

Chapter 6  
Practice Test 2:  
Answers and  
Explanations

## PRACTICE TEST 2 ANSWER KEY

Section 1: Reading		Section 2: Writing & Language		Section 3: Math (No Calculator)		Section 4: Math (Calculator)					
1.	D	27.	D	1.	C	11.	B	1.	C	20.	A
2.	A	28.	A	2.	D	12.	D	2.	D	21.	A
3.	D	29.	A	3.	B	13.	D	3.	A	22.	B
4.	C	30.	B	4.	C	14.	A	4.	C	23.	D
5.	D	31.	A	5.	A	15.	B	5.	D	24.	D
6.	B	32.	B	6.	D	16.	82	6.	B	25.	C
7.	C	33.	B	7.	D	17.	15	7.	D	26.	B
8.	B	34.	B	8.	B	18.	4, 8, 12, 16, or 20	8.	C	27.	B
9.	C	35.	D	9.	D	19.	$\frac{17}{6}$ or 2.83	9.	A	28.	C
10.	A	36.	D	10.	C	20.	1	10.	A	29.	A
11.	A	37.	A	11.	A			11.	B	30.	A
12.	D	38.	B	12.	C			12.	C	31.	9
13.	A	39.	A	13.	A			13.	C	32.	15
14.	C	40.	C	14.	D			14.	B	33.	12
15.	C	41.	D	15.	A			15.	B	34.	12
16.	A	42.	D	16.	B			16.	B	35.	60
17.	B	43.	A	17.	D			17.	D	36.	575
18.	A	44.	C	18.	B			18.	C	37.	7,000
19.	A	45.	A	19.	D			19.	C	38.	5,741
20.	A	46.	D	20.	C						
21.	C	47.	B	21.	D						
22.	C	48.	C	22.	D						
23.	A	49.	A								
24.	A	50.	C								
25.	B	51.	D								
26.	B	52.	C								

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## PRACTICE TEST 2 EXPLANATIONS

### Section 1: Reading

1. **D** The question asks for the main idea of the passage. Because this is a general question, it should be done after all the specific questions have been completed. The passage tells the story of a knight, Don Quixote, and his squire Sancho Panza. They encounter a field of windmills, which Don Quixote believes to be giants he must battle. Eliminate any answers that aren't consistent with this idea. Eliminate (A) because neither Don Quixote nor Sancho Panza *decide[s] to pretend* that he is entering battle. Choice (B) can be eliminated because the giants are not actually there. Choice (C) might initially look good, because the two men do have an argument. However, the text identifies Sancho as Don Quixote's squire, not another knight, so eliminate (C). Choice (D) includes the battle of the second half of the passage as well as the different perception of reality of the first half (and the very end). The correct answer is (D).
2. **A** The question asks about the function of the opening sentence. Carefully read the sentence and the surrounding window to determine the function of the sentence: *At this point they came in sight of thirty or forty windmills that are on that plain.* The author tells the reader that these are windmills, not giants, as Don Quixote thinks, so the function of the sentence is to let the reader know the reality of the situation. Choice (A) mentions the *true setting*, which is consistent with this prediction, so keep it. Choice (B) mentions *technological advances* and their importance, which are not discussed in this passage. The first half of (C) might initially look attractive because it describes the field, but the answer can be eliminated because there is no *great battle*. Choice (D) can be eliminated because there is no *detailed imagery*. The correct answer is (A).
3. **D** The question asks how the main character's focus changes from paragraph 1 to paragraph 6. Carefully read the window to determine how Don Quixote's focus changes. At the beginning of the window, Don Quixote sees the windmills, calling them *monstrous giants*, and telling Sancho he intends to *engage in battle*. When Sancho tries to tell him that they are in fact *not giants but windmills*, Don Quixote calls him a coward. Eliminate any answer choices that aren't consistent with that change in focus. Eliminate (A) because there are no *recollections of past victories* or *prospects of imminent defeat* in the text. Choice (B) mentions *money* and *God*, neither of which are consistent with the prediction. Choice (C) can be eliminated because neither *generalizations about successful battle* nor *specific rules of combat* are part of Don Quixote's focus. Choice (D) mentions an *evaluation of an enemy*, which is consistent with Don Quixote misidentifying the windmills as giants, and an *argument with his faithful companion*. The correct answer is (D).
4. **C** The question asks about the effect of the phrase *sweep so evil a breed from off the face of the earth*. Locate the phrase and carefully read the window. Don Quixote explains that he intends to fight the "giants," sweeping them *from the face of the earth*. Don Quixote's exaggerations show that he sees himself as a brave and powerful knight, regardless of what the truth might be. Eliminate any answer choices that aren't consistent with the idea of Don Quixote having an inflated view of himself. Choice (A) can be eliminated because the story is not *a horror story*. Eliminate (B) because Don Quixote is not *a prophet*, nor has he received any *orders from God*. Choice (C) is consistent with the prediction, so keep it. Eliminate (D) because Quixote is not presented as a religious fanatic. The correct answer is (C).
5. **D** The question asks how Don Quixote would characterize his charge into battle. He says he plans to *engage [the giants] in fierce and unequal combat*. The battle will be *unequal* because there are



- 30 or 40 of them, and he is only *a single knight*. He also calls the giants *cowards*. Don Quixote would likely characterize his charge as “bold” or “heroic.” Eliminate any answer choices that aren’t consistent with that prediction. Choice (A), *ridiculous*, might be consistent with what Sancho Panza thinks, but the question asks about Don Quixote, so eliminate (A). Choice (B), *insane*, can be eliminated for the same reason. Choice (C), *unexceptional*, is not consistent with the prediction, so eliminate it. Choice (D), *brave*, fits the prediction. The correct answer is (D).
6. **B** The question asks how Sancho Panza views Don Quixote. Notice the next question is a best evidence question, so Q6 and Q7 can be answered in tandem. Look at the answers for Q7 first. The lines in (7A) show that Don Quixote views Sancho as a *friend*, but the question asks how Sancho views Don Quixote. Eliminate (7A). Choice (7B) again shows how Don Quixote views Sancho Panza, so it can also be eliminated. Choice (7C) shows Sancho yelling after Don Quixote that they *most certainly were windmills and not giants*. Those lines support (6B), so draw a line connecting those two answers. Choice (7D) describes Don Quixote’s charge at the windmills but does not mention Sancho, so eliminate (7D). Without support from Q7, (6A), (6C), and (6D) can all be eliminated. The correct answers are (6B) and (7C).
7. **C** (See explanation above.)
8. **B** The question asks why Don Quixote does not believe Sancho Panza’s description of the “giants.” Use the line reference to carefully read the window. Panza says they are windmills, and in lines 21–22, Quixote says that Panza is *not used to this business of adventures* and suggests that he might be *afraid*. Look for an answer that is consistent with the idea that Don Quixote believes Sancho is afraid. Choice (A) mentions *eyesight*, which does not fit the prediction, so eliminate it. Choice (B) mentions *not as brave*, which is consistent with *afraid*. Keep (B). Although Don Quixote mentions Friston’s schemes, he never indicates whether he believes Sancho also knows about the schemes, so (C) can be eliminated. Choice (D) can be eliminated because Quixote suggests that Panza might start praying, not that he is doing so now. The correct answer is (B).
9. **C** The question is a best evidence question, so simply refer back to the lines used to predict the answer to the previous question. Lines 21–22 were used to answer the question. The correct answer is (C).
10. **A** The question asks about the main effect of referring to Friston. Use that name as a lead word to locate the window. Carefully read to determine the effect of referring to Friston. Quixote says that this same Friston *who carried off my study and books* has also *turned these giants into mills in order to rob me of the glory of vanquishing them*. Referring to Friston shows how Quixote can maintain his ideas about his own reality: even though he can now see that the things he attacked are really windmills, his fanciful view of the world has not changed. Choice (A) mentions that the reader gains insight into how Quixote perceives reality. This is consistent with the prediction, so keep it. Choice (B) says mentioning Friston reveals the *evil in the world*. Since it is unclear whether Friston is even real, and since the author does not say Friston is evil, eliminate (B). Choice (C) can be eliminated because there is no *detailed history* provided. Choice (D) again mentions how evil results from *personal misunderstandings*. This is not supported by the passage and can be eliminated. The correct answer is (A).
11. **A** The question asks about the central problem women have had, according to Anthony. Since this is a general question, do it after all the specific questions have been completed. According to Anthony, women have been denied the right to vote, *in direct violation of the spirit and letter of the declarations of the framers of this government, every one of which was based on the immutable principle of equal rights to all*. Eliminate any answer choices that aren’t consistent with this prediction. Choice (A) is consistent, so keep it. Choice (B) can be eliminated because she is not concerned



- about whether or not women are allowed to participate in Congress. Eliminate (C) because her concerns are not about the differences in the temperaments of men and women. Choice (D) mentions *equal access*, but Anthony's concern is about voting, not schools. Eliminate (D). The correct answer is (A).
12. **D** The question asks what the author means by *grand documents*. Use the given line reference to find the window and read carefully. The passage mentions the *Declaration of Independence*, the *United States Constitution*, and other documents, so choose an answer that means *important documents from U.S. history*. Choice (A) is too literal and too specific. Choice (B) does not match the prediction, so eliminate it. Choice (C) can also be eliminated because there's no mention of *personal notes*. Choice (D) refers to *important legislation the country was founded on*, which matches the prediction. The correct answer is (D).
13. **A** The question asks what Anthony claimed to be a purpose of the Declaration of Independence. Use the lead words *Declaration of Independence* to find the window and read carefully. Lines 32–34 say that the Declaration of Independence, along with other documents, *propose to protect the people in the exercise of their God-given rights*. This is directly stated by (A), so keep that answer choice. Choice (B) can be eliminated because it's the opposite of what the text says. Choice (C) can be eliminated for the same reason. There is no mention of *prevention of violence*, so eliminate (D). The correct answer is (A).
14. **C** The question asks for the best evidence for the answer to Q13. Lines 32–34 were used to answer the previous question. The correct answer is (C).
15. **C** The question asks what the phrase *the exercise* means in line 33. Go back to the text, find *the exercise*, 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 that the documents *protect the people in the exercise of their...rights*. The missing word must mean something like “the practice.” Choice (A), *an activity*, can be eliminated because there is no activity discussed. Eliminate (B) because there is no *workout*. Choice (C) is consistent with the prediction, so keep it. Choice (D) can be eliminated because *process* is not consistent with *practice* in this context. The correct answer is (C).
16. **A** The question asks for a logical inference regarding the general function of the term *natural right*. Use the line reference to find the window and read carefully. The complete phrase is *natural right of all to the ballot*, and the sentence ends with a mention of the *right to vote*. The phrase refers to the idea that all humans should be able to vote, regardless of gender. Choice (A) is consistent with this prediction, so keep it. Choice (B) can be eliminated because there is no criticism implied in the phrase. Eliminate (C) because there is no discussion about the *right to bear arms*, and (D) can also be eliminated because there is no mention of the *Fifth Amendment*. The correct answer is (A).
17. **B** The question asks what the word *class* means in line 59. Go back to the text, find *class*, 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. Anthony is discussing how women are not allowed to vote, so they are a *disenfranchised class*. A word that means “crowd” or “part of society” would make sense, so eliminate anything that isn't consistent with that prediction. Choice (A), *subject*, can be eliminated because there is no discussion of a ruling class. Choice (B) is consistent with the prediction, so keep it. Choice (C) can be eliminated because this is not a discussion of scientific classifications. Eliminate (D) because it's a definition of *class* that isn't consistent with the context. The correct answer is (B).

18. **A** The question asks what the *situation* described by Anthony suggests *the U.S. government* has done. Notice that the following question is a best evidence question, so it can be answered in tandem with Q19. Look at the answers for Q19 first. The lines in (19A) mention that the author is accused of the *crime of having voted...without having a lawful right to vote*, so look to see if those words support any answers in Q18. Choice (18A) mentions *laws denying women's suffrage*. Since "suffrage" means "the right to vote," connect those two answers. Next, consider the lines for (19B). The speaker quotes selections from the Declaration of Independence about being *created equal* and having *rights* such as *life, liberty, and the pursuit of happiness*. This is not referenced in any choices in Q18, so eliminate (19B). The lines in (19C) refer to the need for revolution when any government becomes repressive. This may weakly support (18D), so connect those two answers. Next, consider lines for (19D). These lines do not discuss the U.S. government and therefore do not answer Q19. Eliminate (19D). Without any support from Q19, (18B) and (18C) can be eliminated. Consider the remaining pairs of answer choices in the context of the passage. While both (18A) and (18D) seem to be something that the author says that the government has done, the question asked what the author says about the government given the situation described in the text. Since that situation is the government unjustly barring women from voting, eliminate (18D) and its support in (19C). The correct answers are (18A) and (19A).
19. **A** (See explanation above.)
20. **A** The question asks for the primary contrast in paragraph 7. Carefully read the given lines. They begin with *the whole people* and then state that *one-half of the people* have been made powerless by *the other half*. Choice (A) is a clear paraphrase of the text, so keep it. Choice (B) can be eliminated because the contrast is about power, not money. Choice (C) does not contrast people, nor does (D), so both of those answers can be eliminated. The correct answer is (A).
21. **C** The question asks what the word *trend* most nearly means as used in line 6. Go back to the text, find the word *trend* and cross 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, *For the Nation as a whole, there is neither a pronounced downward nor upward trend. Water levels rise in wet periods and decline in dry periods.* Therefore, the word *trend* could be replaced with a word such as "pattern." Neither *style*, *result*, nor *preference* matches "pattern," so eliminate (A), (B), and (D). Note that (A) is a Could Be True trap answer based on another meaning of *trend* that is not supported by the text. Keep (C) because *tendency* matches "pattern." The correct answer is (C).
22. **C** The question asks what the passage states about the occurrence of ground water. Notice that this is the first question in a paired set, so it can be done in tandem with Q23. Consider the answers to Q23 first. The lines for (23A) reference how water levels *rise in wet periods and decline in dry periods* and *average about the same as they did in the early part of the twentieth century*, especially in the *humid central and eastern parts of the country*. This supports (22C), so connect those two answers. The lines for (23B) discuss techniques for finding ground water. These lines don't support any of the answer choices for Q22, so eliminate (23B). The lines for (23C) mention using the *landscape* and *hills* to find ground water. Choice (22B) mentions using landscape features to locate water, so connect (23C) and (22B). The lines for (23D) discuss *locating favorable conditions for ground-water development* by mapping the *distribution and positions of the different kinds of rocks*. This evidence does not support any of the choices in Q22, so eliminate (23D). Look at the remaining pairs of answer choices and use the text to make a decision about which pair best answers the question. Choice (22B) is not actually supported by the text, because the *landscape features* mentioned in the text are *hills* and *valleys*, rather than *existing wells*. This eliminates (22B) and (23C). The correct answers are (22C) and (23A).

