



# Chapter 14

## Practice Test 6: Answers and Explanations

# PRACTICE TEST 6 ANSWER KEY

Section 1: Reading		Section 2: Writing & Language		Section 3: Math (No Calculator)		Section 4: Math (Calculator)	
1. D	27. B	1. D	23. A	1. A	11. A	1. D	20. D
2. C	28. B	2. D	24. D	2. C	12. C	2. B	21. A
3. B	29. B	3. D	25. B	3. B	13. B	3. A	22. B
4. D	30. D	4. A	26. A	4. D	14. A	4. D	23. A
5. C	31. A	5. B	27. D	5. A	15. C	5. D	24. A
6. C	32. C	6. B	28. C	6. D	16. 3	6. C	25. D
7. C	33. D	7. D	29. C	7. C	17. 250	7. C	26. C
8. A	34. C	8. B	30. B	8. A	18. $\frac{3}{5}$ or	8. A	27. C
9. C	35. D	9. C	31. A	9. B	0.6	9. C	28. C
10. C	36. C	10. A	32. B	10. D	19. 9	10. B	29. B
11. B	37. A	11. A	33. C		20. 3	11. D	30. C
12. B	38. B	12. C	34. B			12. A	31. 12
13. B	39. A	13. A	35. C			13. B	32. 216
14. D	40. B	14. D	36. B			14. A	33. 180
15. A	41. C	15. B	37. D			15. B	34. 5
16. C	42. B	16. A	38. C			16. A	35. 350
17. B	43. D	17. B	39. B			17. B	36. 20
18. A	44. C	18. D	40. B			18. D	37. 0.86
19. C	45. B	19. B	41. A			19. B	38. 376
20. D	46. B	20. D	42. D				
21. A	47. C	21. C	43. D				
22. A	48. A	22. D	44. D				
23. A	49. A						
24. D	50. C						
25. A	51. C						
26. D	52. D						

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## PRACTICE TEST 6 EXPLANATIONS

### Section 1: Reading

1. **D** The question asks for the best summary of the passage. Because this is a general question, it should be done after all of the specific questions. Choice (A) incorrectly states that a character *becomes increasingly hostile*; eliminate it. Choice (B) incorrectly states that a *character describes* something, so eliminate (B). Choice (C) states that two characters are *in the same profession*, which is not true, and that they *become increasingly competitive*, which is not true; eliminate it. Choice (D) states that two characters are *traveling together*, which is true, and that they *eagerly await confrontation*. This statement could sound extreme, but it does fit the mention of a *frequent bone of contention* and the idea that one character *liked to infuriate* the other. The correct answer is (D).
2. **C** The question asks for the main purpose of the opening sentence. Read the first paragraph and determine the purpose of the first sentence in context. The first sentence describes *cheerfulness* in general before the paragraph moves forward with specific descriptions of the cheerfulness of the characters. Eliminate any answers that are inconsistent with this prediction. Choice (A) incorrectly mentions a *contrast* and the *narrator's gloom*; eliminate it. Choice (B) refers to an *allegorical representation*, which is not present in the text, so eliminate this answer. Choice (C) matches the prediction, so keep it. Choice (D) incorrectly refers to *violent intentions*; eliminate it. The correct answer is (C).
3. **B** The question asks how the narrator's focus shifts in the second paragraph. Carefully read the second paragraph to determine what the shift is. At the beginning of the paragraph, the narrator says that it is *dreadful* for a parson to be *warlike* and that she remembers *distinctly whose servant he is*, so the narrator is referencing a parson being a *man of peace*. In the second half of the paragraph, the narrator continues by saying to the *parson-haters* that she will not go along *every step* of their *dismal, downward-tending, unchristian road*. The correct answer must have something to do with the shift from acknowledging the parson as a man of peace to disagreeing with those who are anti-parson. Eliminate (A) because the narrator does not want to chastise the clergy. Choice (B) matches the prediction, so keep it. Eliminate (C) because the second part of the paragraph does not mention the clergy's *manners and appearance*. The second half of the paragraph does not discuss two clergymen, so eliminate (D). The correct answer is (B).
4. **D** The question asks about the effect of the words *rancour* and *denunciation* in context. Go back to the second paragraph to see how the words are used. The narrator says *if you are a parson-hater*, she's not going to *go along* with the *poisonous rancour* and *horror and denunciation* toward a rector. The correct answer should have something to do with showing strong anti-clergy sentiments. Eliminate (A) because the narrator has no *fear* of clergymen. Choice (B) can be eliminated because it has nothing to do with the prediction. Eliminate (C) because it does not match the prediction because the narrator speaks to those who are anti-clergy, rather than illustrating her own *sense of dismay*. Choice (D) mentions the *disapproval of clergymen* in the prediction, and the *reader* in the answer choice supports the narrator's use of *you*. The correct answer is (D).
5. **C** The question asks about *Moore's behavior*. Look for *Moore* in the passage and read for context about his behavior. In the first paragraph, the narrator says that both of the men knew that there were those who would have had *great pleasure in shooting either of [them]* and that the two men were *elate[d]* with this knowledge. The final paragraph says *you would expect...they would converse amicably. Oh no!* and then goes on to say that Moore *liked to infuriate Helstone*. It's



clear from the text that Moore likes to fight and pick fights, so the correct answer should reflect this. Choice (A) is deceptive: it contains words seen in the text but describes Helstone rather than Moore. Eliminate it. Choice (B) also describes Helstone rather than Moore, so it can be eliminated. Choice (C) is a solid paraphrase of the prediction, so keep it. Choice (D) is deceptive because the word *superiority* seems to match *reign supreme*, but *reign supreme* refers to Bonaparte, not Moore, so eliminate it. The correct answer is (C).

6. **C** The question asks how Helstone might be described and refers to the narrator's acknowledgment of a *certain evil* in the third paragraph. Look in the third paragraph to see that the narrator's larger point about Helstone is that he is not temperamentally suited to being a priest and *should have been a soldier*. On the whole, he is described positively, though some of his limitations are noted. Eliminate (A), as in the text he is described as *a man almost without sympathy*. Eliminate (B) because Helstone is not a *soldier*. Keep (C), as Helstone is described in lines 43–46 as *conscientious...true to principle*, and *honourable*. Eliminate (D) because its tone is negative and there's no evidence to support such an extreme characterization. The correct answer is (C).
7. **C** The question asks for the best evidence to support the correct answer to the previous question. The lines used to answer the previous question are lines 42–47. The correct answer is (C).
8. **A** The question asks about the effect of comparing Helstone to a Cossack. To answer this question, look at the comparison in context. The narrator says, "*Nor will I curse Helstone, clerical Cossack as he was. Yet he was cursed....*" Thus, being a Cossack is something bad. Choice (A) could be true, so keep it. Choice (B) refers to an event, rather than a person; eliminate it. Choice (C) refers to two men, but this paragraph focuses on Helstone only; eliminate it. Choice (D) refers to an action, rather than a person; eliminate it. The only remaining answer is (A), so select it. The correct answer is (A).
9. **C** The question asks how the men found each other's company sometimes, despite their *excellent spirits*. The contrast indicates to look for a negative idea. Use these lead words to read the window at the beginning of paragraph 4, which states in line 62 that they *chafed each other's moods*. Now read the answer choices to see which matches the evidence. Eliminate (A) because there is no evidence that they found each other *intolerable*, only that they annoyed each other. Choice (B) is irrelevant to the text, so it can be eliminated. Choice (C) matches the idea that they annoyed each other, so keep it. Choice (D) can be eliminated because it's a positive word, and the two men were not *comforting* each other. Choice (C) is appropriately negative for the passage. The correct answer is (C).
10. **C** The question asks for the best evidence for the answer to the previous question. The line used to answer the previous question was line 62. The correct answer is (C).
11. **B** The question asks about the main purpose of the passage. Because this is a general question, it should be done after all the specific questions are completed. The passage is about how *education* is treated like a *commodity*, but this treatment ends up *trivializing education*. Eliminate any answer choices that aren't consistent with this idea. Choice (A) can be eliminated because the passage does the opposite of *advocat[ing] for the marketing of education*. Choice (B) is possible, because the topic is *complex*, and the author of the passage has an opinion, so keep it. The author of the passage has a negative opinion about marketing education, so eliminate (C). Choice (D) incorrectly states that the passage's focus is to evaluate statistics, so eliminate it. The correct answer is (B).

cession the authors make to the view that people are *consumers in*  
at the following question is a best evidence question, so this ques-

12. **B** The question asks about the con  
*the marketplace of life*. Notice th



tion and Q13 can be answered in tandem. Look at the answers for Q13 first. The lines in (13A) say that every aspect of life has *cash value* and *can be purchased*. While this does agree with the view presented in the question, these lines do not support any of the answers for Q12, so (13A) can be eliminated. The lines in (13B) say *this scenario may be appropriate for the sale of shoes...*. This agrees with the idea that people are consumers, and these lines support (12B). Connect these two answers. The lines in (13C) might initially seem to support (12C) because of the mention of *students* and *customers*, but a careful reading shows these two answers don't actually support each other. Eliminate (13C). The lines in (13D) talk about the students *wanting to be entertained*, which isn't mentioned in any of the choices for Q12. Eliminate (13D). Without any support from Q13, (12A), (12C), and (12D) can be eliminated. The correct answers are (12B) and (13B).

13. **B** (See explanation above.)
14. **D** The question asks what the word *assume* means in line 13. Go back to the text, find the word *assume*, 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 refers to the expectation students have that the education they purchase will *meet their needs* and *assume a form they find palatable*. Something like “adopt” or “accept” could work well for the missing word. Choice (A), *guess intelligently*, could be a possible definition of “assume,” but it’s not consistent with the context. Eliminate (A). Choice (B), *pretend grudgingly*, is not consistent with the prediction, so it can be eliminated. Choice (C), *suppose blindly*, is another possible definition of *assume*, but it does not fit the context of the passage, so eliminate it. Choice (D), *take on readily*, fits the prediction. The correct answer is (D).
15. **A** The question asks about the main purpose of the fourth paragraph. Carefully read the fourth paragraph and determine why the author included it in the passage. In the paragraph, the authors translate the educational experience into economic terms, presenting the idea that *achieving some sort of advantage is considered...essential to beating the competition*. They go on to explain how cheating and *dubious maneuvers*, though *unfortunate*, have become rampant because that is an easier way to achieve success. Choice (A) matches the text because the authors do explain the *logic of an attitude* (cheating) and they do disagree with that attitude. Eliminate (B) because it is something the authors may agree with outside of the text, but that’s not what the fourth paragraph is about. Choice (C) has nothing to do with the paragraph and can be eliminated. Although they don’t agree with cheating, the fourth paragraph does not argue against cheating, so (D) can be eliminated. The correct answer is (A).
16. **C** The question asks what the word *enticing* means in line 57. Go back to the text, find the word *enticing*, 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 refers to an *array of courses* being *indispensable to attracting students*. A word similar to “attractive” or “exciting” could work well. Choice (A), *pulling*, is not consistent with that prediction. Choice (B) can be eliminated because the courses are not designed to *deceive*. Choice (C), *appealing*, is consistent with “attractive,” so keep it. Eliminate (D) because *suggestive* is not consistent with the text. The correct answer is (C).
17. **B** The question asks for the best support for the claim that *schools have already begun to incorporate some facets of the popular marketplace into their educational materials*. Read the lines from each answer choice in the passage. The lines in (A) describe what administrators *must* do, rather than what they have already begun to do, so eliminate it. The lines in (B) describe something that *has become normative*, so this could fit; keep it. The lines in (C) describe an effect of treating education as a business, not an aspect of business that has been incorporated into education, so elimi-

nate it. The lines in (D) refer to courses that administrators *have begun to promote*, so keep that answer. Now read closely around (B) and (D) to compare them to each other. Choice (B) mentions a *proliferation of degrees and courses with captivating titles*, which is closely linked to the idea of *advertising consultants* for schools in the next sentence. Choice (D) mentions *trendy courses that administrators have begun to promote*, but this is linked to the idea that *difficult subjects are avoided*, which is not a concept drawn from the marketplace; eliminate it. The correct answer is (B).

