 = 3(4) + b$ or $5 = 12 + b$. Therefore, $b = -7$ and the equation of the line is $y = b(x) = 4x - 7$. Now find $b(6)$, which is $4(6) - 7 = 24 - 7 = 17$. The correct answer is (D).
25. **C** The question asks for the median age, and the median is defined as the middle number in a numerical list. The table contains 35 numbers for age, but displays them as frequency. Because there are 35 numbers for age, the middle age will be the 18th age in the table. Start counting from the left, adding up the frequency for each age: $1 + 1 + 2 + 2 + 1 + 2 + 1 + 5 + 2 = 17$. This list includes all ages up to and including 52. The 18th age is 54, so the median age in the table is 54. The correct answer is (C).
26. **D** This question asks for the radius of a circle based on its equation. Start by simplifying the equation by dividing each term by 4 to get $x^2 + 5x + y^2 - 3y = 27.5$. The standard form for the equation of a circle with center (h, k) and radius r is $(x^2 - h)^2 + (y^2 - k)^2 = r^2$. In order to factor this equation into standard form, complete the square. For each x and y , take half of the coefficient of the middle term, square it, and add it to both sides. For the x -terms, $x^2 + 5x$, add $\left(\frac{5}{2}\right)^2 = 6.25$ to both sides. For the y -terms, $y^2 - 3y$, add $\left(-\frac{3}{2}\right)^2 = 2.25$ to both sides. The new equation will be $(x^2 + 5x + 6.25) + (y^2 - 3y + 2.25) = 27.5 + 6.25 + 2.25$. The simplified expression in standard form is $(x^2 + 2.5)^2 + (y^2 - 1.5)^2 = 36$. Therefore, $r^2 = 36$ and $r = 6$. The correct answer is (D).
27. **A** The question asks for the resistance of a certain resistor in a circuit diagram. Focus on Resistors X and Z since the question does not ask about Resistor Y. Start with the information in the figure, which shows that the current through Resistor X is 5 amperes and the current through Resistor Z is 15 amperes. According to the question, this means that the current ratio, $a:b$, is 5:15, which can be reduced to 1:3. Therefore, the current ratio of Resistor X to Resistor Z is 1:3. How-

ever, the question is asking about the resistance. The resistance ratio is defined as $b:a$. Since the current ratio, $a:b$, is 1:3, the resistance ratio, $b:a$, is 3:1. Therefore, the resistance ratio of Resistor X to Resistor Z is 3:1. The question states that the resistance of Resistor X is 24 ohms.

Use the resistance ratio to find the resistance of Resistor Z: $\frac{3}{1} = \frac{24}{x}$. Cross-multiply to get

$3x = 24$, then divide both sides of the equation by 3 to get $x = 8$. The resistance of Resistor Z is 8. The correct answer is (A).

28. **D** The question asks for the orbital ratio, specifically in seconds per meter. Label the variables given in the equation, where P is seconds and a is meters. To get *seconds per meter*, divide P by a to get $\frac{36 \times 10^{-8} a \sqrt{a}}{a}$. Cancel the a in the numerator and the a in the denominator to get $36 \times 10^{-8} \sqrt{a}$.

The correct answer is (D).

29. **A** This question asks for the equation that best models the data in the scatterplot. All the equations in the answer choices are parabolas, and this matches the shape of the data in the scatterplot. The scatterplot data is shaped as a parabola opening upwards. Since a parabola that opens upwards must have a positive x^2 term, eliminate (C) and (D). Now check the constant term in the equations. For an equation in the xy -plane, a positive constant term means that the graph crosses the y -axis above the x -axis, and a negative constant term means that the graph crosses the y -axis below the x -axis. Since the graph of the scatterplot data would cross the y -axis well above the x -axis, the constant term must be positive. Eliminate (B), since the constant term is -483.27 . Choice (A) has a positive constant term of 483.27. The correct answer is (A).
30. **B** The question asks for the coordinates of the two points on the number line. Each point is 5 units away from the point -6 . Since $-6 + 5 = -1$ and $-6 - 5 = -11$, the two points on the number line must be -1 and -11 . Try out these values for y and use Process of Elimination to find the answer. Start with -1 . Choice (A) becomes $|-1 - 6| = 5$, which simplifies to $|-7| = 5$. Since this is false, eliminate (A). Choice (B) becomes $|-1 + 6| = 5$, which simplifies to $|5| = 5$. Since this is true, keep (B). Choice (C) becomes $|-1 - 5| = 6$, which simplifies to $|-6| = 6$. Since this is true, keep (C). Choice (D) becomes $|-1 + 5| = 6$, which simplifies to $|4| = 6$. Since this is false, eliminate (D). Now test -11 in (B) and (C). Choice (B) becomes $|-11 + 6| = 5$, which simplifies to $|-5| = 5$. Since this is true, keep (B). Choice (C) becomes $|-11 - 5| = 6$, which simplifies to $|-16| = 6$. Since this is false, eliminate (C). The correct answer is (B).