23. **A** (See explanation above.)
24. **A** The question asks why *the capability to assess the nation's water supplies is significant*. Notice that this is the first question in a paired set, so it can be answered in tandem with Q25. Consider the answers to Q25 first. The lines for (25A) indicate that *ground water is being withdrawn at rates that cause water levels to decline* in some, but not all, areas of the country. These lines don't mention assessing the nation's water supplies, so eliminate (25A). The lines for (25B) say that the results of the investigations are *indispensable...for those involved in water-resources planning*. These lines support (24A), so draw a line connecting those two answers. The lines for (25C) are about *sedimentary rocks*. These lines don't mention assessing the nation's water supplies, so eliminate (25C). The lines for (25D) say that chemical analysis on the wells provides information on the *quality of water*. Although this is information about the water, these lines don't connect with any answers in Q24. Eliminate (25D). Without support from Q25, (24B), (24C), and (24D) can all be eliminated. The correct answers are (24A) and (25B).
25. **B** (See explanation above.)
26. **B** The question asks for the main purpose of the third paragraph. Read a window around the given line reference. The second paragraph discusses the importance of assessing water resources. The third paragraph mentions how to locate ground water, and the fourth paragraph continues to discuss locating ground water using clues from rocks. The third paragraph is included because it introduces how a water resource can be found and assessed. Eliminate answers that don't match this prediction. Eliminate (A) because the third paragraph describes how something is currently done, not a *subject for future research*. Keep (B) because it matches the prediction. Eliminate (C) because the paragraph doesn't mention a *recent discovery*. Eliminate (D) because the paragraph doesn't describe *events* nor relate things done in *sequence*. The correct answer is (B).
27. **D** The question asks what the word *occurrence* means in line 75. Go back to the text, find *occurrence*, 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 indicates that *decisions regarding water supply will be more reliable...if they are based upon the knowledge of the principles of ground-water occurrence*. Therefore, the word *occurrence* could be replaced with a word such as "existence." Neither *plan*, *happening*, nor *event* matches "existence," so eliminate (A), (B), and (C). Note that (B) and (C) are Could Be True trap answers based on another meaning of *occurrence* that isn't supported by the text. Choice (D), *presence*, means "existence." The correct answer is (D).
28. **A** The question asks for an approximation of the *maximum water-level elevation in feet* according to the graph. First, use the key to identify that the solid line shows *water-level elevation*. Then carefully read the labels on the graph's axes to determine that *water level elevation* is on the left axis. Next, find the highest point for the solid line and read its measurement on the left axis. The *maximum water level elevation* is between 100 and 150 feet. Keep (A) and eliminate (B), (C), and (D). The correct answer is (A).
29. **A** The question asks which *concept is supported by the passage and by the information in the figure*. Work through each answer choice using the figure. Keep (A) because the solid line indicating water level elevation generally trends downward in the sections of the figure marked "dry" and upward in the sections marked "wet." Choice (A) is also supported by lines 6–7 of the passage: *Water levels rise in wet periods and decline in dry periods*. Eliminate (B) because the graph doesn't include information on the *amount of water pumped from aquifers*. Eliminate (C) because the graph doesn't compare *humid regions with drier regions*. Eliminate (D) because the graph doesn't include information on *water pumped from aquifers*. The correct answer is (A).



30. **B** The question asks how *the figure* supports *the author's point that the public may impact and be impacted by groundwater levels*. Work through each answer choice using the figure. Eliminate (A) because the figure doesn't include information about *waste disposal decisions*. Keep (B) because the dotted line indicating *population* increases steadily, while the solid line indicating *water-level elevation* decreases overall. Eliminate (C) because the figure doesn't include information about the *quality* of the water. Eliminate (D) because the figure doesn't include information about *landscape changes*. The correct answer is (B).
31. **A** The question asks about the main idea of the passage, so it should be done after all the specific questions have been completed. The passage describes the impact of exports on the global economy, specifically focusing on the banana and its potential impact on the Caribbean. This supports (A). Choice (B) can be eliminated because there is no evidence that the author believes the banana will become *the new gold standard*. The passage is focused specifically on bananas rather than *global economics* as a whole, so eliminate (C). Choice (D) can be eliminated because the Caribbean is not barred *from gaining economic independence*. The correct answer is (A).
32. **B** The question asks about the main purpose of the second paragraph. Carefully read the second paragraph to determine its purpose. In the first sentence, the author says that the Panama Canal has *so occupied our attention* that we have *overlooked a significant...change taking place*. The paragraph goes on to describe that change. The correct answer will have something to do with a new change in economics or the emergence of the banana as an influential economic player. Choice (A) recycles *the completion of the Panama Canal*, but it is not the main idea of the paragraph, nor is it a true statement based on the passage, so it can be eliminated. Choice (B) matches the prediction, so don't eliminate it. Choice (C) is extreme because the passage never indicates that bananas will *dominate the economy*, and (D) is not the main point of the passage, so both of these choices should be eliminated. The correct answer is (B).
33. **B** The question asks what the word *exercise* means in line 17. Go back to the text, find *exercise*, 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 window mentions the food products having an *influence upon international politics*, so the products are "placing" or "pushing" influence. Although (A), (C), and (D) are all synonyms for *exercise*, based on the context and prediction, (B), *exert*, is the only answer consistent with the text. The correct answer is (B).
34. **B** The question asks which lines best support the author's claim that *bananas are likely to play a significant role in the global economy*. Carefully read each set of given lines and eliminate any that don't answer the question. Choice (A) can be eliminated because the lines do not mention bananas at all. The lines for (B) refer to economists' predictions that *Caribbean diplomacy will be determined by the banana crop*, which show a *significant role* for bananas. Keep (B). The lines for (C) show the banana's popularity in the U.S., but do not address a role in the *global economy*. Eliminate (C). The lines for (D) describe how the Caribbean can become self-sustaining with the banana. There is no mention of the *global economy*, so eliminate (D). The correct answer is (B).
35. **D** The question asks what the word *friendship* means in line 82. Go back to the text, find *friendship*, 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 mentions *near neighbors* and *diplomacy of the Caribbean*, so the missing word must mean something like "positive relations with neighboring countries." Choices (A) and (B) might be good synonyms for *friendship*, but neither matches the context of the passage. Eliminate both of those choices. *Collusion* does mean working together, but with an illegal or fraudulent goal. This doesn't match the prediction, so eliminate (C). Choice (D), *cooperation*, matches the prediction. The correct answer is (D).

36. **D** The question asks for the main idea of the final paragraph. The final paragraph highlights the importance of the Caribbean and the diplomatic importance of exports. Choice (A) is incorrect because it is too literal. While the word *friendship* does show up in the final paragraph, it is not a literal reference to being friends. It's a reference to diplomacy, which is not mentioned in (A). Eliminate (A). Choice (B) is mentioned, but it is not the main point of the paragraph. Choice (C) recycles words, so it might look good at first glance. However, a careful reading of (C) shows that although the words look familiar, they aren't put together in a way that matches the prediction. Eliminate (C). Choice (D) matches the prediction. The correct answer is (D).
37. **A** The question asks which potential difficulty for the banana industry is anticipated by the author. Notice that this is the first question in a paired set, so it can be done in tandem with Q38. Consider the answers to Q38 first. Choice (38A) refers to *food products* in general exercising *an influence upon international politics*. There is no mention of the banana or any potential problems, so eliminate (38A). Choice (38B) mentions the demand for organizing fruit collection *from small planters* and *large capital for steamers with refrigerating appliances*. This supports (37A), so draw a line connecting those two answer choices. Choice (38C) mentions that companies *own extensive plantations* but does not mention any potential problems, so eliminate (38C). Choice (38D) compares the potential of the banana market to the expansion of the coconut market. There's no potential difficulty here, so eliminate (38D). Without support from Q38, (37B), (37C), and (37D) can all be eliminated. The correct answers are (37A) and (38B).
38. **B** (See explanation above.)
39. **A** The question asks which *idea in the passage* is most directly supported by *the data in the tables*. Work through each answer choice using the tables. Choice (A) is supported by the tables, which show that the U.S. imported a total of 44,520,539 bunches of bananas in 1912, while the world supply of bananas in 1911 was 52,915,963 bunches. The world banana supply exceeds the number of bunches consumed by the U.S. by more than eight million, suggesting that countries other than the U.S. probably also imported bananas. (Although the tables are based on two different years, they are close enough in time that it is reasonable to make this inference.) The passage also supports (A): lines 42–44 state that *the United States consumes 85 percent of all bananas exported—five times as much as all the rest of the world*. Keep (A). Choice (B) is not supported by the tables because the tables do not contain any information about *an economic revolution*. Eliminate (C) and (D) because the tables do not compare banana supply for the same two regions in 1911 and 1912, so there is no basis to say whether there was *increased production* or an *upward trend in banana consumption*. The correct answer is (A).
40. **C** The question asks which country has the greatest difference in banana supply in 1911 compared to the number of bananas sent to the United States from that country in 1912. Simply check the exports from each of these countries to see which shows the greatest increase or decrease in exports to the United States. Jamaica has the greatest difference between those two data points. The correct answer is (C).
41. **D** The question asks which answer is most strongly supported by data from the table. Choices (A), (B), and (C) are untrue statements according to the chart. From the numbers in the chart, (D) is true because Colombia exported more bananas than Cuba in 1911. The correct answer is (D).
42. **D** The question asks what the word *compromised* most nearly means in line 11. Go back to the text, find the word *compromised*, and cross it out. Then read the window carefully, using context clues to determine another word that would fit in its place. The text says, *Many of the studies on mindfulness and meditation, the authors wrote, are poorly designed—compromised by inconsistent definitions of what mindfulness actually is, and often void of a control group to rule out the placebo*



- effect*. Therefore, *compromised* could be replaced by a word such as “weakened.” Eliminate answer choices that don’t match the way the word is used in context. Choice (A), *accommodated*, is a Could Be True trap answer based on a different meaning of *compromised* that is not supported by the text. *Accommodated* means “made allowances for” or “made room for” and does not match “weakened,” so eliminate (A). *Shaped* does not match “weakened,” so eliminate (B). *Divided* also does not match “weakened,” so eliminate (C). *Undermined* means “weakened,” so keep (D). The correct answer is (D).
43. **A** The question asks what *aiding sleep and controlling weight have in common*, according to the author of Passage 1. Since there is no line reference, use lead words and the order of the questions to find the window. Q42 asks about line 11, so scan the passage beginning with line 11, looking for the lead words *aiding sleep* and *controlling weight*. Starting in line 21, the passage states, *A 2014 review of 47 meditation trials, collectively including over 3,500 participants, found essentially no evidence for benefits related to enhancing attention, curtailing substance abuse, aiding sleep or controlling weight*. Hence, what *aiding sleep and controlling weight have in common* is that these *meditation trials* didn’t find *benefits related to* either of them. Eliminate answer choices that don’t match this answer from the passage. Keep (A) because it is a good paraphrase of what the passage states. Choice (B) is a Mostly Right/Slightly Wrong trap answer: each of the goals mentioned in the question is referenced as *a potential benefit of mindfulness practices* even though there is no convincing evidence linking either to mindfulness practices, so eliminate (B). Choice (C) is a Could Be True trap answer: even though one might assume that the goals mentioned in the question are *challenging health goals to achieve*, the passage does not state this, so eliminate (C). Eliminate (D) since the passage does not state that the goals mentioned in the question *are well understood by medical researchers*. The correct answer is (A).
44. **C** The question asks what the author indicates about the *positive effects of meditation practice*. Since there is no line reference, use lead words and the order of the questions to find the window. Q43 asks about *aiding sleep* and *controlling weight*, which were mentioned in line 25, so scan the passage beginning with line 26, looking for the lead words *positive effects of meditation practice* or synonyms for those words. On lines 26–31, the passage states that *Nicholas Van Dam, a clinical psychologist and research fellow in psychological sciences at the University of Melbourne, contends potential benefits of mindfulness are being overshadowed by hyperbole and oversold for financial gain*. Eliminate answer choices that don’t match this answer from the passage. Choice (A) is a Could Be True trap answer: even though one might assume that meditation could increase *practitioners’ productivity*, the passage provides no evidence for this; eliminate (A). Choice (B) is another Could Be True trap answer, since the passage does not indicate that meditation is *benefitting growing numbers of people*; eliminate (B). Choice (C) is a good paraphrase of the passage’s claim that the *potential benefits of mindfulness are being overshadowed by hyperbole and oversold for financial gain*, so keep (C). Eliminate (D) because there is no indication that the benefits of meditation are *not worth the cost of research*, even if the benefits are unclear; eliminate (D). The correct answer is (C).
45. **A** The question asks about the *effect of the analogy in the final paragraph of Passage 1*. Use the given paragraph reference to find the window. Lines 47–50 state, *But it is the trickiness in bringing a rich spiritual concept into a standardized framework for testing and advising patients that [Eric Loucks] feels might be tough to tackle*. The final paragraph goes on to quote Eric Loucks: “...descriptions of concepts like ‘mindfulness’ are like a finger pointing at the moon...It is important not to confuse the finger for the moon. There will always be variations in people’s understanding of mindfulness. It is a personal experience.” The effect of the analogy is to better explain the *trickiness in bringing a rich spiritual concept into a standardized framework for testing and advising patients*. Eliminate



answer choices that don't match this answer from the passage. Choice (A) is a good match: the *particular concept* is *mindfulness* and the *challenge* is bringing this type of personal experience into a *standardized framework* for research and treatment, so keep (A). Choice (B) is a Mostly Right/Slightly Wrong trap answer: although the *finger pointing at the moon* could be considered *elegant imagery*, the analogy makes no attempt to *mask a theory's shortcomings*, so eliminate (B). Choice (C) is also a Mostly Right/Slightly Wrong trap answer: though the analogy does *refer to nature* to some extent in referencing the moon, the purpose is not to *lend a sense of credibility*, so eliminate (C). Choice (D) is yet another Mostly Right/Slightly Wrong trap answer: the analogy does *apply familiar language* but does not *simplify a technical procedure*, so eliminate (D). The correct answer is (A).