18. **A** The question asks about the main idea of the last paragraph. Carefully read the last paragraph to determine the main idea. The paragraph states that *education is trivialized when it is treated like a commodity*. Look for answers that convey the idea that treating education like a business hurts education. Choice (A) contains both of these ideas from the prediction, so keep it. Choice (B) is true, but it is a secondary point in the last paragraph, too narrow to be the main idea. Eliminate (B). Choice (C) is tempting, but it changes the meaning of *trivial* to *unimportant* in the wrong context. Choice (D) is deceptive, using concepts from the last paragraph to say something that the paragraph itself does not say; eliminate it. The correct answer is (A).
19. **C** The question asks what statement is supported by the data in the graph. Look at the graph and notice units and any obvious trends. All three lines show a positive increase, a small one with overall consumer prices and a big one with college textbooks and tuition and fees. Choice (A) mentions an increase, so keep it. Eliminate (B) because it says there is no increase. Choice (C) mentions an increase, so keep it. Eliminate (D) because it says there is a decrease. Now compare (A) and (C). Choice (A) indicates a consistent rise in overall prices, which does not match the graph, whereas (C) indicates a larger increase for tuition and fees, which matches the information in the graph. The correct answer is (C).
20. **D** The question asks during which period the difference was largest between college tuition and fees and overall consumer prices. Look at the graph and see that the largest increase was in 2012. The correct answer is (D).
21. **A** The question asks which idea in the passage is most directly supported by the graph. To answer this question, note that the graph is measuring prices. Now eliminate answers that do not concern prices, which are (B), (C), and (D). Choice (A) is about revenue, which is related to prices and discussed throughout the passage and the graph. The correct answer is (A).
22. **A** The question asks what the authors of the first passage indicate about the addition of nutrients to food, which is covered throughout the whole passage. Notice that the following question is a best evidence question, so this question and Q23 can be answered in tandem. Look at the answers for Q23 first. Start with (23A). The lines say that processed food contributes to *both food security...and nutrition security*. This could support (22A) because contributing to food and nutrition security is a *helpful impact*. Connect those two answers. The lines in (23B) ask how people could *enhance the contribution to...nutritional...and food security*. These lines ask a question rather than present information, so eliminate (23B). The lines in (23C) present a contrast between *limiting processed foods* and *encouraging best available food options*. These lines don't support any of the answers for Q22, so eliminate (23C). The lines in (23D) mention a *disadvantage* in that the techniques are *poorly understood*. These lines may initially seem to support (22C), but there's no indication from the text that they *may require further investigation*. Even though it might make sense that something poorly understood would need further investigation, that's not in the text. Eliminate (23D). The correct answers are (22A) and (23A).
23. **A** (See explanation above.)

24. **D** The question asks about food enrichment methods, which are mentioned throughout the first passage. Use chronology to look for this answer somewhere between the answers to the preceding and following questions. *Food processing techniques* are mentioned in line 37, so carefully read the window, which says that one *disadvantage of commercial food processing techniques* is that they are *poorly understood*. Choice (A) can be eliminated because there is no information about how the food enrichment is done. Choice (B) can be eliminated because there is no mention of *employment opportunities*. Thiamin is mentioned in the fourth paragraph as an enrichment, but the text doesn't actually support choice (C). Eliminate it. Choice (D) is a direct paraphrase of the prediction. The correct answer is (D).
25. **A** The question asks what the word *grasp* means in line 40. Go back to the text, find the word *grasp*, 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 talks about the processing techniques that are *difficult for the general public to grasp*. A word like “understand” could work well. Choice (A), *comprehend*, is consistent with that prediction; keep it. Choices (B), *clutch*, (C), *squeeze*, and (D), *reach*, are all possible definitions for *grasp*, but none of them means “understand.” The correct answer is (A).
26. **D** The question asks what Passage 2's reference to “Big Food” suggests about global food systems. Use lead words to find the window and read carefully. Lines 58–60 state that “*Big Food*” means *multinational food and beverage companies with huge and concentrated market power*. Choices (A) and (C) do not mention companies; eliminate them. Choice (B) refers to single companies that serve individual regions, and (D) refers to a few companies that dominate. Choice (D) is consistent with the prediction. The correct answer is (D).
27. **B** The question asks what profit margins and price/cost surpluses have in common in Passage 2. To answer this question, look for the lead words *profit margins* and *price/cost surpluses*; read the window where they are found in paragraph 6 of Passage 2, which states that *Big Food attains profit by expanding markets to reach more people, increasing people's sense of hunger so that they buy more food, and increasing profit margins through encouraging consumption of products with higher price/cost surpluses*. Choice (A) is not supported by this information, as ethics are not brought up; eliminate it. Choice (B) regarding company concerns could be true with regard to *Big Food* companies; keep it. Choice (C) looks relevant because it mentions economics, but the text isn't discussing *economic theory* in general; eliminate it. Choice (D) goes too far; the passage does not indicate how these things are *best increased*; eliminate it. The correct answer is (B).
28. **B** The question asks about the effect of the possibilities mentioned in the final paragraph of Passage 2. The last paragraph of the passage states that in order to *promote health, industry would need to make and market healthier foods so as to shift consumption away from highly processed, unhealthy foods. Yet, such healthier foods are inherently less profitable*. Eliminate (A); while it uses words from the paragraph, it suggests the opposite of what the text says. Choice (B) is supported by the idea of this being *inherently less profitable*; keep it. Choices (C) and (D) do not fit the text; eliminate them. The correct answer is (B).
29. **B** The question asks about the main purpose of both passages. Because this is a general question about both passages, it should be done after all the questions for each individual passage have been completed. Eliminate choices that are too narrowly focused or that only contain correct information about one passage. Both passages discuss the nutritional concerns of food production. Choice (A) is too specific regarding *vitamin intake* and fits Passage 1 only; eliminate it. Choice (B) is broader and could be true; keep it. Eliminate (C), because it is too specific regarding *nutrition security* and fits some of Passage 1 only. Choice (D) is also too specific regarding *sustainable processing* to be a main idea; eliminate it. The correct answer is (B).



30. **D** The question asks how Passages 1 and 2 are related to each other. Because this is a general question about both passages, it should be done after all the questions for each individual passage have been completed. To answer this question, consider the overall messages of both passages: Passage 1 is positive, saying that American food processing is good, and Passage 2 is more negative, saying that global food systems are problematic. This does not involve *underlying processes* and there is no *solution* in Passage 1, so eliminate (A). Passage 2 does not present a *plan* relating to *processes* presented in Passage 1, so eliminate (B). Each passage seems to have an opinion, rather than *an objective perspective*, so eliminate (C). Choice (D) says that Passage 1 embraces a system, a positive idea, and that Passage 2 explores the problematic nature of a system, a negative idea. The correct answer is (D).
31. **A** The question asks what the authors of both passages would most likely agree on. Because this is a general question about both passages, it should be done after all the questions for each individual passage have been completed. To answer this question, eliminate choices that fit only one or neither passage. Choice (A) mentions adequate nutrition, which both passages examined, so this is possible; keep it. Neither passage discusses whether or not the foods are *appealing*, so eliminate (B). *Suspicion* in (C) is mentioned in Passage 1, but not in Passage 2; eliminate (C). The *nutrient concerns* issue in (D) is absent from Passage 2, and Passage 1 indicates the opposite to be true. The correct answer is (A).
32. **C** The question asks what evidence in Passage 2 matches what is said in lines 48–50 of Passage 1. To answer this question, first review the specific part of Passage 1, and note that it concerns *processing* and *nutritional content*. The lines in (A) discuss processing but not nutrition; eliminate it. The lines in (B) do not discuss processing or nutrition; eliminate it. The lines in (C) discuss both *processing* and nutrition; keep it. Choice (D) has *processing* and mentions *healthier foods*; keep it. To decide between (C) and (D), review the specific part of Passage 1, and note that it focuses on processing and nutrition not necessarily correlating, which means that they might be independent of each other. Choice (C) states that processing *can improve nutritional content*, but that most processing actually serves to *reduce nutritional quality*, suggesting a contrast. Choice (D) states that, for industry to *promote health*, it would need to *shift consumption away from highly processed, unhealthy foods* which indicates that processing and nutrition do correlate. Choice (C) points in two directions, which better fits the prediction. The correct answer is (C).
33. **D** The question asks for the *central problem that Harvey describes in the passage*. Because this is a general question, it should be done after all the specific questions. In lines 1–3, Harvey advocates for *bimetallism*, which is a policy that allows a government to rely on two metals for money. In lines 44–45, Harvey states that *In 1873, the law was changed and gold only was made primary money*. In lines 49–50, he gives a consequence of that action: *One of the main arteries feeding blood to civilization was cut off*. By this metaphor, Harvey implies that the country is economically weakened because the government has ceased production of one of its main sources of currency. Harvey suggests that a return to a system that relies on two metals will fix the economic weakening that has occurred. The change to a new monetary system only reliant on gold is the central problem of his argument. Eliminate answer choices that are not consistent with this prediction. Choice (A) says that the central problem is the government's *financial deficit*, but the passage does not mention a financial deficit. Eliminate (A). Choice (B) says that the government had *previously made silver the primary money of the country*. This is a Mostly Right/Slightly Wrong trap answer; Harvey states that the government made *gold* the primary money, so eliminate (B). Choice (C) says that the central problem is a public announcement made by the government, but the passage does not mention a public announcement by the government; in fact, Harvey indicates that the government did not inform the public about the change. Eliminate (C). Choice (D) says that the central problem is that the government *instituted a monetary system*

*in which only one metal was coined*, which matches the prediction. Keep (D). The correct answer is (D).