31. **247, 248, 249, 250, or 251**

This question asks for the volume of the ice cream cone. The reference box at the beginning of the math section gives the formula for the volume of a cone as $V = \frac{1}{3} \pi r^2 h$. The question states that r is 4 centimeters and that h is between 14.75 and 15 centimeters. Choose a value of h to work with, for example, 14.8. Plug the known values into the formula to get $V = \frac{1}{3} \pi (4)^2 (14.8)$. Solve to get $V = 247.97$ or 248. Depending on which value is used for height, the correct answer could be 247, 248, 249, 250, or 251.

32. **8** This question asks for the number of coworkers in the original group. Rather than creating an algebraic equation, try out different numbers for this value to solve the question. Try 10, since \$400 divides evenly among 10 people. This would make the cost \$40 per person. The question states that after 3 people decide not to contribute, the cost increases by \$30 per person. In this scenario, that would mean the new cost should be \$70 per person. However, after 3 people decide not to contribute, 7 people remain, and the \$400 is divided by 7, making each person's share approximately \$57. Since \$57 is smaller than \$70, 10 people is incorrect. Try a smaller number to make each person's share greater. Try 8 people, which would make the original cost per person \$50. If 3 people drop out, the cost should increase by \$30 per person. In this scenario, that would mean the new cost is \$80 per person. After 3 people decide not to contribute, 5 people remain, and the \$400 is divided by 5, making each person's share \$80. Since \$80 is equal to \$80, 8 people were in the original group. The correct answer is 8.

33. **11** This question asks for the value of k in the equation. Simplify the equation by distributing the 3 and negative sign to get $12k - 30 - 26 - 5k = 21$. Combine like terms to get $7k - 56 = 21$. Add 56 to both sides to get $7k = 77$. Divide by 7 to get $k = 11$. The correct answer is 11.

34. $\frac{6}{5}$ or 1.2

The question asks for the y -coordinate of the y -intercept of the line. The y -intercept is the point where $x = 0$. To find the y -intercept, plug in 0 for x . This gives $-\frac{3}{4}(0) + \frac{5}{6}y = 1$, which can be simplified to $\frac{5}{6}y = 1$. Multiply both sides by 6 to get $5y = 6$. Divide both sides by 5 to get $y = \frac{6}{5}$. The y -intercept is $\left(0, \frac{6}{5}\right)$, and its y -coordinate is $\frac{6}{5}$. This is the correct answer.

35. **5.8** The question asks for the value of h in the table. Start by finding the mean of the heights of Robert's rose bushes. For averages, use the formula $T = AN$, in which T is the total, A is the average, and N is the number of things. The total is $3.9 + 6.1 + 4.4 + 5.3 + 5.8 = 25.5$, and the number of things is 5. The formula becomes $25.5 = A(5)$, so $A = 5.1$. The mean of the heights of Robert's rose bushes is 5.1, and the question states that this value is 0.3 feet greater than the mean of the heights of Louis's rose bushes. Since $5.1 - 0.3 = 4.8$, the mean of the heights of Louis's rose bushes is 4.8. For Louis, the formula becomes $T = (4.8)(5) = 24$. The total for Louis can also be written as $h + 4.5 + 5.7 + 4.2 + 3.8$, which simplifies to $h + 18.2$. Set these two totals equal to get $h + 18.2 = 24$. Subtract 18.2 from both sides to get $h = 5.8$. The correct answer is 5.8.

36. **6** This question asks for the value of c . Since the point (c, c) can be found on the graph of $y = -4x^2 + 25x$, plug in c for both x and y . This gives $c = -4c^2 + 25c$. Subtract $25c$ from both sides to get $-24c = -4c^2$. Divide both sides by $-4c$ to get $6 = c$. The correct answer is 6.

37. **750** The question asks how much more money John spent on rent than on office supplies. Add up the percents that have already been allocated to get $10\% + 40\% + 35\% = 85\%$. Notice that 15% remains unaccounted for. This 15% represents the \$450 that was spent on utilities. This means that 15% of John's total monthly expenditures equaled \$450. Set up an equation to find John's total monthly expenditures:

$\left(\frac{15}{100}\right)total = \450 . Simplify to get $(0.15)total = \$450$. Divide by 0.15 to get $total = \$3,000$.

Now answer the question. John spent 35% of his monthly expenditures on rent, which is

$\left(\frac{35}{100}\right)(\$3,000) = \$1,050$. He spent 10% of his monthly expenditures on office supplies, which is

$\left(\frac{10}{100}\right)(\$3,000) = \$300$. The difference between rent and office supplies is $\$1,050 - \$300 = \$750$. The correct answer is \$750.

38. 20 The question asks for the value of k , which represents the number of kindergarten students enrolled in 2011. Since the enrollment triples each year, divide by 3 to find the number of students enrolled each year. If there were 540 students enrolled in 2014, then there were $\frac{540}{3} = 180$ students enrolled in 2013. This means that there were $\frac{180}{3} = 60$ students enrolled in 2012 and $\frac{60}{3} = 20$ student enrolled in 2011. The correct answer is 20.