46. **D** The question asks what Passage 2 indicates about *the use of mindfulness meditation practice*. This is the first question in a paired set, so it can be done in tandem with Q47. Look at the answer choices for Q47 first, reading with the question in mind. The lines for (47A) state that *we have studied experienced practitioners while they performed an advanced form of mindfulness meditation called open presence*. While the lines do mention *mindfulness meditation*, they don't provide much information about its *use*, nor do they support any of the answers to Q46, so eliminate (47A). The lines for (47B) say, *we found that the intensity of the pain was not reduced in meditators*. This is information about *the use of mindfulness meditation practice*, so check the answer choices for Q46 to see whether any of the choices are supported by these lines. The information matches (46D), which states that *mindfulness meditation does not affect pain sensation directly*; draw a line connecting (47B) and (46D). The lines for (47C) state, *Several studies have documented the benefits of mindfulness on symptoms of anxiety and depression and its ability to improve sleep patterns*. Though this information does address the task of Q46, it does not support any of the answer choices to Q46, so eliminate (47C). The lines for (47D) state that *Segal demonstrated that the intervention is superior to a placebo and has a protective effect against relapse comparable to standard maintenance antidepressant therapy*. While these lines do address the task of Q46 indirectly, they do not support any of the answers to Q46, so eliminate (47D). Without any support from Q47, (46A), (46B), and (46C) can be eliminated. The correct answers are (46D) and (47B).
47. **B** (See explanation above.)
48. **C** The question refers to the mention of "*open presence*" in Passage 2 and asks what may make *disagreeable sensation less troublesome*. Since there is no line reference, use lead words and the order of the questions to find the window. The lines for (47A), lines 68–71, mentioned *open presence*, so read the second paragraph as the window for Q48. Lines 65–80 state, *Staying aware of an unpleasant sensation can reduce maladaptive emotional responses and help one to move beyond the disagreeable feeling and may be particularly useful in dealing with pain. In our Wisconsin lab, we have studied experienced practitioners while they performed an advanced form of mindfulness meditation called open presence...The meditator observes and is open to experience without making any attempt to interpret, change, reject or ignore painful sensation. We found that...[the pain] bothered them less than it did members of a control group*. Eliminate answer choices that don't match this answer from the passage. Eliminate (A) because it is contradicted by the passage. The passage says that *staying aware of an unpleasant sensation* can help, so it wouldn't help people to *take their minds off their discomfort*. Eliminate (B) because the passage doesn't mention understanding *the source of their emotions*. Keep (C) because it matches the passage, which states that *staying aware of an unpleasant sensation* can help. Additionally, the phrase *without judging the experience* matches *without making any attempt to interpret, change, reject or ignore painful sensation*. Eliminate (D) because there is no mention of *seeking treatment* in the window for this question. The correct answer is (C).

49. **A** The question asks for the *main purpose of each passage*. Because this question is about both passages, it should be done after the questions that ask about each passage individually. The main idea of Passage 1 can be found in lines 1–5: *Research in recent decades has linked mindfulness practices to a staggering collection of possible health benefits. Yet many psychologists, neuroscientists and meditation experts are afraid that hype is outpacing the science.* The main idea of Passage 2 can be found in lines 61–64: *As suggested by the growing compendium of research, meditation may be effective in treating depression and chronic pain and in cultivating a sense of overall well-being.* Eliminate answer choices that don't match both passages. Keep (A) because both passages *provide an evaluation*—one negative and one positive—*of the potential health benefits of mindfulness practices*. Eliminate (B) because the passages are not about the research *approaches* used. Eliminate (C) because people's *attention spans* are not the main focus of either passage. Eliminate (D) because neither passage *contrasts anxiety levels of those who meditate for spiritual reasons with those who meditate for health benefits*. The correct answer is (A).
50. **C** The question asks about the *relationship between the two passages*. Because this question is about both passages, it should be done after the questions that ask about each passage individually. The main idea of Passage 1 can be found in lines 1–5: *Research in recent decades has linked mindfulness practices to a staggering collection of possible health benefits. Yet many psychologists, neuroscientists and meditation experts are afraid that hype is outpacing the science.* The main idea of Passage 2 can be found in lines 61–64: *As suggested by the growing compendium of research, meditation may be effective in treating depression and chronic pain and in cultivating a sense of overall well-being.* Therefore, the two passages essentially take opposing views about the evidence that mindfulness practices result in health benefits. Eliminate answer choices that don't match both passages. Eliminate (A) because Passage 2 does not provide *anecdotal evidence* related to an experiment in Passage 1. Eliminate (B) because Passage 2 doesn't examine the topics from Passage 1 *in more detail*; it presents a contrasting point of view. Keep (C) because it matches the contradictory relationship between the passages. Eliminate (D) because Passage 2 does not provide an *alternative explanation* of results from Passage 1; instead it provides other studies that suggest an opposing conclusion. The correct answer is (C).
51. **D** The question asks for a point both authors would *most likely agree* on. Because this question is about both passages, it should be done after the questions that ask about each passage individually. Eliminate answer choices that don't match both passages. Eliminate (A) because Passage 1 states that there is *essentially no evidence for benefits related to...aiding sleep*. Eliminate (B) because neither passage discusses who is likely *to participate in research trials*. Eliminate (C) because only Passage 1 addresses profitability. Keep (D) because it is supported by both passages. Lines 14–21 of Passage 1 state, *The new paper cites a 2015 review published in American Psychologist reporting that only around 9 percent of research into mindfulness-based interventions has been tested in clinical trials that included a control group. The authors also point to multiple large placebo-controlled meta-analyses concluding that mindfulness practices have often produced unimpressive results.* Lines 95–99 of Passage 2 state, *More recently, Segal demonstrated that the intervention is superior to a placebo and has a protective effect against relapse comparable to standard maintenance antidepressant therapy.* Each of these references suggests that *including a control group in research can yield important evidence*. The correct answer is (D).
52. **C** The question asks which choice provides evidence that *the author of Passage 1 would agree to some extent* with a certain claim made in Passage 2. Because this question is about both passages, it should be done after the questions that ask about each passage individually. First, use the given line reference to find the claim from Passage 2. Lines 61–64 state, *As suggested by the growing compendium of research, meditation may be effective in treating depression and chronic pain and in cultivating a sense of overall well-being.* Look at the line references given in the answer

choices, and eliminate the statements that don't indicate the author's agreement with this claim. The lines for (A) state, *Research in recent decades has linked mindfulness practices to a staggering collection of possible health benefits*. However, these lines don't represent the author's opinion, so eliminate (A). The lines for (B) say, *Yet many psychologists, neuroscientists and meditation experts are afraid that hype is outpacing the science*. These lines indicate potential disagreement with the claim in the question, so eliminate (B). The lines for (C) state, *The 2014 analysis found meditation and mindfulness may provide modest benefits in anxiety, depression and pain*. This matches the claim that *meditation may be effective in treating depression and chronic pain*, so keep (C). The lines for (D) say, *But it is the trickiness in bringing a rich spiritual concept into a standardized framework for testing and advising patients that he feels might be tough to tackle*. These lines do not address the benefits of meditation, so eliminate (D). The correct answer is (C).

## Section 2: Writing and Language

- B** The length of the phrase changes in the answer choices, so this question tests concision. Check the shortest answer first. Choice (B) makes the meaning of the sentence precise, so keep (B). *Growing* and *enlarging* mean the same thing, so there is no need to use both words; eliminate (A). The previous sentence states that *the dominance of the United States had been challenged the world over*, so there is no need to repeat that idea; eliminate (C) because it repeats that the competition is *among countries*. Choice (D) unnecessarily repeats that the competition is increasing *for all*, so eliminate (D). The correct answer is (B).
- D** Note the question! The question asks how to effectively combine the underlined sentences, so it tests precision and concision. Three of the answer choices—(A), (C), and (D)—begin with an identical phrase. The first part of the sentence in those three choices, *Moreover, whereas someone born in the 1940s might have expected to spend his or her entire career with a single company*, is not an independent clause, so it cannot be connected to the second part of the sentence with a semicolon. Both (A) and (C) use a semicolon to connect the two parts of the sentence, so eliminate (A) and (C). Choices (B) and (D) are both complete sentences, but (B) includes phrases like *moreover for instance* and *a thing that new workers do now*, which are less concise phrases than those included in (D). Choice (D) is both grammatically correct and concise. The correct answer is (D).
- B** Note the question! The question asks whether a phrase should be added, so it tests consistency. If the content of the new phrase is consistent with the ideas that surround it, then it should be added. The paragraph describes the *compulsively innovative methods* of *Netflix*, and the subsequent paragraph notes that *Netflix has become famous (or infamous) for changing its employees' relationship to the workplace*. The proposed new phrase describes the *world of Silicon Valley startups*, like *Netflix*, as *fast-paced, forward-thinking, and occasionally ruthless*. This description is consistent with the ideas discussed elsewhere in the passage, so the phrase should be added: eliminate (C) and (D). Choice (A) states that the phrase *shows the author's ability in finding apt adjectives*; this rationale is unrelated to the consistency of ideas in the passage, so eliminate (A). Choice (B) notes that the phrase *creates a richer description of the company discussed*, which is consistent with the relationship between the phrase and the rest of the paragraph; keep (B). The correct answer is (B).
- C** Verbs change in the answer choices, so this question tests consistency of verbs. A verb must be consistent in number with its subject. The subject of the underlined verb is *One of the major success stories*, which is singular. To be consistent, the underlined verb must be singular as well. Eliminate (B) and (D), because *are* is a plural verb. The addition of the word *that* is unnecessary



- in this sentence, because the subject of the verb *is* does not need to be repeated with a pronoun; eliminate (A). The correct answer is (C).
5. **A** The length of the phrase changes in the answer choices, so this question tests concision. Check the shortest answer first: (A), *computers*, makes the meaning of the sentence precise, so keep it. Now consider whether any additional information is required for the sentence to make sense. The word *computers* already means “machines that can store, process, and communicate information,” so any longer answer choice would need to include additional and relevant detail in order to be a better answer than (A). Choice (B), *machines used for computing*, is a less concise way to describe computers, so eliminate (B). Choice (D), *intelligent machines*, suggests that the computers themselves have intelligence, which is not a necessary claim for the focus of the essay. Eliminate (D). Choice (C) names two subsets of computers and identifies a specific kind of processing ability, *the capacity to stream*, but this choice is less concise and no more precise than (A). Eliminate (C). The correct answer is (A).
6. **D** Transitions change in the answer choices, so this question tests consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The sentence before the transition states that *Netflix’s compulsively innovative methods have changed the way that those living in the United States and in many other parts of the globe interact with visual media*. The sentence that begins with the underlined transition explains that *Netflix has become famous (or infamous) for changing its employees’ relationship to the workplace*. The second sentence provides an additional example of how Netflix’s methods affect people, so the correct answer should reflect that relationship between the sentences. *For all this* and *regardless* both suggest that the second sentence is in contrast to the idea of the first sentence, which is inconsistent with the passage; eliminate (A) and (B). Choice (C), *Thus*, implies that the second sentence is a consequence of the first sentence. Both sentences describe the consequences of Netflix’s practices, but the first sentence does not have to be true in order for the second sentence to be true, so eliminate (C). Choice (D), *Furthermore*, reflects the correct relationship between the two sentences. The correct answer is (D).
7. **D** Note the question! The question asks which choice *most effectively sets up the idea given in the second part of this sentence*, so it tests consistency of ideas. Eliminate answers that are inconsistent with the purpose stated in the question. The second part of the sentence states that *employees at Netflix are warned not to think of the job as one that they will “keep for life.”* Choice (A), *Just putting seriously all of it right out there*, is inconsistent in tone with the rest of the passage, and the phrase is not precise: it is not clearly describing either the *employees* or the people who warn the employees. Eliminate (A). Choice (B), *Turned off by the company’s rudeness*, does not set up the situation described in the second part of the sentence so much as it describes one possible outcome of the warning. Eliminate (B). Choice (C), *Having no idea what they’re walking into*, is inconsistent with the passage’s statement that Netflix is famous for its employment approach, and describing the employees’ ignorance does not clearly set up the fact that they are warned not to expect to keep their jobs for life. Eliminate (C). Choice (D), *From the first day on the job*, gives a clear context for the employees’ being warned about the possibility of losing their jobs. The correct answer is (D).
8. **B** Verbs change in the answer choices. The underlined portion is part of a list in the sentence, so this question tests consistency. All items in a list must be consistent with one another. The other items in the list are phrases that start with an *-ing* verb—*staying late* and *showing loyalty to the company*—so the third item must have the same form. Eliminate (A) and (C) because they do not include the correct verb form. Neither of the other items in the list includes a pronoun, so eliminate (D), which includes the pronoun *they*. The correct answer is (B).