34. **C** The question asks for the reason the speaker *uses the phrase “saving principle”*. Use the given line reference to find the window. Notice that the phrase *saving principle* in lines 12–13 is part of the phrase *the same saving principle applies*. The word *same* indicates that the *saving principle* was previously defined, so look back to the beginning of the window. The first sentence of the paragraph defines *bimetallism*. The second sentence provides a benefit of *bimetallism*: *if our trade relations... take our gold away, then we have silver, and no serious injury occurs*. Therefore, the saving principle refers to the idea that, under the law of *bimetallism*, the U.S. economy would not be threatened if the supply of one metal should be depleted. Rather, the government would be protected financially. Eliminate answer choices that are not consistent with this idea. *Excessive spending* does not match *financial protection*. This is a Right Words, Wrong Meaning trap answer based on an alternative meaning of “*saving*” that is not supported by the passage: saving money as opposed to spending money. Eliminate (A). The *saving principle* is a protection plan against *overreliance on one currency*, not a *consequence*. Choice (B) is a Mostly Right/Slightly Wrong trap answer; eliminate it. The *saving principle* is a protection plan against a *fluctuating money supply*. Keep choice (C). There is no indication in the passage that the *saving principle* is the U.S. Treasury’s *current policy*. Eliminate (D). The correct answer is (C).
35. **D** The question asks what the word *vital* most nearly means in line 13. Go back to the text, find the word *vital*, and mark it out. Then read the window carefully, using context clues to determine another word that would fit in the text. Lines 13–14 discuss the central principle of bimetallism, so the correct word should mean something like “central.” Invigorating means “energizing,” which does not match “central.” Eliminate (A). Restorative means “healing,” which does not match “central.” Eliminate (B). Both (A) and (B) are Could Be True trap answers based on other meanings of *vital* that are not supported by the text. *Steady* means “stable,” which does not match “central.” Eliminate (C). *Fundamental* means “essential,” which matches “central.” Keep (D). The correct answer is (D).
36. **C** The question asks for the reason *Harvey contends that the decision to rely on one metal for money is unwise*. This is the first question in a paired set, but it is a specific question, so it can be done on its own. Q35 asked about line 13, so the window for Q36 most likely begins after this line. Scan the passage beginning with line 15 to find a sentence that discusses *the decision to rely on one metal for money*. Lines 17–20 say that with only one metal for money, the alternating *contraction and expansion* of the world’s supply will *make an uncertain and unstable supply*. Therefore, *the decision to rely on one metal for money is unwise* because reliance on one metal will lead to an unstable supply of money material when the world economy fluctuates. Eliminate answers that are not consistent with this idea. Choice (A) says that *silver* has greater *value* than *gold*, but the relative value of silver versus gold does not match the prediction about the unstable money supply. Also, the phrase *sixteen parts of silver to one part of gold* indicates that gold has greater value than silver. Eliminate (A). Choice (B) says that *gold* is *more useful than silver*, but the usefulness of gold does not match the prediction about an unstable supply of money material. Also, this statement is contradicted, since Harvey says, *silver is the most useful of the two*. Eliminate (B). Choice (C) says that *both metals’ availability increases and decreases*. This matches the idea that the fluctuation of the world’s economy will lead to an unstable supply of money material if only one metal is relied upon. Keep (C). Choice (D) says that *U.S. trading partners prefer bimetallism*. This is a Deceptive Language trap answer because the text mentions *trade relations*, but does not say anything about the preferences of U.S. trading partners. Eliminate (D). The correct answer is (C).



37. **A** The question is the best evidence question in a paired set. Because Q36 was a specific question, simply look at the lines used to answer the previous question. Lines 17–20, *With only one of them for money, the contraction and expansion of the world's supply alternating as they will, make an uncertain and unstable supply*, were used in the prediction. The correct answer is (A).
38. **B** The question asks for the *comparison* established in the third paragraph. Use the given line reference to find the window. In the third paragraph, Harvey uses a series of metaphors (*bread and meat*, symmetrical body parts, and the *marriage relation*) to emphasize his point that *it is safer to rely on two metals as currency, rather than one*. Therefore, the third paragraph makes a comparison between monetary policy and elements of the natural world. Eliminate answer choices that are not consistent with this prediction. Choice (A) is a Deceptive Language trap answer. Lines 29–30 mention the *Unseen Power*, but the passage does not draw a distinction between things that are seen and things that are unseen. Eliminate (A). Choice (B) matches the prediction, so keep (B). Choice (C) is a Deceptive Language trap answer. Lines 33–37 mention pairs of *symmetrical body parts*, but these are only mentioned as part of an example used to help draw a comparison with the money supply. Eliminate (C). The author is making an argument that the U.S. should use both *gold and silver* in their monetary supply, but the author is not making a comparison between gold and silver. Eliminate (D), which is another Deceptive Language trap answer. The correct answer is (B).
39. **A** The question asks what the word *strain* most nearly means in line 42. Go back to the text, find the word *strain*, and mark it out. Then read the window carefully, using context clues to determine another word that would fit in the text. Lines 38–43 say that one metal should *relieve the strain upon the other and that the volume of both should be drawn upon to meet the demand for money*. In this case, the *demand for money* places a *strain* on the supply of both metals. Therefore, *strain* must mean something like “demand.” *An excessive demand* matches “demand,” so keep (A). *A bodily injury* does not match “demand;” this is a Could Be True trap answer based on another meaning of *strain* that is not supported by the passage. Eliminate (B). *A forceful action* does not match “demand;” this is a Could Be True trap answer based on another meaning of “*strain*” that is not supported by the passage. Eliminate (C). *A specific lineage* does not match “demand;” this is a Could Be True trap answer based on another meaning of “*strain*” that is not supported by the passage. Eliminate (D). The correct answer is (A).
40. **B** The question asks for the choice that gives a *result of government action*. Notice that this is the first question in a paired set, so it can be done in tandem with Q41. Look at the answers for Q41 first. The lines for (41A) state, *Bimetallism is the right to use either gold or silver as primary money. Thus, under such a law, if our trade relations or the laws of other nations take our gold away, then we have silver, and no serious injury occurs*. The phrase *laws of other nations take our gold away* is a potential result of government action, so look to see whether these lines supports any of the answer choices in Q40. They do not, so eliminate (41A). The lines for (41B) state, *We rely on wheat, corn and rice for bread, on beef, pork and mutton for meat. If one is scarce, we use the other*. These lines do not mention a result of government action; they do not answer Q40, so eliminate (41B). The lines for (41C) state, *In 1873, the law was changed and gold only was made primary money. The mints were left open to the free coinage of gold, but closed as to the free coinage of silver*. These lines support (40B), *the reduced production of silver coins*. Draw a line connecting (41C) and (40B). The lines for (41D) state, *The doctor was to have no option to pay in money made from either of these metals. He was to be limited to gold alone*. This is a metaphor for a consequence of the 1873 law that made gold alone primary money; however, these lines do not indicate that this was a result of government action, so they do not provide the best support for Q40. Eliminate (41D). The correct answers are (40B) and (41C).



41. **C** (See explanation above.)
42. **B** The question asks why Harvey uses the phrase *a popular government*. Use the given line reference to find the window. In lines 53–57, Harvey states, *One of the fundamental principles of a popular government was violated*: the government did not obtain *the consent of the governed* before it changed the law. In lines 57–59, Harvey further states that this action *was not discussed in any campaign, and it was not known to the people for over two years afterward*. If a fundamental principle of *a popular government* is that such a government must obtain the consent of the people it governs before making actions, it can be inferred that *a popular government* should make its actions known to the public. By calling attention to the fact that this right was *violated*, Harvey is making a criticism of these leaders. Eliminate answer choices that are not consistent with this idea. Both *recognize* and *applaud* are positive verbs that do not match Harvey’s negative criticism of government leaders. Eliminate (A) and (C). Choice (B) says that Harvey means to *criticize leaders who conceal actions from the public*. This matches the prediction, so keep (B). Choice (D) says that Harvey means to *denounce leaders who unfairly tax the poor*. Harvey criticizes leaders for being too secretive, not for *unfairly taxing the poor*. Eliminate (D). The correct answer is (B).
43. **D** The question asks for the main purpose of the first paragraph. To answer this question, carefully read the first paragraph, looking for information to indicate the purpose of the paragraph. Several sentences indicate that the amount of ice is shrinking at a rate much faster than what was initially predicted. Look for an answer that matches this idea. Only one sentence talks about the ice reforming, so (A) is too specific; eliminate (A). Although the size is compared to a U.S. state in this paragraph, that’s not the paragraph’s main purpose; eliminate (B). Choice (C) may be tempting because of the *dramatic changes*, but it is flawed because of the mention of *the last century*; eliminate (C). Choice (D) fits, since the trend of the ice melting is occurring much faster than scientists originally predicted. The correct answer is (D).
44. **C** The question asks what the word *projected* means in line 13. Go back to the text, find the word *projected*, 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 talks about the future and when experts “predict” an ice-free summer happening in the Arctic. Choice (A), *hurled*, might initially look attractive because a projectile could be *hurled*, but that meaning isn’t consistent with the context. Eliminate (A). Choice (B), *seen*, is not consistent with “predict,” nor is (D), *illuminated*. Choice (C), *hypothesized*, is consistent with “predicted.” The correct answer is (C).
45. **B** The question asks why the author says the Earth’s tilt is significant. To answer this question, find the lead words *Earth’s tilt* in paragraph 2, and read the window, which says that the tilt *puts the Arctic in 24-hour-a-day darkness or sunlight* in different seasons. The correct answer will have something to do with the tilt affecting sunlight and darkness in different seasons. Choices (A) and (D) are each only true for one season; eliminate them. Choice (C) is inaccurate because there’s no mention of the Earth’s tilt *accelerating ice-free summers*, but (B) fits the prediction. The correct answer is (B).
46. **B** The question asks for the best evidence for the answer to the previous question. Lines 16–21 were used to answer the previous question. The correct answer is (B).
47. **C** The question asks what the word *pace* means in line 47. Go back to the text, find the word *pace*, 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 sentence talks about how fast the ice is being lost, so the missing word must mean something like “speed.” Choice (A), *walk*, refers to a different meaning of *pace*; eliminate it. Choice (B), *loss*, might initially look good because the passage talks about the ice melting, but *loss* is not consistent with “speed.” Eliminate (B). Choice

(C), *rate*, is consistent with “speed,” so keep it. Choice (D), *measure*, can be eliminated because it’s not consistent with “speed.” The correct answer is (C).