9. **D** Transitions change in the answer choices, so this question tests consistency of ideas. There is also the option to DELETE; consider this choice carefully, as it is often the correct answer. The first part of the sentence, *While these employees had done about as good a job as they could do*, is not an independent clause; the part of the sentence that follows the underlined transition, *they were fired the moment they were no longer needed*, is an independent clause. A comma followed by a coordinating conjunction such as *and* or *yet* can only be used between two independent clauses, so eliminate (A) and (B). Adding *because* would make the entire sentence an incomplete idea, so eliminate (C). The underlined word should be deleted. The correct answer is (D).
10. **C** Vocabulary changes in the answer choices, so this question tests precision of word choice. The sentence states that companies attempting to *tighten their belts* will *demand more of their employees* and *withdraw some of the comfortable perks that employees of earlier eras relied on*, so the correct answer should mean something like “commitments.” *Premise* means “assumption” or “statement,” while *promise* means “assurance” or “guarantee.” The better term in this sentence is *promise*, so eliminate (A) and (B). The underlined word is modified by *some*, so the word should be a plural noun: eliminate (D), because *promising* is a singular noun. The correct answer is (C).
11. **A** Note the question! The question asks which choice *most clearly ends the passage with a restatement of the writer’s primary claim*, so it tests consistency of ideas. Eliminate answers that are inconsistent with the purpose stated in the question. The paragraph states that *as companies continue to tighten their belts and their responsibility to be profitable remains, they will demand more of their employees*. Choice (A) restates the earlier idea that the situation described *may be the workplace of the future*, so keep (A). Choice (B) departs dramatically from the tone and content of the rest of the passage by suggesting that *we should all head for the hills*, so eliminate (B). Choice (C) states that Netflix is *not really hiring all that often*, which contrasts with the earlier description of Netflix’s frequent employee turnover, so eliminate (C). Choice (D) describes *how difficult it can be to be fired*, which is not an issue the passage addresses, so eliminate (D). The correct answer is (A).
12. **C** Note the question! The question asks which answer *most closely matches the stylistic pattern established earlier in the sentence*, so it tests consistency. The underlined phrase is an item in a list. All items in a list must be consistent with each other. The first two items in the list are *watching short videos on TikTok* and *reading short posts on Facebook and Twitter*, so the third item should also be a verb phrase without a subject pronoun. Eliminate (A) and (D), because these choices include the pronoun *they* at the beginning of the phrase. Choice (B) introduces the word *the* before *sending*, which is inconsistent with the pattern in the other items: eliminate (B). Choice (C) matches the format of the earlier items in the list. The correct answer is (C).
13. **A** The length of the phrase following *web* changes in the answer choices, so this question tests concision. Check the shortest answer first. Choice (B) does not give a precise meaning to the sentence. The first part of the sentence, *Those who critiqued television as a dangerous influence on society have since changed to new and, as they would see it, worse targets on the web*, is an independent clause. The second part of the sentence, *are not much interested in television anymore*, is not an independent clause. Choice (B) does not make the relationship between the two parts of the sentence clear, so eliminate (B). Choices (C) and (D) both make the second part of the sentence into an independent clause. A comma on its own cannot be used between two independent clauses, so eliminate (C) and (D). Removing the comma and adding the word *and* to the sentence makes it clear that the idea in the second part of the sentence, *are not much interested in television anymore*, is the second item in a list that describes *those who have critiqued television*. The correct answer is (A).
14. **D** Transitions change in the answer choices, so this question tests consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The sentence before the



transition states that *There could be no “couch potatoes” without TVs, and the scourge of reality TV might never have been thrust upon the American viewing public.* The sentence that begins with the underlined transition states that *shining light in your eyes for hours at a time can wreak havoc* on vision. These are separate examples of the negative effects of watching television, so the correct transition will reflect that relationship. Choice (A), *As aforementioned*, incorrectly suggests that the bad effects of light were mentioned earlier in the paragraph, so eliminate (A). Choices (B), *However*, and (C), *That said*, indicate that the idea of the second sentence is in contrast to the idea of the first sentence, which is inconsistent with the relationship between the two sentences: eliminate (B) and (C). Choice (D), *Moreover*, reflects that the idea in the second sentence is an additional example of the trend indicated in the first sentence, which is consistent with the passage: keep (D). The correct answer is (D).

15. **A** Punctuation and apostrophes change in the answer choices, so this question tests apostrophe usage and how to connect ideas using appropriate punctuation. When used with a pronoun, an apostrophe indicates a contraction. *You're* is equal to “you are,” which is not necessary in this sentence: eliminate (B) and (C). The difference between (A) and (D) is that (A) uses a colon to connect the first part of the sentence to the word *vision*, while (D) uses a semicolon. The first part of the sentence, *shining light in your eyes can wreak havoc on one of your most important senses*, is an independent clause, while the second part of the sentence, *vision*, is not an independent clause. A semicolon can only be used between two independent clauses, so eliminate (D). The correct answer is (A).
16. **B** Apostrophes change in the answer choices, so this question tests apostrophe usage. When used with a noun, an apostrophe indicates possession. In this sentence, nothing belongs to *radios*, so there is no need for an apostrophe. Eliminate (C) and (D). The difference between (A) and (B) is in the tense of the verb. A verb must be consistent in tense with the other verbs in the sentence. The other verb in the sentence is *provided*, which is in the past tense, so the correct verb must also be in the past tense. Eliminate (A) because *creates* is in the present tense. The correct answer is (B).
17. **D** Note the question! The question asks whether a sentence should be added, so it tests consistency. If the content of the new sentence is consistent with the ideas that surround it, then it should be added. The paragraph describes how *television provided something truly national for the first time*, and claims that during the *first American performance of The Beatles on The Ed Sullivan Show*, it seemed that *Everyone, literally everyone, was watching TV*. The new sentence states that *The Beatles had many hits that continue to influence the course of rock and roll to the present day*, so it is not consistent with the focus of the ideas in the rest of the paragraph. The sentence should not be added. Eliminate (A) and (B). Choice (C) states that the new sentence *suggests that television's only function was to broadcast musical performances*, which does not accurately describe the sentence: eliminate (C). Choice (D) accurately states that the new sentence *adds a detail that is irrelevant to the paragraph's main focus*. The correct answer is (D).
18. **B** The order of phrases in the sentence changes in the answer choices, so this question tests precision and consistency of ideas. The sentence before this one describes the *presence of non-white faces*, and the following sentence describes how *African Americans were the most frequently targeted group*, but *Asian Americans and those of all ethnicities were similarly lampooned*, suggesting that the underlined sentence will describe a problematic form of representing African Americans. Look for the answer choice that clearly presents such a description. The order of phrases in (A) suggests that *non-white people* were those *who parroted and parodied the patterns of Black speech*, while that description seems most logically to characterize the *white actors*. Eliminate (A). Choice (B) correctly makes *non-white people* the subject of the verb *were represented*, and it



identifies the *white actors* as those who *parroted and parodied*, so keep (B). Choice (C) describes African Americans as those *who for many years parroted by white people and parodied in speech patterns*, which is not a complete thought, so eliminate (C). Choice (D) suggests that the white actors' parroted of *patterns of Black speech* were *parodied for many years*, which is not a claim indicated elsewhere in the paragraph, so eliminate (D). The correct answer is (B).

19. **D** Note the question! The question asks which choice gives a *second supporting example that is most similar to the example already in the sentence*, so it tests consistency of ideas. Eliminate answers that are inconsistent with the purpose stated in the question. The example given earlier in the sentence is of the *Chinese American character on Have Gun Will Travel*. Both (A) and (C) describe general numbers of *shows*, which is not similar to the specific example provided earlier in the sentence, so eliminate (A) and (C). Choice (B) describes the actor who played the character *on the radio show*, which elaborates on the earlier example instead of providing a *second supporting example*, so eliminate (B). Choice (D) names another character, *the African American character on The Beulah Show*, which is consistent with the earlier example. The correct answer is (D).
20. **C** Commas change in the answer choices, so this question tests comma usage. The phrase *in the American public* is necessary to the main meaning of the sentence, so it should not be separated from the rest of the sentence by commas: eliminate (D). The phrase *in the American public* modifies the word *many*, so the phrase and the word should also not be separated by a comma: eliminate (B). Inserting a single comma after *public* suggests that the *national reach* of television was showing *many in the American public*, instead of showing to those many Americans *just how diverse the American scene had become*: the comma is inconsistent with the main idea of the sentence, so eliminate (A). No commas are necessary in this underlined phrase. The correct answer is (C).
21. **D** Note the question! The question asks how to effectively combine the sentences, so it tests precision. The pronoun *they* could refer to *people* or *hometowns*, so it is not precise: eliminate (A). Choice (B) also uses the imprecise pronoun *they*, though this phrase makes the pronoun possessive: it is unclear who *theirs* refers to, so eliminate (B). Choice (C) states that when people had the *wealth to travel physically outside of their hometowns*, those people traveled *with what were usually filled with citizens*: this phrasing doesn't make sense, so eliminate (C). Choice (D) uses the pronoun *which*, which clearly refers to the *hometowns* and not to the *people*: this is the most precise option, so keep it. The correct answer is (D).
22. **D** Note the question! The question asks where paragraph 6 should be placed, so it tests consistency of ideas. The paragraph must be consistent with the ideas that come both before and after it. Paragraph 6 describes how *this national reach could occasionally lead to conformity and sensationalism*, so it must come after a description of the *national reach* of television. Paragraph 3 introduces the fact that television *provided something truly national for the first time*, so eliminate (B) and (C). Paragraph 6 also claims that *television could show Americans who had not traveled much just how big the world outside was*, so it must come before the reference to *this "big world"* in paragraph 4. Eliminate (A). The correct answer is (D).
23. **D** Pronouns change in the answer choices, so this question tests consistency of pronouns. A pronoun must be consistent in number with the noun it refers to. In this case, the pronoun refers to *untouched nature*, which is singular, so the pronoun must also be singular. Eliminate (B), because *their* is a plural pronoun. *There* identifies a specific place, which is not consistent with this sentence, so eliminate (A). The difference between (C) and (D) is an apostrophe. When used with a pronoun, an apostrophe indicates a contraction. *It's* means "it is," which is incorrect in this sentence, so eliminate (C). Choice (D), *its*, provides the possessive form of a singular pronoun. The correct answer is (D).

24. **A** Transitions change in the answer choices, so this question tests consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The sentence before the transition states that *nature* is *characterized* not just by *the way it looks* but also by *the way it sounds*. The sentence that begins with the underlined transition states that *when we build highways through thriving natural habitats, we don't just change the way they look*. This second statement builds on the idea of the previous statement, so the correct transition will reflect that relationship. Keep (A), because *thus* reflects the idea that the second statement is a logical consequence of the first statement. *Thence* means "in that place," which is inconsistent with the relationship between the ideas, so eliminate (B). Eliminate (C) because *whereas* suggests that the second sentence is a departure from the idea of the first sentence. While (D), *This being so*, reflects the correct relationship between the ideas, it is less concise than (A), so eliminate (D). The correct answer is (A).
25. **B** Note the question! The question asks whether a sentence should be added, so it tests consistency. If the content of the new sentence is consistent with the ideas that surround it, then it should be added. The paragraph describes how building highways does not *just change the way* that *natural habitats* appear, and it also states that *car traffic is remarkably loud*. The new sentence states that *We also change the way they sound*. This statement is consistent with and builds on the ideas in the previous sentence, so it should be added: eliminate (C) and (D). Choice (A) states that the new sentence *reminds the reader of the beauty of birds' songs*, which is inconsistent with the content of the new sentence: eliminate (A). Choice (B) notes that the sentence *completes the idea started in the previous sentence*, which is accurate: keep (B). The correct answer is (B).
26. **B** Vocabulary changes in the answer choices, so this question tests precision of word choice. Look for a word whose definition is consistent with the other ideas in the sentence. The sentence says that *while we have become relatively accustomed to the sounds of cars on our "quiet" residential streets, not all animals have*, so the correct answer must mean something like "used to" or "accustomed." *Weakened* means "made less intense," so eliminate (A). *Inured* means "accustomed to," so keep (B). *Hip* means "aware of" and *keen* means "eager for;" neither is consistent with the idea of the passage, so eliminate (C) and (D). The correct answer is (B).
27. **C** The length of the phrase changes in the answer choices, so this question tests concision. The rest of the sentence states that *a recent study checked the effect* of a change in volume *on local bird populations*, so the focus of the underlined portion should be on the increase in noise. Check the shortest answer first: *increased highway noise* is consistent with the focus of the sentence, so keep (C). The next shortest answer, *raising the highway volume*, suggests that the researchers were increasing the sound of particular highways, which is inaccurate, so eliminate (A). Choice (B), *the noise being more on highways*, and (D), *highways exhibiting more noise levels*, are both less concise and less precise than (C): eliminate them. The correct answer is (C).
28. **C** The length of the phrase changes in the answer choices, so this question could test concision. The first part of the sentence, *This might seem like an easy study with all the new highway construction going on in the United States all the time*, is an independent clause, and it is connected with a comma and the word *but* to the second part of the sentence: in order for the non-underlined part of the sentence to be correct, the second part of the sentence must also be an independent clause. Choice (C) is the shortest option, and it appropriately makes the second part of the sentence an independent clause: *the researchers at the Intermountain Bird Observatory in Idaho wanted to study the effects without becoming part of the problem*. As written, the second part of the sentence is not an independent clause, so eliminate (A). Choice (B) also fails to make the second part of the sentence an independent clause, so eliminate (B). The addition of the word *they* in (D) does not make the sentence more precise, so eliminate (D). The correct answer is (C).

29. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. The sentence describes the creation of a *fake* road, which is also called a “*phantom*” road. The phrase *or a “phantom”* should be set off from the rest of the sentence using commas, because it provides an alternative to the term *fake* and is therefore not necessary to the main meaning of the sentence. The non-underlined portion of the sentence already includes a comma before *or*, so look for the answer choice that includes a comma after “*phantom.*” Eliminate (C) and (D). There is no need for an additional comma after *or*, so eliminate (A). The correct answer is (B).
30. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. Choice (A) includes an opening quotation mark, but there is no corresponding closing quotation mark later in the sentence, so eliminate (A). The first part of the sentence, *According to the study, the mere sounds of traffic*, is not an independent clause. A single dash in a sentence can only be used after an independent clause, so eliminate (D). The subject of the whole sentence is *sounds of traffic*, and the main verb is *reduced*, so these words should not be separated by any piece of punctuation: eliminate (C), which separates the words with a comma. No punctuation is necessary. The correct answer is (B).
31. **D** Note the question! The question asks which answer *offers an accurate interpretation of the data in the figure*, so it tests consistency. Read the labels on the figure carefully, and look for an answer that is consistent with the information given in the figure. The figure offers no data about the locations of *avian populations* or *other wildlife populations*, so the statements in (A) and (B) are not consistent with the figure: eliminate (A) and (B). Choice (C) describes a plan for *an east-west route from Savannah to Knoxville and a north-south route from Augusta to Natchez*, but the direction of travel between Savannah and Knoxville is north-south, according to the figure, and the direction of travel between Augusta and Natchez is east-west. Eliminate (C). Choice (D) matches the cities with the correct directions of travel in the proposed interstates. The correct answer is (D).
32. **C** Note the question! The question asks where the new sentence should be placed, so it tests consistency of ideas. The sentence must be consistent with the ideas that come both before and after it. The new sentence describes how *birds are more likely to be looking up than down* when there is *so much distraction from outside noise*. Sentence 3 explains that birds *need to spend as much time as possible with their heads down*, so the new sentence must appear after sentence 3. Eliminate (A) and (B). Sentence 4 states that *This is bad news for avian life in the deep South*; while sentence 3 ends with a description of the benefits of birds’ looking down, including *feeding their young* and *fattening up for their various migrations*, the new sentence explains that the time spent looking up means that birds are *casting a cautious eye on their potentially perilous surroundings*. The word *This* in sentence 4 refers to the situation in the new sentence, so the new sentence must appear before sentence 4: eliminate (D). The correct answer is (C).
33. **A** Pronouns and nouns change in the answer choices, so this question tests precision. A pronoun can only be used if it is clear what it refers to. The pronoun *they* in (C) could refer to *speed limits*, *roads*, or *effects*, so (C) is not a precise statement. Eliminate (C). The statements in (B) and (D) are too general to be consistent with the specific details mentioned earlier in the sentence: the *lower speed limits* and *rubberized asphalt* will not mean that *there won’t be so much noise* generally, or that *there won’t be all the noisy roads*, but rather that roads with those specific characteristics won’t be so noisy. Eliminate (B) and (D) because they are too general. Choice (A) states that *the roads won’t be quite so noisy*, which is consistent with the focus of the sentence. The correct answer is (A).



34. **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, *Francisco Vázquez de Coronado, an early Spanish explorer and conquistador*, is not an independent clause. The second part of the sentence, *died believing that he had failed in his mission, but his pursuit of that mission has been just as significant to history as it would have been had he achieved his goal*, is also not an independent clause. A semicolon can only be used between two independent clauses, so eliminate (A). A single dash in a sentence must come after an independent clause, so eliminate (D). The phrase *an early Spanish explorer and conquistador* is not necessary to the main meaning of the sentence, so it should be set off from the rest of the sentence using commas. Eliminate (B) because it lacks a comma after *conquistador*. The correct answer is (C).
35. **B** Transitions change in the answer choices, so this question tests consistency of ideas. A transition must be consistent with the relationship between the ideas it connects. The first part of the sentence containing the transition states that *Coronado's experience is an excellent window into the difficulty of assessing the Spanish explorers*, and the second part of the sentence states that *we can see the blurring of the line between hero and villain*. The second part of the sentence provides more detail on what is meant by the description in the first part of the sentence. The correct transition will reflect this relationship. *But also* suggests that the second part of the sentence is in contrast to the first part of the sentence, so eliminate (A). *Wherein* means “in which,” which does suggest that the second part of the sentence provides further explanation of the first part of the sentence: keep (B). Choices (C), *just as*, and (D), *so too*, both suggest that the situation in the second part of the sentence is equivalent to the first part of the sentence, which is inconsistent with the ideas of the sentence: eliminate (C) and (D). The correct answer is (B).
36. **C** Vocabulary changes in the answer choices, so this question tests precision of word choice. Look for a word with a definition that is consistent with the other ideas in the sentence. The sentence says that *Columbus is still praised as being the “discoverer” of the United States but reviled for the atrocities that he enacted against the native populations*, so the correct answer will mean something like “performed.” *Eviscerated* means “tore violently apart;” while the atrocities might have eviscerated the native populations, in this sentence, the subject of the underlined verb is Columbus, not the atrocities, so this meaning is inconsistent with the idea of the sentence. Eliminate (A). *Did* and *committed* both mean something like “performed,” so keep (B) and (C). *Manifested* means “showed plainly,” so eliminate (D). Although *did* seems tempting, *committed* is a word also associated with perpetrating crimes and is a word frequently used with *atrocities*, so (C) more closely matches the tone of the sentence. The correct answer is (C).
37. **D** Vocabulary changes in the answer choices, so this question tests precision of word choice. Look for a word with a definition that is consistent with the other ideas in the sentence. The word *then* is used to indicate time, while the word *than* is used to make a comparison. The sentence makes a comparative judgment about *Coronado's aims*, so *than* is the appropriate word. Eliminate (B) and (C). *Fewer* means “smaller in number,” while *less* means “to a smaller extent.” The word *noble* cannot be described as “smaller in number,” so eliminate (A). The correct answer is (D).
38. **B** The punctuation and length of the phrase following *else* changes in the answer choices, so this question tests both how to connect ideas with appropriate punctuation and concision. The first part of the sentence, *He was much more interested in making something else*, is an independent clause. The second part of the sentence, *money*, is not an independent clause. A colon can be used to separate these two ideas, and the shortest answer, (B), makes the meaning of the sentence precise, so keep (B). Adding the transition word *altogether* or *nevertheless* does not make the sentence more precise, so eliminate (A) and (C). Adding the phrase *and it was* to the first part of the sentence means it is no longer an independent clause. A colon can only be used after an independent clause, so eliminate (D). The correct answer is (B).

39. **A** Verbs and pronouns change in the answer choices, so this question tests consistency of verbs and pronouns. A verb must be consistent with its subject and with the other verbs in the sentence. In this case, the other verbs in the sentence are *came* and *was*, which are both past tense, so the underlined phrase should also include a past tense verb. Eliminate (C) and (D), because they do not contain past tense verbs. The difference between (A) and (B) is a difference of pronouns. The phrase that includes the underlined portion is a description of *Coronado* that is set off from the rest of the sentence by commas. This descriptive phrase should not be an independent clause. The subject pronoun *he* makes it an independent clause, so eliminate (B). The pronoun *who* does not make it an independent clause. The correct answer is (A).
40. **B** Verbs change in the answer choices, so this question tests verbs. The answer choices contain two options: *rise* and *arise*. The word *arise* means “wake up,” while *rise* means “move upward.” In this sentence, the word *rise* is needed because it involves moving upward to tackle a challenge, not waking up. Eliminate (A) and (C). Before the blank is the word “to.” The correct phrase is “to rise,” not “to rising,” so eliminate (D). The correct answer is (B).
41. **A** Note the question! The question asks which choice gives *information that best supports the claim made by this sentence*, so it tests consistency of ideas. Eliminate answers that are inconsistent with the purpose stated in the question. The sentence states that *Coronado’s disappointment was absolutely unforgiving and vicious*, and it already includes the example that *many fellow travelers died on these expeditions*. Choice (A) provides another example of how people *were slaughtered as a result of Coronado’s greed*, which precisely supports the claim that Coronado’s disappointment was *unforgiving and vicious*, so keep (A). Choice (B) states that *the journeys were long and arduous*, which does not provide further evidence of how Coronado behaved in response to disappointment, so eliminate (B). Choice (C) focuses on how *very limited* was *medical care* during the time of Coronado’s expeditions, which is also inconsistent with the focus of the rest of the sentence, so eliminate (C). Choice (D) states that *no one stopped to see the sites*, which is irrelevant to the discussion of Coronado’s *disappointment*: eliminate (D). The correct answer is (A).
42. **D** The length of the phrase changes in the answer choices, so this question tests concision. There is also the option to DELETE; consider this choice carefully, as it is often the correct answer. The sentence describes the geography covered over the course of the essay: *We started in Spain, then went to Mexico, then to New Mexico, then to Kansas*. The word *then* already implies that Kansas is the last stop in the essay’s travel, so there is no need to repeat that idea: eliminate (A). Both (B) and (C) suggest that visiting Kansas occurred during the travels described earlier in the sentence, which is inconsistent with the trajectory of the essay, so eliminate (B) and (C). Choice (D) is concise and makes the sentence precise. The correct answer is (D).
43. **D** Note the question! The question asks where sentence 2 should be placed, so it tests consistency of ideas. The sentence must be consistent with the ideas that come both before and after it. Sentence 2 states that *That’s a lot of territory to cover*, so it must come after a description of a lot of travel. Sentences 3 and 4 outline *how far we have traveled in this short essay alone*, then list the places traveled, so sentence 2 should come after sentence 4. Eliminate (A), (B), and (C). The correct answer is (D).
44. **B** Note the question! The question asks whether a sentence should be added, so it tests consistency. If the content of the new sentence is consistent with the ideas that surround it, then it should be added. The paragraph states that *Coronado’s influence is all around us*, and that we have *his “failure” to thank for a large swath of the contemporary United States*. The new sentence states that *A small island off the coast of San Diego bears his name, as does a high school halfway across the country in Lubbock, Texas*. The idea of the new sentence is consistent with the focus of the rest of the

paragraph, so it should be added: eliminate (C) and (D). Choice (A) states that the new sentence *names some of the places of which Coronado was most fond*; the sentence does not mention whether Coronado even knew about these locations, let alone was fond of them, so eliminate (A). Choice (B) states that the sentence *cites some of the contemporary places that were influenced by Coronado*, which is consistent. The correct answer is (B).

### Section 3: Math (No Calculator)

- C** The question asks for the meaning of the number 20 in the equation. Label the pieces of the equation, and use Process of Elimination. The  $w$  represents the number of workers, and  $t$  represents the total time in hours. Therefore, the 20 must have something to do with the cost of the workers' hourly wage. Eliminate (A) because nothing is mentioned about a minimum number of workers. Eliminate (B) because it is unrelated to the workers. Choice (C) relates to the hourly wage, so keep it, but check (D) just in case. Choice (D) can be eliminated because the number of wedding guests is unrelated to the cost and unrelated to the workers and their time. The correct answer is (C).
- D** The question asks for the value of an expression. Manipulate the given equation to match the expression. Subtract 4 from both sides of the equation to get  $12x = 16$ . Divide the entire equation by 2 to get  $6x = 8$ . Therefore,  $6x + 5 = 8 + 5 = 13$ . The correct answer is (D).
- C** The question asks for the solution to a system of equations. Since there are ordered pairs in the answers, try out those points in the equations, starting with (B). In (B),  $x = -4$  and  $y = 4$ . Plug those values into the first equation to get  $5(-4) - 4(4) = 36$ . Distribute on the left side of the equation to get  $-20 - 16 = 36$ , and  $-36 = 36$ . Since the values do not work in the first equation, eliminate (B). Next, try (C). In (C),  $x = 4$  and  $y = -4$ . Plug those values in the first equation to get  $5(4) - 4(-4) = 36$ . Distribute on the left side of the equation to get  $20 - (-16) = 36$ , and  $36 = 36$ . Next, try the same numbers in the second equation:  $-4 - (-4) = 0$ . Simplify the left side of the equation to get  $-4 + 4 = 0$ , and  $0 = 0$ . The coordinate pair works in both equations. The correct answer is (C).
- A** The question asks for the value of  $x$  in the equation for a given value of  $y$ . Put  $y = 8$  into the equation to get  $8 - \sqrt{4x^2 + 28} = 0$ . Therefore,  $\sqrt{4x^2 + 28} = 8$ . Now try the answers in the equation to see which value of  $x$  works. In (B),  $x = 4$ , making the square root  $\sqrt{4(4)^2 + 28} = \sqrt{4(16) + 28} = \sqrt{92}$ , which is not equal to 8. A smaller number is needed, so eliminate (B), (C), and (D). The correct answer is (A).
- B** The question asks for the value of  $r$ , the  $y$ -coordinate of a point on the diagram of a quadrilateral. There are parallel lines, which have the same slope. Since the question asks for the  $y$ -coordinate of a point on  $\overline{AD}$ , which is parallel to  $\overline{BC}$ , start by finding the slope of  $\overline{BC}$ . Use the slope formula  $\frac{y_2 - y_1}{x_2 - x_1}$  to get  $\frac{10 - 0}{0 - 6} = \frac{10}{-6} = \frac{5}{-3}$ . Now use this slope to find the value of  $r$ :  $\frac{5}{-3} = \frac{0 - r}{-3 - 0}$  or  $\frac{5}{-3} = \frac{-r}{-3}$ . Therefore,  $5 = -r$ , so  $r = -5$ . The correct answer is (B).