48. **A** The question asks what can be inferred about *climate scientists* based on the passage, which is discussed throughout the text. Notice that the following question is a best evidence question, so this question and Q49 can be answered in tandem. Look at the answers for Q49 first. The lines in (49A) state that *opinions differ substantially...among climate scientists*. It’s not clear from the line what those opinions are, but (48A) and (48B) have *agree* and *disagree* options, so these lines could work. Keep (49A). The lines in (49B) mention a paper in which *multiple scientists* agree about the possibility of *an ice-free summer*. No disagreement or uncertainty is mentioned, so these lines do not support any answer choices for Q48. Eliminate (49B). The lines in both (49C) and (49D) mention specific scientists by name. Neither of those choices is broad enough to support any answers for Q48, so they can both be eliminated. This leaves (49A), but there is no clear connection to any of the answers in Q48. Go back to the text and read a window around these lines to determine the scientists’ differing opinions. Just before that line reference, the text describes the increased loss of ice, stating: *The amount of ice remaining, this year, is about the same as the ice lost between the mid-1990s and today. If ice loss continued at that pace, we’d see an ice-free summer sometime around 2030, give or take several years.* Therefore, the differing opinions have something to do with the increased rate of ice melt. Eliminate (48C) and (48D). Compare the remaining two choices. Choice (48A) correctly matches the information in the text, whereas (48B) suggests the opposite idea. Eliminate (48B). The correct answers are (48A) and (49A).
49. **A** (See explanation above.)
50. **C** The question asks for the period that *displays the greatest decline in sea ice minimum area*. Work through each answer choice using the figure. Eliminate (A) because the graph shows only a slight decrease between 1986 and 1987. Eliminate (B) because the graph shows an increase between 1995 and 1996. Keep (C) because there is a decline of about 1.5 million square kilometers between 2006 and 2007. Eliminate (D) because the decline from 2011 to 2012 is only about 1 million square kilometers. The correct answer is (C).
51. **C** The question asks which concept is supported by the passage and by the information in the graph. Consider both the passage, which indicates that the ice is shrinking and will be gone at some point in the future, and the graph, which shows the amount of ice dropping over a 30-year period. Choices (B) and (D) contradict both the passage and the graph, so eliminate them. Choice (A) is possible but is not necessarily true based on information in the passage or the graph. Choice (C) has the best support from both the main ideas of the passage and the downward trend of the graph. The correct answer is (C).
52. **D** The question asks how the graph supports the author’s point that Arctic ice is receding. To answer this question, check each answer against the graph and eliminate those that don’t match the graph or aren’t supported by the text. The graph doesn’t refer to Texas, so eliminate (A). Choice (B) is mentioned in lines 47–49 as a possibility, though not according to the author, and this is not visible in the graph; thus, eliminate it. Choice (C) does not accurately depict the graph; eliminate it. Choice (D) fits both the author’s point and the graph. The correct answer is (D).

## Section 2: Writing and Language

1. **D** Transitions change in the answer choices, so this question tests consistency of ideas. There is the option to DELETE, which may indicate that the question is also testing concision; consider this choice carefully, as the option to delete is often the correct answer. The transitions in the answer choices are all FANBOYS, or coordinating conjunctions. Note that there's a comma just before the underlined portion; a comma followed by FANBOYS can only be used between two independent clauses. The first part of the sentence, *As people become more sensitive to the idea of preserving certain ecosystems*, is not an independent clause. That means that it should be followed by a comma alone, without one of the FANBOYS. Eliminate (A), (B), and (C). The correct answer is (D).
2. **D** Verbs change in the answer choices, so this question appears to test consistency of verbs. However, the underlined portion actually functions as a noun in this sentence. Eliminate (B) and (C) because *reacts* and *interacted* cannot be nouns. Choices (A) and (D) can both be nouns, so choose the one with the most precise meaning in this context. The passage discusses how *humans* influence the *ecosystem*, so eliminate (A) because *interaction* better captures the sense of interplay between humans and the environment than *reaction* does. The correct answer is (D).
3. **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 *the central challenge of maintaining an ecosystem* is that *ecosystems have a tendency to change*. The sentence that begins with the underlined portion states that *one career that has grown by leaps and bounds in the last fifty years is that of the soil conservationist*, a profession that helps clarify *how to work within sustainable ecosystems*. The second sentence introduces a phenomenon—the growth of the soil conservationists' profession—that is explained by the general situation in the first sentence, so the correct transition will reflect that relationship. Choices (A), *Still*, and (B), *Nonetheless*, suggest that the second sentence challenges or changes direction from the idea in the first sentence, so eliminate (A) and (B). Choice (C), *Finally*, suggests that the second sentence offers the last in a series of events rather than an example of an effect of the idea expressed in the first sentence, so eliminate (C). Choice (D), *Therefore*, correctly reflects the relationship between the two sentences. The correct answer is (D).
4. **A** Note the question! The question asks which choice *most effectively sets up the subject discussed* in the paragraph, so it tests consistency of ideas. Determine the subject of the paragraph and find the answer that is consistent with that idea. The beginning of the sentence that contains the underlined phrase establishes that the paragraph will describe *the factors that must be considered* in a certain situation. The rest of the paragraph describes how *coastal areas are particularly susceptible* to erosion of the soil by ocean water, so *a soil conservationist might be asked to conduct a survey of the region in order to determine where it would be safest to build*. The paragraph also mentions *one's dream house, which would not be quite so ideal if it were at constant risk* from environmental deterioration. Look for an answer choice that is consistent with the discussion of constructing a house in a coastal area. Choice (A) mentions *building a beach house*, so keep (A). Eliminate (B), because the phrase *performing these tasks* does not give a precise indication of the paragraph's subject. Choice (C) mentions *the changes in the seasons*, which is inconsistent with the focus of the rest of the paragraph; eliminate (C). Choice (D) is consistent with the topic of *soil conservation*, but the *subject discussed in this paragraph* is the construction of a house in a coastal area, not soil conservation generally, so eliminate (D). The correct answer is (A).
5. **B** The length of the phrase changes in the answer choices, so this question tests precision and concision. The non-underlined portion of the sentence explains that *coastal areas* are especially *suscepti-*



ble to the influence of particular kinds of changes *because of the water from the ocean and in the air*. All of the answer choices include some variation of the word *erosion*. Choice (B), *erosion*, names the force that affects coastal areas, so keep (B). Choices (A), (C), and (D) all use more words than (B) does. In the case of (A) and (C), the words *things* and *what* make the sentence less precise; eliminate (A) and (C). In the case of (D), *process of* is not needed, so (D) is less concise than (B) without providing any additional information; eliminate (D). The correct answer is (B).

6. **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 phrased in the same way to be consistent with each other. The first two items in the list are *collapsing* and *shifting*, so the third item must also be in an *-ing* form. Eliminate (A) and (C) because they do not include the necessary *-ing* ending. While (D) uses the word *deteriorating*, it includes the noun *structures*, which is inconsistent with the other phrases in the list; eliminate (D). Choice (B), *deteriorating*, is consistent with the other items in the list. The correct answer is (B).
7. **D** Note the question! The question asks which answer choice *most effectively combines the underlined sentences*, so it tests precision and concision. In the original underlined sentences, the phrase *each in its way* refers to each of the *techniques* that *soil conservationists* employ in specific cases; the correct answer will retain that relationship between ideas. Choice (A) suggests that *soil conservationists* are themselves *ways of preserving or reviving land*, rather than the professionals who use those methods, so eliminate (A). In (B), the phrase *each one of them* appears before any mention of the *variety of techniques* employed by *soil conservationists*, which makes the relationship between those ideas unclear; eliminate (B). Choice (C) describes *soil conservationists*, instead of their *techniques*, as *geared toward preserving or reviving land where crops are grown*; while the conservationists may be interested in preserving or reviving such land, this answer choice does not combine the sentences in a way that maintains the original sentences' stated relationship between ideas, so eliminate (C). Choice (D) correctly suggests that, of the *variety of techniques* that soil conservationists use, *each in its way is geared toward preserving or reviving land*. The correct answer is (D).
8. **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 surrounding it, the phrase should be added. Prior to the proposed phrase, the sentence describes *farming techniques* on which *soil conservationists might advise* in order to *help the land produce to its full potential*. The new phrase provides specific examples of those techniques, which is consistent with the rest of the sentence, so the phrase should be added. Eliminate (C) and (D). The proposed phrase names *no-till farming*, which is mentioned later in the paragraph, but it does not *demonstrate the advantages of methods described later in the sentence*, so eliminate (A). The proposed phrase does provide *specific instances of the techniques discussed in this sentence*, so keep (B). The correct answer is (B).
9. **C** Verbs change in the answer choices, so the question tests consistency of verbs. A verb must be consistent in number with its subject. The subject of the verb is *no-till farmlands*, which is plural. To be consistent, the underlined verb must also be plural. Eliminate (A) and (D), because *has* is singular. The difference between (B) and (C) is the presence of the word *which*. Adding the word *which* makes the sentence incomplete, so eliminate (B). The correct answer is (C).
10. **A** Vocabulary changes in the answer choices. The underlined portion is part of a list in the sentence, so the question tests consistency. All items in a list must be phrased in the same way to be consistent with one another. The other items in this list use a single word to describe a particular kind of ecosystem, then use a prepositional phrase to describe where that ecosystem is located: *deserts of the Southwest* and *forests of the Northwest*. To be consistent, the correct answer should also describe the ecosystem of the *Midwest* using a single word. Eliminate (B), (C), and (D),

because they use multiple words to characterize an ecosystem of the Midwest. Choice (A), *plains*, is consistent with the other items in the list. The correct answer is (A).

11. **A** Note the question! The question asks which answer choice *most clearly ends the passage with a restatement of the writer's claim*, so it tests consistency of ideas. Determine the main claim of the passage and find the answer that is most consistent with that idea. The first paragraph of the passage introduces a soil conservationist as someone whose work guides *both public and private entities as to how to work within sustainable ecosystems*. The subsequent paragraphs provide further explanation of how a soil conservationist's work does that. Choice (A) restates the idea that *soil conservationists do important work because they continue to strike the balance between natural spaces and the people who live in them*, so keep (A). Choice (B) claims that while soil conservationists do *essential work, just as much is required of the builders and contractors who accompany them*; *builders and contractors* are not consistent with the main idea of the passage, so eliminate (B). Choice (C) suggests that the public work of soil conservationists is *better because it can be enjoyed by all*, which is not a restatement of the writer's main claim; eliminate (C). Choice (D) claims that *the desert is unique* and that, therefore, the *skills that soil conservationists learn* in desert ecosystems are *difficult to transfer between regions*. While this idea is consistent with a claim made earlier in the final paragraph, choice (D) does not restate the main claim of the passage as a whole, so eliminate (D). The correct answer is (A).
12. **C** 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 part of the sentence that comes before the transition suggests that *there may be some controversy* regarding *who earns these awards*, while the part of the sentence that follows the transition states that *there can be no doubt that the winners are always accomplished in their fields*. The second part of the sentence is in contrast to the first part of the sentence. Eliminate (A), *therefore*, (B), *for example*, and (D), *fittingly*, because all are transitions that suggest the second part of the sentence agrees with the idea in the first part of the sentence. Keep (C), because *however* correctly contrasts the second part of the sentence with the first part. The correct answer is (C).
13. **A** The length of the phrase after *disciplines* changes in the answer choices, so the question tests concision. First, determine whether additional words are necessary. The underlined portion serves to connect *disciplines* and *the world at large*, both of which are realms in which the prize winners *have contributed something significant*. In this case, a word is needed to signal that *disciplines* and *the world* are a pair, and the most concise answer, (B), uses only a comma, so eliminate (B). Choice (A) uses *and* to connect *disciplines* with *the world*, which effectively signals their relationship, so keep (A). Choice (C) adds *it's*, which is a contraction of *it is*. This addition creates an independent clause; since the first part of the sentence is also an independent clause, the comma cannot be used to link them, so eliminate (C). Choice (D) suggests that *the world at large* is an *example* of the *disciplines* within which prize winners work, which is inconsistent with the relationship between the ideas; eliminate (D). The correct answer is (A).
14. **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 surrounding it, then it should be added. The paragraph discusses the significance of the *Nobel Peace Prize*, and the tendency of the prize committee to reward *bravery in the face of adversity*. The new sentence discusses the *1962 prize in Physiology*, so it is not consistent with the rest of the ideas in the paragraph, and the sentence should not be added. Eliminate (A) and (B). Choice (C) inaccurately states that the sentence implies that *all Peace Prize winners must also be scientists*; the sentence under consideration does not mention *Peace Prize winners*, so eliminate (C). Choice (D) accurately states that the new sentence diverges *from the paragraph's main focus on another prize*. The correct answer is (D).