6. **C** The question asks for an expression that is equivalent to the given one. Rather than factoring, expand out the answers one piece at a time and use Process of Elimination. Focus on just the first term in the expression given, which is  $16x^6$ . In (A), the first term in the expanded version of the expression would be  $(16x^2)^3 = 4,096x^6$ . Eliminate (A). In (B), the first term in the expanded version of the expression would be  $(16x^3)^2 = 256x^6$ . Eliminate (B). In (C), the first term of the expanded expression would be  $(4x^3)^2 = 16x^6$ . This is correct, so either expand out the rest of (C) or check the first term on the expression in (D) to be sure. The second option is easier:  $(4x)^6 = 4,096x^6$ , so (D) can be eliminated. The correct answer is (C).
7. **D** The question asks for the least number of sides in a polygon. Use the values in the answers, starting with the smallest answer choice. Plug in  $n = 11$  from (A) and see if  $S > 2,000$  as stated in the question. The equation becomes  $S = 180(11 - 2) = 1,620$ . This is not greater than 2,000, so eliminate (A). A larger value for  $n$  is needed to make the sum of the angles greater than 2,000. Try (C) to get  $S = 180(13 - 2) = 1,980$ . This is still too small. The correct answer is (D).
8. **A** The question asks for the value of  $s - t$ , where  $(s, t)$  is the point of intersection of two lines. First, define the equations for both of the lines. The slope-intercept form of a line is  $y = mx + b$ , where  $x$  and  $y$  are the coordinates of a point on the line,  $m$  is the slope, and  $b$  is the  $y$ -intercept. Plug in the point  $(4, 4)$  and a  $y$ -intercept of  $-8$  into the slope-intercept equation to get  $4 = (m)(4) - 8$ . Add 8 to both sides to get  $12 = 4m$ , then divide both sides by 4 to get  $m = 3$ . Therefore, the equation for line  $k$  is  $y = 3x - 8$ . Next, find the equation of line  $m$ . Given two points, use the point-slope formula to find the line:  $y - y_1 = m(x - x_1)$ . To find the slope,  $m$ , use the slope formula  $\frac{y_2 - y_1}{x_2 - x_1}$ . For line  $m$ , the slope is  $\frac{-3 - 5}{5 - 1} = \frac{-8}{4} = -2$ . Therefore, plugging the point  $(1, 5)$  into the point-slope formula results in  $y - 5 = -2(x - 1)$ . Distribute the  $-2$  to get  $y - 5 = -2x + 2$ . Add 5 to both sides of the equation to get  $y = -2x + 7$ . To find the point of intersection for the two lines, set the two line equations equal to each other to get  $3x - 8 = -2x + 7$ . Add 8 and  $2x$  to both sides of the equation to get  $5x = 15$ , then divide both sides by 5 to get  $x = 3$ . Plug  $x = 3$  into the equation for line  $k$  to get  $y = 3(3) - 8 = 1$ . Therefore, the point of intersection  $(s, t)$  is  $(3, 1)$  and  $s - t = 3 - 1 = 2$ . The correct answer is (A).
9. **B** The question asks for the positive value of  $y$  in an equation with exponents. When multiplying variables with the same base and different exponents, add the exponents. The equation becomes  $k^{x^2 + xy + y^2 + xy} = k^{25}$ . Combine like terms to get  $k^{x^2 + 2xy + y^2} = k^{25}$ . Therefore,  $x^2 + 2xy + y^2 = 25$ . Factor the quadratic to get  $(x + y)^2 = 25$ . Take the square root of both sides to get  $x + y = \pm 5$ . Substitute 3 for  $x$  to get  $3 + y = \pm 5$ . Since the question asks for the positive value of  $y$ , the equation to use is  $3 + y = 5$ , so  $y = 2$ . The correct answer is (B).
10. **D** The question asks for a variable expressed in terms of other variables in the equation. Rather than doing complex algebra, try out some numbers for the variables on the right side of the equation. Let  $D = 2$  and  $E = 5$ , so the equation becomes  $F = \frac{2}{5 - 2} = \frac{2}{3}$ . Plug these values for  $D$ ,  $E$ , and  $F$  into the answer choices to see which answer works. Choice (A) becomes  $2 = \frac{5}{1 - \frac{2}{3}}$ . Simplify the denominator on the right side of the equation to get  $2 = \frac{5}{\frac{1}{3}}$ , then multiply the top and the bottom of the fraction by 3 to get  $2 = 15$ . Eliminate (A). Choice (B) becomes  $2 = \frac{5}{1 + \frac{2}{3}}$ .

Simplify the denominator on the right side of the equation to get  $2 = \frac{5}{\frac{3}{5}}$ , then multiply the top and the bottom of the fraction by  $\frac{3}{5}$  to get  $2 = 3$ . Eliminate (B). Choice (C) becomes  $2 = \frac{\frac{2}{3}(5)}{1 - \frac{2}{3}}$ . Simplify the denominator on the right side of the equation to get  $2 = \frac{\frac{2}{3}(5)}{\frac{1}{3}}$ , then multiply the top and the bottom of the fraction by 3 to get  $2 = 10$ . Eliminate (C). Only (D) is left, and checking it by plugging in the values gives  $2 = \frac{\frac{2}{3}(5)}{1 + \frac{2}{3}}$ . Simplifying the denominator on the right side of the equation results in  $2 = \frac{\frac{2}{3}(5)}{\frac{5}{3}}$ , then multiplying the top and the bottom of the fraction by  $\frac{3}{5}$  results in  $2 = 2$ . The correct answer is (D).

11. **B** The question asks for a function for which  $y$  is always greater than or equal to  $-2$ . Since calculator use is not allowed on this section, graphing and checking each function is not an option. Try out some values of  $x$  instead. Usually, zero is a number to avoid, since it messes things up, but the goal here is to find what could be true, so messing things up helps. If  $x = 0$ , (A) becomes  $0^2 - 3 = -3$ . This is not greater than or equal to  $-2$ , so eliminate (A). Choice (B) becomes  $(0 - 3)^2 = 9$ , which is greater than  $-2$ , so keep it for now. Choice (C) becomes  $|0| - 3 = -3$ , and (D) becomes  $(0 - 3)^3 = -27$ . Neither of these values is greater than  $-2$ , so eliminate them. The correct answer is (B).
12. **D** The question asks for an equivalent expression to the fraction given. When a fraction has imaginary numbers in the denominator, multiply the numerator and denominator of the fraction by the complex conjugate of the denominator. The complex conjugate of  $(6 - 3i)$  is  $(6 + 3i)$ . The original expression becomes  $\frac{(1 + 10i)(6 + 3i)}{(6 - 3i)(6 + 3i)}$ . Use FOIL (First, Outer, Inner, Last) to multiply it out to get  $\frac{6 + 3i + 60i + 30i^2}{36 + 18i - 18i - 9i^2}$ . Combine like terms to get  $\frac{6 + 63i + 30i^2}{36 - 9i^2}$ . Since  $i = \sqrt{-1}$ ,  $i^2 = -1$ . Plug this into the expression, which becomes  $\frac{6 + 63i + 30(-1)}{36 - 9(-1)} = \frac{6 + 63i - 30}{36 + 9} = \frac{-24 + 63i}{45}$ . Split this into two fractions, as seen in the answer choices, to get  $\frac{-24}{45} + \frac{63i}{45} = \frac{-8}{15} + \frac{7i}{5}$ . The correct answer is (D).
13. **D** The question asks for the equation that best models the decreasing value of the truck over time. The decay formula states that  $\text{decay} = \text{original}(1 - r)^t$ , where  $r$  is the rate of decay and  $t$  is time. Therefore, the value of the truck after  $t$  years is  $35,000(0.93)^t$ . The correct answer is (D).
14. **A** The question asks for an equivalent expression to the one given. Rather than trying to do some messy algebraic manipulation, try out a simple number like  $x = 2$ . The expression becomes

$\frac{6(2) - 1}{2 + 4} = \frac{11}{6}$ . Now plug  $x = 2$  into the answer choices to see which one equals  $\frac{11}{6}$ . Choice

(A) becomes  $6 - \frac{25}{2 + 4} = 6 - \frac{25}{6} = \frac{36}{6} - \frac{25}{6} = \frac{11}{6}$ . That matches, but check the other answer

choices to be sure. None of them equals  $\frac{11}{6}$  when  $x = 2$ . The correct answer is (A).

15. **B** The question asks for the product of all values of  $k$  that satisfy the quadratic. The product of the roots of a quadratic  $ax^2 + bx + c = 0$  is  $\frac{c}{a}$ . In the given quadratic,  $c = 12$  and  $a = 3$ , so the product is  $\frac{12}{3} = 4$ . Without this handy trick, another way to solve this is to use the

quadratic formula to find the roots, then multiply them together. The quadratic formula is

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ . The values of  $a$  and  $c$  are 3 and 12, respectively, and  $b = -18$ . The solutions

are  $x = \frac{-(-18) \pm \sqrt{(-18)^2 - 4(3)(12)}}{2(3)} = \frac{18 \pm \sqrt{180}}{6} = 3 \pm \sqrt{5}$ . The product is  $(3 + \sqrt{5})(3 - \sqrt{5}) =$

$9 - 5 = 4$ . Either way, the correct answer is (B).

16. **82** The question asks for the value of  $c$  in a quadratic. To compare the two sides of the equation, expand the left side of the equation to get  $3(x - 5)(x - 5) + 7$ . Use FOIL (First, Outer, Inner, Last) on the binomials of the quadratic to get  $3(x^2 - 10x + 25) + 7$ . Distribute the 3 to get  $3x^2 - 30x + 75 + 7 = 3x^2 - 30x + 82$ . Therefore,  $c = 82$ . This is the correct answer.

17. **15** The question asks for the length of line segment  $\overline{AE}$  on the diagram. Because  $\overline{BD}$  and  $\overline{AE}$  are parallel, triangles  $ACE$  and  $BCD$  are similar triangles (all of their corresponding angles are equal to each other). Therefore, the lengths of their sides are proportional. To solve for the length of

$\overline{AE}$ , set up the following proportion:  $\frac{10}{12} = \frac{AE}{18}$ . Cross-multiply to get  $12AE = 180$ . Divide both

sides of the equation by 12 to get  $AE = 15$ . This is the correct answer.

18. **4, 8, 12, 16, or 20**

The question asks for the number of red chips Eve has in a game. Rather than writing equations, try out different numbers. Start by testing whether a single red chip could work. If Eve has one red chip, then she has  $\$120 - \$5 = \$115$  worth of blue chips, which does not divide by 20 for an integer number of blue chips. If Eve had 2 red chips, she would have  $\$110$  worth of blue chips, which still won't work. If Eve had  $\$20$  worth of red chips, though, she would have  $\$100$  left for exactly 5 blue chips. She would need 4 red chips to equal  $\$20$ , so 4 is one possible answer. Any number of red chips that gave Eve a multiple of  $\$20$  would also work, so 8, 12, 16, and 20 are also correct answers.

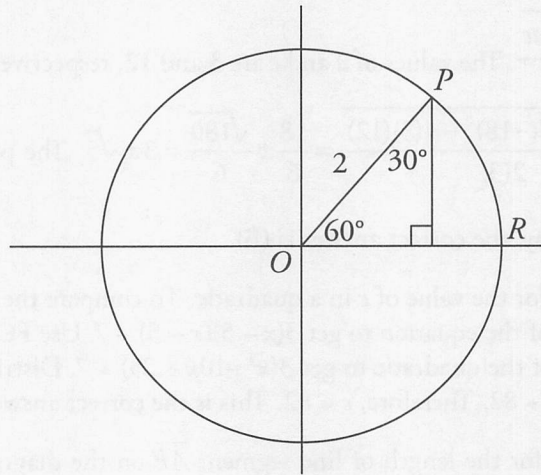
19.  $\frac{17}{6}$  or **2.83**

The question asks for the value of  $a + b$ , where  $a$  and  $b$  are constants in a system of equations. If the system of equations has infinitely many solutions, it means that the two equations are the



same line. Therefore, seek to make the two equations look the same. Multiply the top equation by 3 to get  $\frac{3}{2}x + 3(ay) = 48$ . To make the bottom equation the same, it must be true that  $b = \frac{3}{2}$ , and  $3a = 4$ . Divide both sides of the second equation by 3 to get  $a = \frac{4}{3}$ . Therefore,  $a + b = \frac{4}{3} + \frac{3}{2} = \frac{17}{6}$ . The correct answer can be entered as  $\frac{17}{6}$  or 2.83.

20. 1 The question asks for the  $x$ -coordinate of point  $P$  on the circumference of the circle. Convert the given angle measurement of  $\frac{\pi}{3}$  radians to degrees by multiplying by  $\frac{180}{\pi}$ . This becomes  $\frac{\pi}{3}\left(\frac{180}{\pi}\right) = 60$ . Therefore, the angle  $POR = 60^\circ$ . Next, draw a straight line from  $P$  to the  $x$ -axis, and mark the angles as follows:



The sides of a 30-60-90 triangle are in a ratio of  $1:\sqrt{3}:2$ . Given that 2 is opposite the  $90^\circ$  angle, the length opposite the  $30^\circ$  angle is 1, and the  $x$ -value of  $P$  is therefore also 1. The correct answer is 1.

## Section 4: Math (Calculator)

1. C The question asks for the number of blue tiles in a floor pattern in which there are 9 blue tiles for every 80 tiles. The question says *at this rate*, so set up a proportion. Make sure to have like units on the top and like units on the bottom:
 
$$\frac{9 \text{ blue}}{80 \text{ total}} = \frac{b \text{ blue}}{4,800 \text{ total}}$$
 Cross-multiply to get  $80b = 43,200$ . Divide both sides by 80 to get  $b = 540$ . The correct answer is (C).
2. D The question asks for the value of  $d$  when  $c = 345$ . Plug this value of  $c$  into the equation,  $c = 120 + 75d$ , to get  $345 = 120 + 75d$ . Subtract 120 from both sides to get  $225 = 75d$ . Divide both sides by 75 to get  $d = 3$ . The correct answer is (D).
3. A The question asks for the amount of money the artist will earn if she sells  $l$  large prints and  $s$  small prints. Translate the given information into algebraic expressions. The question states that

the artist makes \$50 for each large print. Since the artist sells  $l$  large prints, she earns a total of  $50l$  for all the large prints. The artist also earns \$35 for each small print. Since the artist sells  $s$  small prints, she earns a total of  $35s$  for all of the small prints. The amount she earns will be equal to the sum of the two amounts, which is  $50l + 35s$ . The correct answer is (A).

4. **C** The question asks for the result when 3 times  $y$  is added to 19. To figure this out, start by translating the first sentence into an equation. The expression *6 times a number  $y$*  translates to  $6y$ . This term *subtracted from 15* translates to  $15 - 6y$ . The term *the result is 33* translates to  $= 33$ , so the whole sentence translates to  $15 - 6y = 33$ . Solve for  $y$ . Subtract 15 from both sides to get  $-6y = 18$ . Divide both sides by  $-6$  to get  $y = -3$ . Now translate the question into an equation. The term *what number* translates to a variable. Use  $x$ . The term *results* translates to  $=$ . The term *3 times  $y$*  translates to  $3y$ . The term *is added to* translates to  $+$ . Therefore, the question translates to  $x = 3y + 19$ . Since  $y = -3$ , plug this into the equation to get  $x = 3(-3) + 19 = -9 + 19 = 10$ . The correct answer is (C).
5. **D** The question asks for the profit the store makes when it sells 6 televisions. It also defines “profit” as the amount of money left after paying 39 percent of the money earned. According to the information given, the total revenue from selling 6 televisions is \$1,440. To determine how much the store paid the factory, take 39% of this by entering  $\frac{39}{100} \times 1,440$  on a calculator to get \$561.60. To find the profit, subtract this amount from the revenue:  $\$1,440.00 - \$561.60 = \$878.40$ . The correct answer is (D).
6. **B** The question asks for the revenue the store will earn if it sells 9 televisions. The information given for this set of questions uses the term *directly proportional*, so set up a proportion in the form  $\frac{x_1}{y_1} = \frac{x_2}{y_2}$ . The information above the question says the store makes a profit of \$1,440 when the store sells 6 televisions. Set up the proportion:  $\frac{\$1,440}{6 \text{ televisions}} = \frac{x}{9 \text{ televisions}}$ . Be sure to put like units in the numerators and like units in the denominators. Cross-multiply to get  $6x = \$12,960$ . Divide both sides by 6 to get  $x = \$2,160$ . The correct answer is (B).
7. **D** The question asks for a system of inequalities to describe the situation. Figure out one small piece at a time and use Process of Elimination. The question says the collector can buy a maximum of 25 records, so the total number of records must be less than or equal to 25. Come up with an expression to determine the total number of records. The number of \$20 records is  $a$  and the number of \$35 records is  $b$ , so the total number of records must be  $a + b$ . Therefore, the correct choice must include the inequality  $a + b \leq 25$ . Eliminate any choice that does not include this: (A) and (B). The other equation in both remaining answers involves an expression set less than or equal to 750. Find 750 in the question. The question states that the collector can spend up to \$750, so come up with an expression for what the collector spends. To find the cost of the \$20 records, multiply the number of these records,  $a$ , by 20 to get  $20a$ . Similarly, to find the total cost of the \$35 records multiply  $b$  by 35 to get  $35b$ . Therefore, the total cost of all the records is this sum:  $20a + 35b$ . This sum must be less than or equal to \$750, so the answer must include the inequality  $20a + 35b \leq 750$ . Eliminate the remaining choice that doesn't include this inequality: (C). Therefore, the correct answer is (D).
8. **C** The question asks for the form of a quadratic equation that shows the  $x$ -intercepts of the parabola. The  $x$ -intercepts, by definition, are the  $x$ -coordinates of the points at which  $y = 0$ , so set  $y = 0$  in the equation to get  $0 = x^2 - 12x + 35$ . Factor the right side of the equation by finding a pair of numbers with a product of 35 and a sum of  $-12$ . This pair is  $-5$  and  $-7$ . The factored form of

the equation, therefore, is  $0 = (x - 5)(x - 7)$ . Set both factors equal to 0 to get  $x - 5 = 0$  and  $x - 7 = 0$ . Solve each equation to get  $x = 5$  and  $x = 7$ . Select the answer that includes both the numbers 5 and 7, which is (C). Alternatively, know that the  $x$ -intercepts are the same as the solutions. To find the solutions, put the equation in factored form. Either way, the correct answer is (C).

9. **A** The question asks for the value of  $p$ , which is the number of points a player has at the start of a game. A player loses 3 points for every question answered incorrectly. If a player answers 15 questions incorrectly, he or she loses  $15 \times 3 = 45$  points. If this player has 165 points remaining, he or she must have started with  $165 + 45 = 210$  points. Since the player started with  $p$  points,  $p$  must equal 210. Therefore, the correct answer is (A).
10. **A** The question asks for the number of days it would take Albert to type the entire document. The table provides the number of pages, sections, and units in the document. However, it does not provide any way to determine the amount of time it would take to type a page, section, or unit, so ignore this information. The table does, however, provide the number of words in the document and the number of words Albert can type per minute. Use the formula: *Amount = Rate  $\times$  Time*. The amount is 181,235 words, and the rate is 85 words per minute. Set up the equation  $181,235 = 85t$ . Divide both sides by 85 on a calculator to get approximately 2,132 minutes (it's okay to round a bit, since the question asks for the closest answer). However, the question asks for days. Each day, Albert expects to devote four hours to typing the document. 2,132 minutes is equal to  $\frac{2,132}{60} = 35.533$  hours. At 4 hours per day, 35.533 hours of typing can be completed in  $\frac{35.533}{4} = 8.88$  days. Select the closest choice, which is 9. The correct answer is (A).
11. **B** The question asks for the number of days at which the trash can with a capacity of 20 cubic feet will be full or overflowing. In other words, it asks when the amount of garbage in the trash can is at or above capacity. First, come up with an expression for the amount of garbage in the trash can. Each day, 3 cubic feet is added. Therefore, after  $d$  days,  $3d$  cubic feet has been added. This amount is added to the original amount, which is 8, so the amount of garbage in the trash can after  $d$  days is  $8 + 3d$ . The question asks for when this amount is at or above capacity, which is 20. Therefore, the inequality is  $8 + 3d \geq 20$ . The correct answer is (B).
12. **C** The question asks for the value of  $m(n(6))$ . For compound functions, start on the inside and work to the outside. The inside is  $n(6)$ . According to the information in the question,  $n(6) = 4$ . Therefore,  $m(n(6)) = m(4)$ . According to the information in the question,  $m(4) = 6$ . Therefore,  $m(n(6)) = m(4) = 6$ . The correct answer is (C).
13. **C** The question asks for the average speed of a point on the Earth's equator. The speed will be measured in kilometers per minute, so determine distance and time in kilometers and minutes, respectively. The circumference of Earth's equator is about 40,000 kilometers, so this is the distance. Earth completes a rotation in one day, which is 24 hours. However, the question asks for minutes, so convert hours to minutes with the proportion  $\frac{1 \text{ hour}}{60 \text{ min}} = \frac{24 \text{ hours}}{x \text{ min}}$ . Cross-multiply to get  $x = 1,440$ . To determine speed, divide distance by time to get  $\frac{40,000 \text{ km}}{1,440 \text{ min}} \approx 28$ . The correct answer is (C).
14. **B** The question asks for the greatest flaw in a survey conducted by a theater owner who is trying to determine whether local residents would prefer to see operas or symphonies by surveying people at a mall on a Sunday. Go through each choice and determine which one describes the cause of a flaw in the theater owner's methodology. Choice (A) is the size of the sample. While it's possible that this



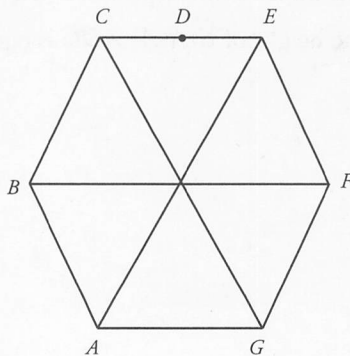
sample size is too small, there is no information about the area's population to determine whether this is a sufficiently or insufficiently large sample. Eliminate (A). Choice (B) is the location in which the survey was given. The location causes a flaw, because it creates a bias toward people who are likely to visit a shopping mall. Keep (B). Choice (C) is the population of the area. There is no information about the population of the area, so it is impossible to determine whether this creates a problem. Eliminate (C). Choice (D) is the residents who declined to respond. There is no reason to think that this significantly hurts sample size or creates a bias. Eliminate (D). The correct answer is (B).

15. **B** The question asks for the year the population on the graph is projected to reach 5,000. Population is expressed by the vertical axis, so find 5,000 on that axis. Trace the line across the graph until reaching the line of best fit. Then, follow downward until reaching the horizontal axis somewhere between 2020 and 2025. The only choice between these two is 2022. The correct answer is (B).
16. **B** The question asks for the half-life of an element. The half-life of the unknown element is approximately 25% less than that of carbon-14. Take 25% of the half-life of carbon-14, which is  $\frac{25}{100} \times 5,730 = 1,432.50$ . Since it's 25% less, subtract this number from 5,730 to get  $5,730 - 1,432.50 = 4,297.50$ , which is closest to 4,300. The correct answer is (B).
17. **D** The question asks for the reason there is a difference between the mean and median salary at the company. The question states that the mean salary of the employees is \$80,000 and the median salary is \$45,000. The mean refers to the average (the sum of the salaries divided by the number of employees), and the median refers to the middle salary when listed in order. If the median is \$45,000, there must be an equal number of employees with salaries greater than \$45,000 and less than \$45,000. If the average is greater than the median, it must mean that the salaries at the top half have a greater effect on the average than the ones at the bottom half, which would happen if a few employees had significantly higher salaries. This is (D). Alternatively, come up with a simple example that describes the situation. For example, there could be three employees with salaries of \$20,000, \$45,000, and \$175,000. The median is \$45,000 and the mean is \$80,000. Go through the choices and eliminate any choice that doesn't describe this situation. Choice (A) says that many employees' salaries are between \$45,000 and \$80,000. In this case, there are no salaries between \$45,000 and \$80,000. Eliminate (A). Choice (B) says the employees' salaries are close to each other. In this case, the salaries are far apart from each other. Eliminate (B). Choices (C) and (D) are opposites. Choice (C) says a few salaries are much lower than the rest, and (D) says a few salaries are much higher than the rest. In this example, the low salary is much closer to the median than the high salary, so eliminate (C). The correct answer is (D).
18. **C** The question asks for the probability that a chosen student did not complete an interview. Probability is defined as  $\frac{\text{want}}{\text{total}}$ . The question says *an accepted student* is chosen, so the *total* is the number of accepted students, which is  $15,700 + 9,300 = 25,000$ . The question asks for the probability that *the student did not complete an interview*, so this number represents the *want*. Make sure to only count the students who did not complete an interview and were accepted, which is 9,300. Therefore, the probability is  $\frac{\text{want}}{\text{total}} = \frac{9,300}{25,000} = \frac{93}{250}$ . The correct answer is (C).
19. **C** The question asks for an inequality to represent the relationship between the amount Mathias saved this month and the amount he usually saves on average. Try using some numbers for the variables. Let  $d = 400$  and  $k = 390$ . Plug these values into the answer choices to see which answer works.

Choice (A) becomes  $400 - 390 < 20$ , which is true. Keep (A). Choice (B) becomes  $400 + 390 < 20$ . This isn't true, so eliminate (B). Choice (C) becomes  $-20 < 400 - 390 < 20$ . This is also true, so keep (C). Choice (D) becomes  $-20 < 400 + 390 < 20$ . Eliminate (D). Now plug in some different numbers to try to eliminate (A) or (C). Try  $d = 390$  and  $k = 400$ . Choice (A) becomes  $390 - 400 < 20$ , and (C) becomes  $-20 < 390 - 400 < 20$ . Both of these are still true. When that happens, try using some numbers that *don't* work—the correct answer will prove false and an incorrect answer may still be true. Try  $d = 400$  and  $k = 450$ , which don't work because they are more than \$20 apart. Choice (A) becomes  $400 - 450 < 20$ , which is still true, so eliminate it. The correct answer is (C).

20. **A** The question asks for the median number of hours spent on homework. The median is the middle number when all the numbers are listed in order. However, in this case, there are too many numbers to list them in order. Instead, think in terms of what the middle number would be. Half the numbers should be greater than the median and the other half of the numbers should be less than the median. Since the president polled 200 students each from the junior and senior classes, a total of 400 students were polled. Therefore, in this case, there should be 200 greater than and 200 less than the median. Therefore, the median is the average of the 200th and 201st numbers. Find the 200th and 201st numbers in the ordered list. Start with the smallest numbers. In the combined junior and senior classes, there are  $25 + 30 = 55$  students who complete one hour of homework a night. The median must be greater than this. In the combined junior and senior classes, there are  $80 + 70 = 150$  students who complete two hours of homework. Therefore, there must be a total of  $55 + 150 = 205$  students with 1 or 2 hours. Since the tally is greater than 201, the 200th and 201st students must be part of the group of students who complete two hours of homework. Therefore, the average of the 200th and 201st (the median) must be 2. The correct answer is (A).
21. **A** The question asks how to compare the number of students who complete four hours of homework in the two classes. The number in the table for both classes is 35, which would seem to point to (D). However, these numbers do not represent the entirety of the two classes but rather a random sample of 200 from each class. Use proportions to determine the actual expected amounts. Since there are 600 students in the junior class, set up the proportion  $\frac{35}{200} = \frac{x}{600}$ . Cross-multiply to get  $200x = 21,000$ . Divide both sides by 200 to get  $x = 105$  students in the junior class who complete four hours of homework per night. Since there are 400 students in the senior class, set up the proportion  $\frac{35}{200} = \frac{x}{400}$ . Cross-multiply to get  $200x = 14,000$ . Divide both sides by 200 to get  $x = 70$  students in the senior class who complete four hours of homework per night. Therefore, the junior class has  $105 - 70 = 35$  more students who complete four hours of homework than does the senior class. The correct answer is (A).
22. **B** The question asks for the radius of a circle in the  $xy$ -plane. The equation of a circle is  $(x - h)^2 + (y - k)^2 = r^2$ , where  $r$  stands for radius. Start by reordering the equation to get  $x^2 - 6x + y^2 + 8y = -9$ . To solve for the radius, it is necessary to complete the squares. Take the coefficient on the  $x$ -term, divide it in half, and square that to complete the square for the  $x$ -terms. This value is 9. Do the same to complete the square for the  $y$ -terms, adding 16. Anything that gets added to one side of the equation must be added to the other, so the full equation is now  $(x^2 - 6x + 9) + (y^2 + 8y + 16) = -9 + 9 + 16$ . Therefore,  $r^2 = -9 + 9 + 16 = 16$ , and  $r = 4$ . The correct answer is (B).
23. **D** The question asks for the square of the distance expressed in terms of the other variables, so solve the equation for  $d^2$ . First, multiply both sides of the equation by  $d^2$  to get  $Gd^2 = ab$ . Then, divide by  $G$  to get  $d^2 = \frac{ab}{G}$ . Therefore, the correct answer is (D).