15. **B** Verbs change in the answer choices, so this question tests consistency of verbs. A verb must be consistent with other verbs in the sentence. The other verb in the sentence is the present tense *see*. To be consistent, the underlined verb must also be in the present tense. Eliminate (A) because *rewarded* is past tense. Apostrophes also change in the answer choices, so this question also tests apostrophe usage. When used with a noun, an apostrophe indicates possession. Nothing belongs to the *committee* in this sentence, so no apostrophe is necessary. Eliminate (C) and (D). The correct answer is (B).
16. **A** Pronouns and punctuation change in the answer choices, so this question tests both the consistency of pronouns and how to connect ideas with the appropriate punctuation. When used with a pronoun, an apostrophe indicates a contraction. *They're* is the contraction of *they are*, which is not the possessive pronoun needed in this sentence; eliminate (B) and (C). Both (A) and (D) use the correct pronoun, *their*. The first part of the sentence, *This is a difficult thing to quantify, but the Peace Prize is as important as the other prizes and contributes to their common goal*, is an independent clause. The second part of the sentence, *to make the world a better place*, is not an independent clause. A semicolon can only be used between two independent clauses, so eliminate (D). Choice (A) appropriately uses the possessive pronoun *their* and uses a colon to connect the two ideas in the sentence. The correct answer is (A).
17. **B** Commas change in the answer choices, so this question tests comma usage. There is no need to put a comma after *King's*, as *King's influence spanned the globe* should not be broken up with commas. Eliminate (A) and (C). Choice (D) inserts a comma after *minister*. The phrase *King's influence spanned the globe* is necessary to the main meaning of the sentence, so there is no reason to include that comma; eliminate (D). No commas are necessary. The correct answer is (B).
18. **D** Note the question! The question asks which choice *gives a specific supporting detail that is most similar to the details already in the paragraph*. Eliminate answers that are inconsistent with the purpose stated in the question. The paragraph states that King *won* the Nobel Peace Prize *amid his non-violent campaign for civil rights in the United States*. Look for an answer choice that is consistent with those details. Eliminate (A) because the details already in the paragraph do not reference the *friends, family, and loved ones* of those who were *seeking civil rights*. Eliminate (B) because *the people throughout the world* is not *specific*, especially because the sentence containing the underlined phrase already states that *King's influence spanned the globe*. The paragraph states that *it is probably no surprise* that King won the award, so (C), which states that King's influence was important for *all who thought that the Nobel Prize should be awarded to someone who deserved it*, implies a disagreement with the ideas stated elsewhere in the paragraph: eliminate (C). Choice (D) states that King's influence was important for *those who championed a cause in non-violent ways*, a detail that is both *similar to the details already in the paragraph* and also names a *specific* group of people. The correct answer is (D).
19. **B** The order of phrases in the sentence changes in the answer choices, so this question tests precision. Look for an answer choice that avoids confusion about pronouns and about modifying clauses. In (A), the phrase *when given to first-year President Barack Obama* does not clearly modify a specific noun: the phrase could describe either *controversy* or *the award*. For that reason, eliminate (A). In (B), the pronoun *it* clearly refers to *the award*, and the order of the phrases makes clear that the *good deal more controversy* resulted from the award's being *given to first-year President Barack Obama*: keep (B). In (C), the order of the phrases suggests that the pronoun *it* refers to *first-year President Barack Obama*, instead of *the Prize*; eliminate (C). Finally, the order of phrases in (D) suggests that the pronoun *it*, which describes the object *awarded to first-year President Barack Obama*, refers to the *good deal more controversy*, not to the *award*: eliminate (D). The correct answer is (B).



20. **D** Note the question! The question asks which choice *most effectively combines the sentences at the underlined portion*, and transitions change in the answer choices, so it tests consistency of ideas. The first sentence notes that *King may be the most famous African-American recipient of the Nobel Peace Prize*, while the second sentence explains that *the honor was first given to a lesser-known but no less illustrious figure, Ralph Bunche, in 1950*. The correct answer will effectively signal the shift from talking about King to talking about the lesser-known Bunche. Choice (A) uses a colon to connect the ideas, which incorrectly suggests that the second sentence illustrates or further clarifies, so eliminate (A). Eliminate (C), since the use of *for* also incorrectly suggests that the latter sentence clarifies the former. Eliminate (B), since the *while* suggests that the two statements express parallel ideas—King was famous while Bunche was first—whereas the paragraph is actually transitioning *from* the idea of King’s fame *to* a consideration of Bunche. Choice (D) effectively links the two sentences by using *yet* to signal that even though King was *the most famous*, it was Bunch who *first* received *the honor*. The correct answer is (D).
21. **C** Note the question! The question asks which choice *most closely matches the stylistic pattern established earlier in the sentence*, so it tests consistency. The other comparable nouns named in the sentence are the *1949 Armistice Agreements* and *the 1948 Arab-Israeli Conflict*. To be consistent with the *stylistic pattern* used to describe those events, the correct answer should begin with a year. Eliminate (A) and (D), because they begin with the phrase *the Nobel Peace Prize*. Choice (B) uses an apostrophe to indicate that *1950* possesses the *Nobel Peace Prize* won by Bunche; this is inconsistent with the stylistic pattern in the sentence, so eliminate (B). Choice (C) begins with the year *1950* and does not include an apostrophe, and so is consistent with the style used elsewhere in the sentence. The correct answer is (C).
22. **D** Note the question! The question asks where paragraph 5 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 5 introduces the example of *Ralph Bunche* as a different kind of Prize winner than *King*, so the paragraph must come after some mention of *King* and his being *the most famous African-American recipient of the Prize*. Martin Luther King, Jr., is not named in the passage until paragraph 3, so paragraph 5 must not come before paragraph 3: eliminate (B) and (C). Paragraph 4 mentions Bunche by only his last name in a list of *winners* of the *Nobel Peace Prize*, so the description of *Ralph Bunche* and his winning of the Prize must come before paragraph 4: eliminate (A). The correct answer is (D).
23. **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 the *most obvious facet of global warming is the rise in global temperatures*. The sentence that includes the underlined transition begins by introducing *what many do not understand quite as well*, and the sentence concludes by naming *the factors that contribute to that rise in global temperatures*. The sentence containing the underlined transition is therefore in contrast to the previous sentence: the *most obvious facet of global warming* is being compared to *what many do not understand quite as well*. Eliminate (B), (C), and (D), because *thereby*, *correspondingly*, and *thus* suggest that the idea in the second sentence is a logical consequence of or agreement with the idea in the first sentence. Choice (A), *however*, correctly indicates that the second sentence introduces a subject that is in contrast with the subject introduced in the first sentence. The correct answer is (A).
24. **D** The length of the underlined phrase changes in the answer choices, so this question tests precision and concision. Check the shortest answer first. Choice (D), *analogous functions*, provides the necessary information that functions performed by *heavy machinery* are *analogous* to the previous sentence’s description of what happens *every time you breathe*, so keep (D). Choice (A) states

that the *functions could be called analogous*; the additional words do not make the sentence more precise, so eliminate (A). Choice (B) suggests that *Factories, cars, and other heavy machinery* are working as an analogy, rather than that an analogy can be drawn between their functions and human respiration; eliminate (B). Choice (C) states that the functions are *like analogies*, but the main idea of the sentence is that the functions of the machinery can be related to human respiration by analogy, so eliminate (C). The correct answer is (D).

25. **B** Note the question! The question asks whether a piece of information 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 discusses the consequences of *excess carbon dioxide* that is emitted as a result of the *heavy output* from a *wide variety of industrial sources*. The new phrase explains why the  $CO_2$  emitted by these industrial sources causes the *Earth's atmosphere to be bombarded*, so it is consistent with the main idea of the sentence: eliminate (C) and (D). The new phrase does not mention *the trees in the Amazonian rainforest*, so eliminate (A). The new phrase does explain *why high levels of  $CO_2$  can be a problem in the Earth's atmosphere*, so keep (B). The correct answer is (B).
26. **A** 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. The underlined pronoun refers to *the compound*, which is singular. To be consistent, the underlined pronoun must also be singular. Eliminate (C), because it contains the plural pronoun *they*. Eliminate (D), since *there* refers to a place or a phenomenon and not to *the compound*. Choice (A), *it's*, is a contraction of *it is*, while (B), *its*, is a possessive. A subject and verb are needed to complete the idea that *the compound* is *always absorbing heat energy*, so eliminate (B). The correct answer is (A).
27. **D** Note the question! The question asks which choice *offers an accurate interpretation of the data in the chart*, so it tests consistency. Read the labels on the graph carefully, and look for an answer that is consistent with the information given in the graph. Choices (A) and (B) are not consistent with the figure, since *temperatures* have not *increased along exactly the same curve* as the *steady rate* by which *carbon dioxide has increased*, but it is also not the case that *temperatures have shown no general increase*. Eliminate (A) and (B). Choice (C) states that the *temperature changes peaked in 1989*. While there was a spike in temperatures around that year, subsequent years have reached the same level, so the levels did not *peak* in 1989; eliminate (C). Choice (D) correctly notes that *although temperatures have fluctuated, they have generally increased as well*. The correct answer is (D).
28. **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 some *earthly mechanisms* exist that *absorb the levels of carbon dioxide in the atmosphere*, so the correct answer must mean something like “decrease” or “lower.” *Chill out* means “relax,” so eliminate (A). *Kill* means “destroy,” so eliminate (B). *Reduce* means “make smaller,” which is consistent with the idea of decreasing the amount of carbon dioxide, so keep (C). *Mellow* means “calm down,” so eliminate (D). The correct answer is (C).
29. **C** Commas change in the answer choices, so this question tests comma usage. There is no reason to break up the sentence with a comma, so eliminate (B) and (D). Adding the words *would* and *then*, as in (A), does not make the sentence more precise, so eliminate (A). Choice (C) is concise and gives the sentence a precise meaning. The correct answer is (C).
30. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas with the appropriate punctuation. As written, the first part of the sentence, *A team of over 150 researchers produced the first comprehensive map of the Amazon rainforest's ecosystem and said*, is not an independent clause, and the second part of the sentence, *“that half of the Amazon could be deforested*

by 2050, is also not an independent clause. There is no closing quotation mark at the end of the sentence, so the quotation mark in (A) is incorrect: eliminate (A). A single dash must be used after an independent clause, so eliminate (D). There is no reason to break up the sentence with a comma, so eliminate (C). No punctuation marks are necessary to connect the two parts of the sentence. The correct answer is (B).

31. **A** Pronouns and nouns change in the answer choices, so this question tests precision. A pronoun can only be used if that pronoun refers clearly to another noun in the sentence. The pronoun *them* could refer to the *Amazon's trees* or to *significant emission reversals*, so the pronoun is not precise: eliminate (B) and (D). There is nothing in the sentence for the pronoun *it* to refer to, so eliminate (C). Choice (A) names the noun that *protecting the Amazon's trees* could *temper*, and the pronoun *those* clearly refers to *polluting behaviors*, so (A) is the most precise option. The correct answer is (A).
32. **B** Punctuation changes in the answer choices, so this question tests how to connect ideas using the appropriate punctuation. Because the phrase *of processes* describes the noun *series*, there is no reason to break up the phrase *series of processes* with any piece of punctuation, so eliminate (A), (C), and (D). The non-underlined part of the sentence introduces a comma before the word *or*, and the phrase *or series of processes* is unnecessary to the main meaning of the sentence, so the comma inserted after *processes* in (B) is correct. The correct answer is (B).
33. **C** Note the question! The question asks for *the most logical place in this paragraph to add the following sentence*, 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 an action that *could go a long way toward reforesting the Amazon rainforest*, and the new sentence refers to that action as *This*, which means the new sentence must come after the action has been described. Sentence 2 states that *as many as 57% of Amazon tree species could be eligible* for inclusion on a *red list of threatened species*, an action that would, logically, *go a long way toward reforesting the Amazon rainforest*. Consequently, the new sentence should not come before sentence 2: eliminate both (A) and (B). Sentence 3 states that *protecting the Amazon's trees* could be helpful in some ways, but it also introduces the idea that *other polluting behaviors would need to change as well*, so sentence 3 should come after the new sentence: eliminate (D). The correct answer is (C).
34. **B** The phrase after *formal* changes in the answer choices, so this question tests precision and concision. The first part of the sentence introduces the subject of the sentence as something that *sometimes* happens, while the second part of the sentence includes the phrase *as in the case of a writer* who behaves a certain way. The non-underlined portions of the sentence already establish that this situation only occurs sometimes, so eliminate (A), which suggests the situation can arise *in any case*. Keep (B), because it is the shortest answer and because the sentence does not require a transitional phrase between the two parts of the sentence. Choice (C) suggests that the first part of the sentence is in contrast to the idea introduced in the previous sentence, which is inconsistent with the ideas in the sentence, so eliminate (C). There is no cause-and-effect relationship between the first and second parts of the sentence, so the *therefore* included in (D) is imprecise; eliminate (D). The correct answer is (B).
35. **C** Note the question! The question asks which option *provides information that best supports the claim made by this sentence*, so it tests consistency. Eliminate answer choices that are not consistent with the purpose stated in the question. The sentence states that sometimes literary influence is *more literal* than the influence described earlier, and it gives the example of when writers *take marginal characters from earlier works*. Choice (A) states that *sometimes poems or movies are included*, which does not support the sentence's main claim about how *influence* can be *more*



- literal*: eliminate (A). Choice (B) states that writers influenced in this way *don't cite the author's name at all*, which is inconsistent with the discussion of this phenomenon as *influence*: eliminate (B). Choice (C) notes that writers might *build new literary worlds* around the characters taken *from earlier works*, which supports the sentence's main focus on a type of *influence*: keep (C). Choice (D) asserts that writers might *still consider* their work *entirely their own*; since the sentence does not claim that these writers are doing something other than creating their own work, this characterization is inconsistent with the main claim of the sentence, so eliminate (D). The correct answer is (C).
36. **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 states that *With the framework set by the biblical story*, *Paradise Lost* *offers a unique interpretation*, and the second part of the sentence describes how *the story focuses on the fallen angel Satan*. The second part of the sentence describes in more detail what happens in the *unique interpretation* offered by *Paradise Lost*. Eliminate (A), *just as*, which suggests that the second part of the sentence is parallel or equivalent to the first part of the sentence. Since the second part of the sentence provides more detail about the *interpretation* offered by *Paradise Lost*, the second part of the sentence is describing what happens in the interpretation, not what happens *from* it, so eliminate (C). *Wherein* means “inside which,” so keep (B). Choice (D), *into it*, suggests that the *story* in the second part of the sentence is going *into* the interpretation, rather than that the *story* already exists inside the interpretation, so eliminate (D). The correct answer is (B).
37. **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 says that *Milton claimed* that a particular approach allowed him to “*justify the ways of God to men*,” so the sentence must come after some mention of John Milton’s full name; it cannot come before sentence 1, so eliminate (A). Because sentence 2 describes Milton’s approach as *this alternate route*, the sentence must come after an explanation of how Milton’s work reinterprets an earlier work. Such an explanation appears in sentence 4, so sentence 2 cannot come before sentence 4: eliminate (B) and (C). The correct answer is (D).
38. **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, *The practice of adapting literary works, particularly the great classics of a language*, is not an independent clause. The second part of the sentence, *to unique ends has continued*, 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). Note the comma following *works* in the non-underlined portion of the sentence. The phrase *particularly the great classics of a language* is not necessary to the main meaning of the sentence, so it should be set off with a pair of commas. Eliminate (B) because it lacks a comma after *language*. The correct answer is (C).
39. **B** 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 *As Milton had before*, *Rhys uses a well-known work* to provide *an alternate story*, so the correct answer should mean something like “write.” *Overtake* means “catch up with,” so eliminate (A). *Tell* is close to “write,” so keep (B). Choice (C), *manifest*, means “make evident,” and (D), *ideate*, means “form an idea.” Neither of these meanings works as well as *write* to keep the emphasis of the sentence on how Rhys formulates the story using *a well-known work*, so eliminate (C) and (D). The correct answer is (B).

40. **B** 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. *Adapted* means “reworked,” while *adopted* means “took as one’s own.” The word that is consistent with the ideas of the passage is *adapted*; eliminate (C) and (D). In this sentence, *Algerian writer Kamel Daoud* is the subject of the noun *adapted*, so it is unnecessary to repeat the subject with the pronoun *he*: eliminate (A). The correct answer is (B).
41. **A** Verbs and pronouns change in the answer choices, so this question tests consistency of verbs and pronouns. A verb must be consistent with the other verbs in the sentence. The other verb in this sentence is *centers*, which is in present tense, so the correct answer should also include a verb in present tense. Eliminate (C), because *killed* is in past tense. A verb must also be consistent with its subject. The subject of the underlined verb is *the protagonist Meursault*, so eliminate (D), because *killing* would imply that the subject is *Camus’s novel*. The difference between (A) and (B) is pronouns. Using the subject pronoun *he* makes the second part of the sentence an independent clause, which would mean that the comma in the non-underlined portion of the sentence is incorrect: eliminate (B). Choice (A) uses the pronoun *who* to indicate that *the protagonist Meursault* is the subject of the verb *kills* without making the second part of the sentence an independent clause. The correct answer is (A).
42. **D** Vocabulary changes in the answer choices, so this question tests precision of word choice. Use POE, and guess if there is more than one answer left. Choice (A) uses the word *description*, while the other answers have *descriptive*. It could be correct to say that the book “has more description than” another book, but the verb in the non-underlined portion is *is*, not *has*, so this phrasing doesn’t work. Eliminate (A). The word *then* is used to indicate time, while *than* is used to indicate a comparison or contrast. *Than* is the appropriate word in this context, so eliminate (C). Choices (B) and (D) differ only in the addition of a comma: it is unnecessary here to insert a comma between *descriptive* and the word that follows it, so eliminate (B). The correct answer is (D).
43. **D** Note the question! The question asks whether a sentence should be added, so it tests consistency. If the content of the new question is consistent with the ideas surrounding it, then it should be added. The paragraph discusses how *The Meursault Investigation* provides a name and backstory to a minor character from *The Stranger*. The new sentence discusses the centuries-long *history of Franco-Algerian relations*, so it is not consistent with the ideas in the text: the sentence should not be added. Eliminate (A) and (B). The new sentence does not *contradict the passage’s larger claim that literature cannot be defined by historical events*, because the passage does not claim that literature is unrelated to historical events: eliminate (C). Choice (D) states that the new sentence *strays from the paragraph’s main focus*, which is consistent with the content of the paragraph and the sentence. The correct answer is (D).
44. **D** Vocabulary changes in the answer choices, so this question tests precision of word choice. There is also the option to DELETE; consider this choice carefully, as it is often the correct answer. The sentence already states that the works that draw on earlier texts *make literal what all other texts merely imply*, so it is unnecessary to repeat the idea that other texts *do not state* what they are doing: eliminate (A). Because the sentence states that *all other texts* also draw on earlier works, it is also unnecessary to repeat that other texts also operate in the same way: eliminate (B) and (C). The underlined portion should be deleted to make the sentence more concise. The correct answer is (D).