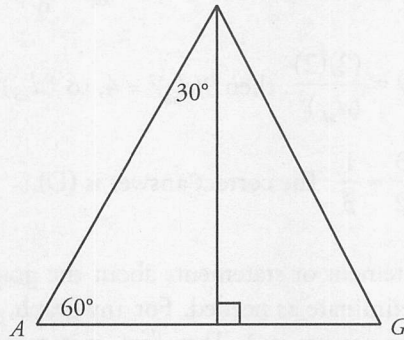
24. **D** The question asks for the relationship between the distances of two pairs of objects with the same mass and one pair with 9 times the gravitational force of the other pair. Start by putting in the same mass for  $k$ ,  $m$ ,  $a$ , and  $b$ . Let  $k = m = a = b = 2$ . The gravitational force between  $k$  and  $m$  is 9 times the force between  $a$  and  $b$ , so plug in  $G_{km} = 81$  and  $G_{ab} = 9$ . Square numbers will work well here, since the distance is squared in the formula. Use these values in the formula to find the distance between the given objects. The gravitational force for  $k$  and  $m$  becomes  $81 = \frac{(2)(2)}{(d_{km})^2}$ , so  $81(d_{km})^2 = 4$ , and  $(d_{km})^2 = \frac{4}{81}$ . Take the square root of both sides to get  $d_{km} = \frac{2}{9}$ . Follow the same steps to find the gravitational force for  $a$  and  $b$ :  $9 = \frac{(2)(2)}{(d_{ab})^2}$ , then  $9(d_{ab})^2 = 4$ , so  $(d_{ab})^2 = \frac{4}{9}$ , and  $d_{ab} = \frac{2}{3}$ . Now make the fraction:  $\frac{d_{km}}{d_{ab}} = \frac{\frac{2}{9}}{\frac{2}{3}} = \frac{2}{9} \times \frac{3}{2} = \frac{1}{3}$ . The correct answer is (D).
25. **C** The question asks for a true statement or statements about the graph of a function in the  $xy$ -plane. Check out each statement and eliminate as needed. For any graph,  $f(x)$  or  $g(x) = y$ . The graph shows that when the  $x$ -value is  $-3$ , the  $y$ -value is  $2$ . Therefore, statement (I) is true. Eliminate (A). The graph shows that when the  $x$ -value is  $2$ , the  $y$ -value is  $2$ . Therefore, statement (II) is false. Eliminate (B) and (D). Only one answer remains, so there is no need to check the third statement. The correct answer is (C).
26. **B** The question asks for a statement that accurately compares the heart rates of two runners. Use Process of Elimination to get rid of answers that don't match the graph. The graph of the athlete who only jogs is linear, which is to say the rate of change is consistent throughout time, while the rate of change for the athlete who alternates running/walking is represented by a curve—it flattens out during minutes 3 and 4. Based on this, eliminate (C) and (D) since the rate of change is not consistent for the running/walking athlete. Eliminate (A) because the rate of change is greater for the athlete who jogs during minutes 3 and 4. The correct answer is (B).
27. **B** The question asks for a true statement about the graph of linear function  $g$  in the  $xy$ -plane. The points of intercept are given with variables in them, so try out some numbers instead. Pick values for  $s$  and  $t$  that make the statement  $t - s = 0$  true, such as  $t = 5$  and  $s = 5$ . Therefore, the points  $(0, 5)$  and  $(5, 0)$  are on the line. The answers all refer to the slope of the line, so plug these points into the slope formula:  $\frac{y_2 - y_1}{x_2 - x_1}$ . This becomes  $\frac{0 - 5}{5 - 0} = \frac{-5}{5} = -1$ . The correct answer is (B).
28. **C** The question asks for the area of a triangle within a hexagon. Rather than trying to remember the formula for the area of a hexagon, ignore triangle  $ADG$  for now and divide the hexagon up into triangles, like this:



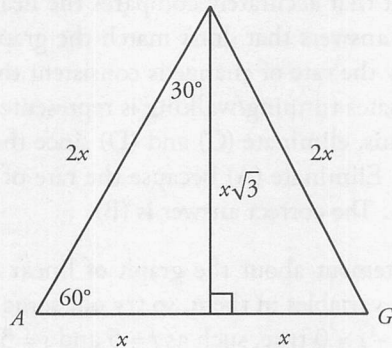


Because the hexagon is a regular one, each of these six triangles is the same. The area of each triangle is  $\frac{1}{6}$  of the hexagon, or  $144\sqrt{3}$ . Each internal angle in a regular hexagon is  $120^\circ$ , so each triangle is equilateral.

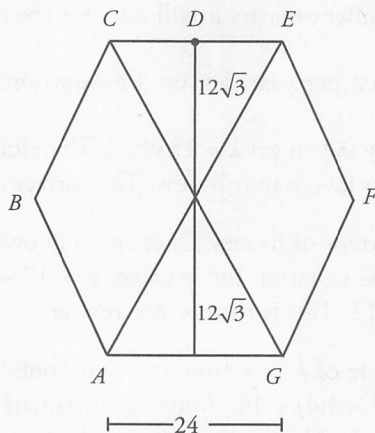
Use this information to find the length of a side of the hexagon. Isolate one triangle to work with, and divide it in half to form two  $30^\circ:60^\circ:90^\circ$  triangles.



To more easily use the relationships of the  $30^\circ:60^\circ:90^\circ$  triangle's sides, label  $\overline{AG}$  as  $2x$ , so the height of the equilateral triangle is  $x\sqrt{3}$ .



The area of a triangle is  $A = \frac{1}{2}bh$ , so plug the information into the formula to get  $144\sqrt{3} = \frac{1}{2}(2x)(x\sqrt{3})$ . Simplify the right side to get  $144\sqrt{3} = x^2\sqrt{3}$ , then divide both sides by  $\sqrt{3}$  to get  $144 = x^2$ . This means that  $x = 12$ , and  $\overline{AG} = 2x = 24$ . This is the base of triangle  $ADG$ . To find the height, go back to the hexagon divided into equilateral triangles. The height of each equilateral triangle is  $x\sqrt{3}$  or  $12\sqrt{3}$ , and the height of triangle  $ADG$  is equal to 2 of these heights, or  $24\sqrt{3}$ .



Plug these values into the area formula to get  $A = \frac{1}{2}(24)(24\sqrt{3}) = 288\sqrt{3}$ . Another way to approach this question is to Ballpark—the area of triangle  $ADG$  is about one-third of the area of the hexagon. Dividing  $864\sqrt{3}$  by 3 results in  $288\sqrt{3}$ . Either way, the correct answer is (C).

29. **A** The question asks for the equation of line  $l$  in the  $xy$ -plane. Start by using Process of Elimination to get rid of equations that have the wrong slope or  $y$ -intercept. The diagram shows that line  $l$  has a negative slope and a negative  $y$ -intercept. All the answers have lines with negative slopes, but only (A) and (D) have negative  $y$ -intercepts. Eliminate (B) and (C). Since line  $l$  is tangent to the circle at point  $A$ , line  $l$  is perpendicular to the line containing  $\overline{AC}$ . Perpendicular lines have slopes that are negative reciprocals, so find the slope of  $\overline{AC}$ . The slope formula is  $\frac{y_2 - y_1}{x_2 - x_1}$ , which becomes  $\frac{7 - (-1)}{3 - (-1)} = \frac{8}{4} = 2$  for  $\overline{AC}$ . Therefore, the slope of line  $l$  is  $-\frac{1}{2}$ . The correct answer is (A).

30. **A** The question asks for the values of constants  $r$  and  $s$  in a system of equations that will result in two real solutions to the system. The solutions to a system of equations are the points the equations share. The line  $y = -2$  is the straightforward equation, so  $y$  must be  $-2$  in the other equation. Plug the values given in each answer choice for  $r$  and  $s$ , along with  $-2$  for  $y$ , into the first equation, and solve for  $x$ . The answer that yields two real solutions for  $x$  will be the correct answer. Choice (A) becomes  $-2 = -2x^2 - 1$ . Add 1 to both sides to get  $-1 = -2x^2$ . Divide both sides by  $-2$  to get  $\frac{1}{2} = x^2$ . Take the square root of both sides of the equation to get  $\pm \sqrt{\frac{1}{2}} = x$ . Therefore, (A) has two real solutions:  $\left(-\sqrt{\frac{1}{2}}, -2\right)$  and  $\left(\sqrt{\frac{1}{2}}, -2\right)$ . The correct answer is (A).

31. **9** The question asks for the value of  $z$  in a time scenario. There are 60 minutes in an hour. To convert minutes into hours, divide the number of minutes by 60.  $\frac{560}{60} = 9.\bar{3}$  or nine and one-third hours. Therefore, 560 minutes is equal to 9 hours and 20 minutes, and  $z = 9$ . This is the correct answer.

32. **15** The question asks for the number of years it will take for the decrease in snowfall to equal 6 inches. The rate of decrease is 0.4 inch per year. Set up a proportion:  $\frac{0.4 \text{ inch}}{1 \text{ year}} = \frac{6 \text{ inches}}{x}$ . Cross-multiply to get  $6 = 0.4x$ , then divide by 0.4 to get  $x = 15$  years. Therefore, it will take 15 years for the average annual snowfall to be 6 inches less than it is now. The correct answer is 15.
33. **12** The question asks for the amount of money Dave initially owed the library. He incurred the initial fine at week 0. Plug 0 into the equation for  $w$  to get  $C = 12 - 1.5(0)$ . Simplify the right side of the equation to get  $C = 12 - 0 = 12$ . This is the correct answer.
34. **12** The question asks for the value of  $k$  in a function that contains the point  $(4, -2)$ . Put  $(4, -2)$  into the function to get  $-2 = 2(4)^2 - k(4) + 14$ . Simplify the equation to get  $-2 = 32 - 4k + 14$ , and  $-2 = 46 - 4k$ . Subtract 46 from both sides to get  $-48 = -4k$ , then divide both sides by  $-4$  to get  $k = 12$ . This is the correct answer.
35. **60** The question asks for the circumference of the circle on the diagram. Because the angle  $COA$  faces two of the five sides of the pentagon, angle  $COA$  is  $\frac{2}{5}$  of the circle. The length of the arc made by this angle is 24, so set up an equation:  $24 = \frac{2}{5} \times \text{circumference}$ . Multiply both sides by  $\frac{5}{2}$  to get  $\text{circumference} = 60$ . This is the correct answer.
36. **575** The question asks for the number of calories in the breakfast sandwich. Translate the information into equations. Let  $b$  represent the number of calories in the breakfast sandwich and  $f$  represent the number of calories in the fried potatoes. The information in the question can then be translated into the following equations:  $b + f = 910$  and  $b = f + 240$ . Solve the second equation for  $f$  by subtracting 240 from both sides to get  $f = b - 240$ . Plug this value for  $f$  into the first equation to get  $b + b - 240 = 910$ . Solve for  $b$  by combining like terms to get  $2b - 240 = 910$ . Add 240 to both sides to get  $2b = 1,150$ , then divide both sides by 2 to get  $b = 575$ . This is the correct answer.
37. **7,000** The question asks for the maximum number of deer the island can support, given the populations for two years. According to the question,  $P_t = 4,200$  and  $P_{t+1} = 4,704$ . Plug these values into the equation to get  $4,704 = 4,200 + 0.3(4,200)\left(1 - \frac{4,200}{C}\right)$ . Simplify the right side of the equation to get  $4,704 = 4,200 + 1,260\left(1 - \frac{4,200}{C}\right)$ . Subtract 4,200 from both sides of the equation to get  $504 = 1,260\left(1 - \frac{4,200}{C}\right)$ . Divide the equation by 1,260 to get  $0.4 = 1 - \frac{4,200}{C}$ . Subtract 1 from both sides to get  $-0.6 = -\frac{4,200}{C}$ , then multiply both sides by  $C$  to get  $-0.6C = -4,200$ . Divide both sides by  $-0.6$  to get  $C = 7,000$ . This is the correct answer.



38. **5,741** The question asks for the deer population 2 years from now. According to the question,  $C = 10,500$  and  $P_t = 4,200$ . Therefore,  $P_{t+1} = 4,200 + 0.3(4,200)\left(1 - \frac{4,200}{10,500}\right)$ . Solve the equation to get  $P_{t+1} = 4,200 + 1,260(1 - 0.4) = 4,200 + 756 = 4,956$ . That's the deer population after one year, but the question asks for the population after two years, so do it again. Plug 4,956 into the equation as the new  $P_t$  to get the deer population two years from now:  $P_{t+1} = 4,956 + 0.3(4,956)\left(1 - \frac{4,956}{10,500}\right)$ . Solve the equation to get  $P_{t+1} = 4,956 + 1,486.8(1 - 0.472) = 4,956 + 785.03 \approx 5,741$ . Only round at the last step to make sure the answer is as accurate as possible. The correct answer is 5,741.