## Section 3: Math (No Calculator)

1. **A** The question asks for the point that satisfies the system of equations. Rather than doing complex algebra, try out the  $(x, y)$  values in each answer to see if they work. Start with (B). Using the values given in (B), the first equation becomes  $2(-1) + 3(-3) = -9$ . Simplify the left side of the equation to get  $-2 - 9 = -9$  or  $-11 = -9$ . This isn't true, so eliminate (B). Whether to go up or down may not be clear, so just choose a direction. Using the values given in (A), the first equation becomes  $2(-3) + 3(-1) = -9$ . Simplify the left side of the equation to get  $-6 - 3 = -9$ , or  $-9 = -9$ . That works, so plug the values into the second equation to get  $-3 - (-1) = -2$ . Simplify the left side of the equation to get  $-3 + 1 = -2$ , and  $-2 = -2$ . The values given in (A) work in both equations. Therefore, the correct answer is (A).
2. **C** The question asks for the value of  $\frac{y}{x}$ . Rather than do algebraic manipulation, choose a value for one of the variables and solve for the other. Since there are two instances of the variable  $x$  in the equation, select a value for  $x$ . Let  $x = 4$ . Plug this into the equation to get  $4 = 4(4 + y)$ . Distribute the 4 to get  $4 = 16 + 4y$ . Subtract 16 from both sides to get  $-12 = 4y$ . Divide both sides by 4 to get  $y = -3$ . The question asks for  $\frac{y}{x}$ , which is  $-\frac{3}{4}$ . The correct answer is (C).
3. **B** The question asks for the length of line segment  $\overline{SQ}$  on the figure. When two triangles have the same angles and sides in a given ratio, they are similar. Check to see if that is the case here. The question gives the ratio of the lengths of  $\overline{ST}$  and  $\overline{SU}$ . Since these two segments are sides of triangles  $PST$  and  $QSU$ , respectively, determine whether these two triangles are similar. All that is needed to prove that two triangles are similar is to find two pairs of congruent corresponding angles. Since both triangles have a right angle, there is one pair. Also, the question states that triangle  $PQR$  is isosceles with  $\overline{PR} = \overline{QR}$ . In an isosceles triangle, equal angles are opposite equal sides, so  $\angle P \cong \angle Q$ . Thus, triangles  $PST$  and  $QSU$  have a second pair of congruent corresponding angles and are similar. Therefore, all corresponding sides have the same ratio. The question asks for the length of  $\overline{SQ}$ , which is opposite the right angle. Since  $\overline{PS}$  is also opposite a right angle,  $\overline{PS}$  and  $\overline{SQ}$  are corresponding. Therefore, their lengths are in a ratio of 5:3. Therefore, there are 8 parts in the ratio for the total length of  $\overline{PQ}$ , but the question says that the actual length of  $\overline{PQ}$  is 64. The parts of the ratio must be multiplied by 8 to get 64. To find the length of  $\overline{SQ}$ , multiply the ratio number for  $\overline{SQ}$ , which is 3, by the multiplier of 8 to get an actual length of 24. The correct answer is (B).
4. **D** The question asks for the meaning of the number 4 in the profit expression. When dealing with profit, it is important to know that Profit = Revenue – Expenses. According to the question, profit =  $4bd - 200$ . Therefore, the expression  $4bd$  must be related to the revenue the chocolate-covered banana stand brings in. Because  $b$  represents the number of bananas sold each day, and  $d$  is the number of days, the 4 must be related to revenue dollars. Eliminate (A) and (C) since neither of these answers is related to dollars. The question does not say that the price of bananas increases on any given day, so it's safe to assume that the price of a chocolate-covered banana remains the same irrespective of the day it is bought. Therefore, eliminate (B). The correct answer is (D).
5. **A** The question asks for a true equation regarding  $y$ , the number of Java Jim's stores added. Translate the information to find the value of  $y$ . According to the question, 700 coffee stores existed in 2003, which is one-half of the number of coffee stores that were added from 2004 to 2014. Therefore,  $2 \times 700 = 1,400$  stores were added from 2004 to 2014. Plug  $y = 1,400$  into each of the answer choices to see which one works. Choice (A) becomes  $\frac{1}{2}(1,400) = 700$ , or  $700 = 700$ .



Since this equation works, keep it, but check the other answers. Choice (B) becomes  $2(1,400) = 700$ , (C) becomes  $700(1,400) = \frac{1}{2}$ , and (D) becomes  $700(1,400) = 2$ . Even without calculating the exact values, it is easy to see that none of these equations are true. The correct answer is (A).

6. **D** The question asks for values of  $m$  for which Stream Supreme's monthly cost is less than Download Empire's. Translate the information in the question into an inequality and solve it. *Less than* translates into  $<$ , not  $\leq$ , so eliminate (B) and (C). To watch  $m$  movies, the cost with Stream Supreme would be \$7 for the monthly fee plus \$1.75 for each movie, or  $\$7 + \$1.75m$ . The cost with Download Empire would be  $\$4 + \$2.25m$ . Therefore, the inequality is  $\$7 + \$1.75m < \$4 + \$2.25m$ . Subtract \$4 from both sides to get  $\$3 + \$1.75m < \$2.25m$ , then subtract  $\$1.75m$  from both sides to get  $\$3 < \$0.50m$ . Divide both sides by \$0.50 to get  $6 < m$ . The correct answer is (D).
7. **C** The question asks for the equation to be solved for  $h$  in terms of the other variables, so isolate the  $h$ . Start by multiplying both sides of the equation by  $\mu d$  to get  $q\mu d = (p_e - p_{wf})kh$ . Next, divide both sides by  $(p_e - p_{wf})k$  to get  $\frac{q\mu d}{(p_e - p_{wf})k} = h$ . This does not match any of the answers exactly, but rewriting the numerator with the  $q$  in the middle makes it match (C). The correct answer is (C).
8. **A** The question asks for the meaning of 4 in the equation relating  $s$  and  $C$ . Unlike many questions of this type, the answers do not refer to different parts of the situation. Instead, they refer to changes in  $s$  that will result from changes in  $C$ . Try out some values for  $C$  to determine the effect on  $s$ . To start, plug in  $C = 4$  and  $C = 0$  to determine what happens when there is an increase or decrease of  $4^\circ\text{C}$ . If  $C = 0$ , then  $s = 110 + 4(0) = 110$ . If  $C = 4$ , then  $s = 110 + 4(4) = 126$ . As the temperature,  $C$ , increases by 4 degrees from 0 to 4, there is an increase in  $s$  of  $126 - 110 = 16$ , so eliminate (C). Also, as  $C$  decreases by 4 degrees from 4 to 0 there is a decrease in  $s$  of 16, so eliminate (D). Now, test a temperature change of  $1^\circ\text{C}$ . Plug in  $C = 1$  to compare the results to those from  $C = 0$ . If  $C = 1$ , then  $s = 110 + 4(1) = 114$ . Therefore, as the temperature decreases from  $C = 1$  to  $C = 0$ , there is a decrease in the number of scoops sold of  $114 - 110$ . Choice (B) says there would be an increase, so eliminate (B). On an increase from  $C = 0$  to  $C = 1$ , there is an increase of 4. This is what is described in (A). The correct answer is (A).
9. **B** The question asks for a description of the changes to the amount Stephan saves over time. Information is given about Stephan's plan over a period of 9 months. Find the increase in savings over that time:  $\$280 - \$145 = \$135$  increase in savings over the 9-month period. Find the increase each month:  $\$135 \div 9 = \$15$  additional savings per month. The correct answer is (B).
10. **D** The question asks for an equation that will only have  $y$ -values that are less than 2. Since this is in the No Calculator section, try out some values for  $x$  to see what happens to  $y$  in each equation. Let  $x = 10$ . Choice (A) becomes  $y = -(10^2) + 3 = -100 + 3 = -97$ . Since  $y$  is less than 2, leave (A), but check the remaining answers just in case. Choice (B) becomes  $y = |-10| - 1 = 10 - 1 = 9$ . Since  $y$  is greater than 2, eliminate (B). Choice (C) becomes  $y = 10^3 - 4 = 1,000 - 4 = 996$ . Eliminate (C). Choice (D) becomes  $y = -(10 - 1)^2 + 1 = -81 + 1 = -80$ . Since this value for  $y$  is less than 2, keep (D). Now try a weirder number, such as  $x = 0$ , in the remaining answer choices. Choice (A) becomes  $y = -(0^2) + 3 = 0 + 3 = 3$ . Since this is a value greater than 2, eliminate (A). Therefore, the correct answer is (D).

11. **A** The question asks for the value of  $f(-4)$ . If the function equation were given in  $f(x)$  form,  $-4$  would replace  $x$ . However, the function is written in  $f(x + 1)$  form, so  $-4$  replaces  $x + 1$ . Since  $-4 = x + 1$ , subtract 1 from both sides to get  $x = -5$ . Therefore,  $f(-4) = 3(-5) - 4 = -15 - 4 = -19$ . The correct answer is (A).
12. **C** The question asks for the value of  $a$  when the complex fraction is rewritten in the form  $a + bi$ . To get rid of the fractions, get the  $i$  out of the denominator by multiplying the expression by the conjugate of the denominator. Multiplying the expression by  $\frac{2 + 3i}{2 + 3i}$  is the same as multiplying by 1, so it won't change the value. This becomes  $\frac{(5 - i)(2 + 3i)}{(2 - 3i)(2 + 3i)} = \frac{10 + 15i - 2i - 3i^2}{4 + 6i - 6i - 9i^2} = \frac{10 + 13i - 3i^2}{4 - 9i^2}$ .
- Since  $i = \sqrt{-1}$ ,  $i^2 = -1$ . Substitute  $-1$  for  $i^2$  to get  $\frac{10 + 13i - 3(-1)}{4 - 9(-1)} = \frac{10 + 13i + 3}{4 + 9} = \frac{13 + 13i}{13}$ .
- Divide by 13 to get  $1 + i$ . Therefore, if  $a + bi = 1 + i$ , then  $a = 1$ . The correct answer is (C).
13. **B** The question asks for the sum of all the values of  $p$  that work in the equation. For all quadratic equations in the form  $y = ax^2 + bx + c$ , the sum of the roots equals  $-\frac{b}{a}$ . In the equation given,  $-\frac{b}{a} = -\left(\frac{24}{3}\right) = -8$ . Without that handy trick, it is still possible to answer the question using the quadratic formula to find the roots. Then add them together to get  $-8$ . Either way, the correct answer is (B).
14. **A** The question asks for a true statement regarding  $a$ ,  $b$ , and  $c$  in the standard form of a quadratic, which forms a parabola. The parabola passes through the point  $(-1, -1)$ , so plug  $x = -1$  and  $y = -1$  into the equation of the parabola. The equation of the parabola is  $y = ax^2 + bx + c$ , so  $-1 = a(-1)^2 + b(-1) + c$ . Simplify this equation to get  $-1 = a(1) + b(-1) + c$  and  $-1 = a - b + c$ . The correct answer is (A).
15. **C** The question asks for the possible values for  $r$  in an equation. Start by expanding the left side of the equation to get  $pqx^2 + 3px + 5qx + 15 = 8x^2 + rx + 15$ . Subtract 15 from both sides of the equation to get  $pqx^2 + 3px + 5qx = 8x^2 + rx$ . The two  $x$  terms on the left can be combined as  $(3p + 5q)x$ . When two quadratics are equal to each other, the coefficients on the  $x^2$  terms on both sides are equal, and the coefficients on the  $x$  terms on both sides are equal. From this, it can be determined that  $pq = 8$  and  $3px + 5qx = rx$ . Simplify the second equation by dividing by  $x$  to get  $3p + 5q = r$ . Given that  $2 \times 4 = 8$  and that the question states that  $p + q = 6$ , one of the values for either  $p$  or  $q$  could be 2 and the other could be 4. If  $p = 2$  and  $q = 4$ , then  $3(2) + 5(4) = r$ . Simplify the right side of the equation to get  $6 + 20 = r$ , and  $26 = r$ . Eliminate (A), (B), and (D), which do not contain this value. The correct answer is (C).
16. **3** The question asks for the value of  $y$  in the equation. To solve for  $y$ , isolate the variable. First, distribute the negative sign to get  $4y + 8 - 7y + 12 = 11$ . Combine like terms to get  $-3y + 20 = 11$ . Subtract 20 from both sides to get  $-3y = -9$ . Divide both sides by  $-3$  to get  $y = 3$ . The correct answer is 3.
17. **250** The question asks for the number of square feet of floor space in a double room. Translate the information in the question into equations. Let  $d$  represent the square footage of a double room,

and  $s$  represent the square footage of a single room. According to the question,  $d = s + 25$ . Solve the equation for  $s$  to get  $s = d - 25$ . According to the question,  $2d + 4s = 1,400$ . Substitute  $d - 25$  in for  $s$  to get  $2d + 4(d - 25) = 1,400$ . Distribute the 4 to get  $2d + 4d - 100 = 1,400$ . Combine like terms to get  $6d - 100 = 1,400$ . Add 100 to both sides of the equation to get  $6d = 1,500$ , then divide both sides by 6 to get  $d = 250$ . This is the correct answer.

18.  $\frac{3}{5}$  or 0.6

The question asks for the value of  $\sin(90^\circ - a^\circ)$ . There is a useful trigonometry rule that states  $\cos \theta = \sin(90 - \theta)$ . Therefore,  $\sin(90 - a^\circ) = \cos a^\circ = \frac{3}{5}$ . Without knowing that rule, it is still possible to answer this question. Draw a right triangle and label one of the acute angles as  $a^\circ$  and the other as  $(90 - a^\circ)$ . If  $\cos a^\circ = \frac{3}{5}$ , the side adjacent to the angle with  $a^\circ$  is 3 and the hypotenuse is 5. Now find  $\sin(90 - a^\circ)$ : it is the value of the side opposite  $(90 - a^\circ)$  over the hypotenuse, or  $\frac{3}{5}$ . The correct answer is  $\frac{3}{5}$  or 0.6.

19. 9 The question asks for the value of  $k$  and says that  $x + 3$  is a factor of  $x^2 + kx + 2k$ . By definition, this means that  $x^2 + kx + 2k = 0$  if  $x + 3 = 0$ . If  $x + 3 = 0$ , subtract 3 from both sides to get  $x = -3$ . Plug this value in for  $x$  into the equation  $x^2 + kx + 2k = 0$  to get  $(-3)^2 + (-3)k + 2k = 0$ . Simplify the equation to get  $9 - 3k + 2k = 0$ . Combine like terms to get  $9 - k = 0$ . Add  $k$  to both sides to get  $9 = k$ . The correct answer is 9.
20. 3 The question asks for the real value of  $x$  in a third-degree polynomial. Look for things to factor out of two or more terms. Factor  $x^2$  out of the first two terms to get  $x^2(x - 3) + 5x - 15 = 0$ . Factor 5 out of the last two terms to get  $x^2(x - 3) + 5(x - 3) = 0$ . Factor out the  $(x - 3)$  from both parts of the left side and rewrite the equation as  $(x^2 + 5)(x - 3) = 0$ . If  $x^2 + 5 = 0$ , then  $x^2 = -5$ , which results in two imaginary values for  $x$ :  $\sqrt{-5}$  and  $-\sqrt{-5}$ . Therefore, the real value of  $x$  is when  $x - 3 = 0$ , and  $x = 3$ . This is the correct answer.

## Section 4: Math (Calculator)

- D** The question asks for the number of pies sold. Translate the information in the question into an equation. The store sold a total of 364 slices, 84 of which were individual slices. Since individual slices sold do not affect the number of pies sold, these 84 slices should not be counted. In order not to count them, subtract them from the total to get the total number of slices sold as parts of pies. Therefore, eliminate any choice that does not include  $364 - 84$ . This eliminates (A), (B), and (C). Only (D) remains. To determine why (D) is correct, note that  $364 - 84$  represents the number of slices sold in pies. To get the number of pies, divide this total by the number of slices in each pie, which is 8. Therefore, the number of pies sold is  $\frac{364 - 84}{8}$ . The correct answer is (D).
- B** The question asks for the measure of  $\angle b$  in the figure. In this scenario, parallel lines are cut by another set of parallel lines, and two kinds of angles are created—big and small. All the small



angles are equal to each other, all the large angles are equal to each other, and any large angle plus any small angle equals  $180^\circ$ . The given angle,  $\angle a$ , is a big angle, and  $\angle b$  is a small angle. So  $125 + \angle b = 180$ , and angle  $\angle b = 55^\circ$ , which is (B). The correct answer is (B).

3. **A** The question asks for the probability of selecting a certain type of chocolate from the box. According to the table, there are 5 white chocolate pieces with cream filling, 3 dark chocolate pieces with no filling, and 30 total pieces in the box. Therefore, the probability of selecting a piece that is either white chocolate with cream filling or dark chocolate with no filling is  $\frac{5 + 3}{30} = \frac{8}{30}$ . The correct answer is (A).

4. **D** The question asks for the equation that gives  $x$  in terms of  $T$  and  $y$ , where  $x$  and  $y$  are legs of a triangle with perimeter  $T$ . The perimeter of a triangle is the sum of the individual sides. Since no values are given for the sides, assign numbers to the variables. The question says that the sides have length  $x$ ,  $x$ , and  $y$ , so let  $x = 3$  and  $y = 4$ . Thus, the perimeter is  $T = 3 + 3 + 4 = 10$ . Plug  $T = 10$ ,  $x = 3$ , and  $y = 4$  into each choice and eliminate any that are not true equations. Choice (A) is  $3 = 10 - 4$ . Since this is false, eliminate (A). Choice (B) is  $3 = 10 - 2(4)$ . Since this is false, eliminate (B). Choice (C) is  $3 = \frac{10 - 2(4)}{2}$ . Since this is false, eliminate (C). Choice (D) is  $3 = \frac{10 - 4}{2}$ . This is true. The correct answer is (D).

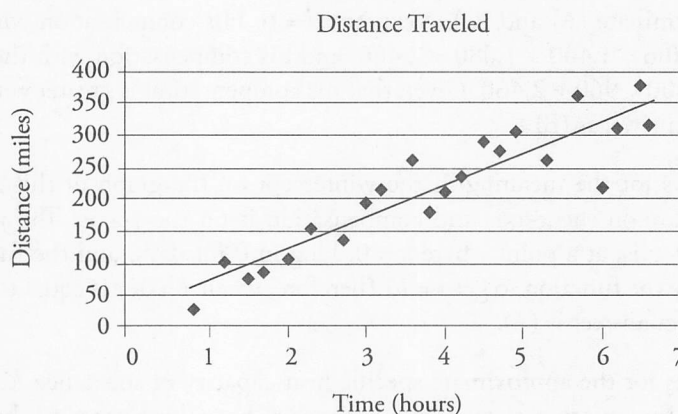
5. **D** The question asks for the point that satisfies the given system of equations. To solve a system of equations, stack and then add them to try to make a variable disappear. To do this, it may be necessary to manipulate the equations first. In this case, multiply the second equation by  $-2$  to get  $-2x + 8y = -38$ . Stack and add the equations.

$$\begin{array}{r} 2x + 3y = -6 \\ -2x + 8y = -38 \\ \hline 0x + 11y = -44 \end{array}$$

Therefore, the result is  $11y = -44$ . Divide both sides by 11 to get  $y = -4$ . Eliminate any answer choice for which the  $y$ -coordinate is not  $-4$ : (A), (B), and (C). Only (D) remains. To determine why the  $x$ -coordinate is 3, plug  $y = -4$  into one of the equations. Try the original form of the second equation. If  $x - 4y = 19$ , then  $x - 4(-4) = 19$ , and  $x + 16 = 19$ . Subtract 16 from both sides to get  $x = 3$ . The correct answer is (D).

6. **C** The question asks for the result when 3 times  $n$  is subtracted from 5. Use the information in the question to create an equation to solve for  $n$ . The first part of the question indicates that  $8 - 6n = 20$ . Subtract 8 from both sides of the equation to get  $-6n = 12$ , then divide both sides by  $-6$  to get  $n = -2$ . The question is asking for the value of  $5 - 3n$ . Substitute  $-2$  for  $n$  to get  $5 - 3(-2) = 5 + 6 = 11$ . The correct answer is (C).
7. **C** The question asks for the inequality that will show the number of minutes for which the football stadium is below capacity. Given that there are 25,000 attendees at 12 p.m. and the number of attendees increases by 550 every minute, the number of attendees  $m$  minutes after 12 p.m. can be expressed as  $25,000 + 550m$ . The full capacity of the stadium is 65,000. To calculate the time prior to the stadium reaching full capacity, the equation would read  $25,000 + 550m < 65,000$ . The correct answer is (C).

8. **A** The question asks for the probability that a chosen resident of age 35–64 has an income between \$50,000 and \$74,999. According to the table, the total number of residents between the ages of 35 and 64 who have an income between \$50,000 and \$74,999 is  $7,185 + 14,978 = 22,163$ . These numbers are all in the thousands, and the total will be as well. Those extra zeros cancel out when making the probability, so don't worry about them. The total number of residents between the ages of 35 and 64 is  $39,919 + 83,213 = 123,132$ . Therefore, the approximate probability that a resident randomly selected in this age range has an income between \$50,000 and \$74,999 is  $\frac{22,163}{123,132} = 0.18$ . The closest answer is 20%. The correct answer is (A).
9. **C** The question asks for the number of gallons of fuel the truck will use in the 4-hour drive. The question says the truck traveled at an average speed of 70 miles per hour for 4 hours. If the speed and time are given, multiply them to get the distance, so  $d = (70 \text{ mph})(4 \text{ hours}) = 280 \text{ miles}$ . The truck has a fuel efficiency of 18 miles per gallon. Set up a proportion:  $\frac{1 \text{ gallon}}{18 \text{ miles}} = \frac{g \text{ gallons}}{280 \text{ miles}}$ . Cross-multiply to get  $280 = 18g$ . Divide both sides by 18 to get  $g \approx 15.56$ . The question says *approximately*, so round this to 16. The correct answer is (C).
10. **B** The question asks for the time shown by the data point farthest from the line of best fit. No line is given, so draw an estimate of the line of best fit onto the graph itself. It should look something like this.



- The point farthest away from the line is at about (6, 220). Since time is represented by the  $x$ -axis, the time is 6 hours. The correct answer is (B).
11. **D** The question asks for the equation that gives altitude in terms of temperature. Isolate the variable  $a$  in the given equation. Start by subtracting 212 from both sides of the equation to get  $t_b - 212 = -0.0018a$ . Multiply both sides of the equation by  $-1$  to get  $-t_b + 212 = 0.0018a$ . Divide both sides by 0.0018 to get  $\frac{-t_b + 212}{0.0018} = a$ . Reorder the terms in the numerator to get  $\frac{212 - t_b}{0.0018} = a$ . The correct answer is (D).
12. **A** The question asks for the scatterplot with a positive association that is not linear. First, eliminate any answer that does not have a positive association. In a positive association,  $y$  increases as  $x$  increases, so eliminate any choice for which this is not true. Eliminate (C), since it doesn't appear to have a clear positive or negative association. Eliminate (D), since it decreases then increases, so it's not consistently increasing. The question asks for the one that is not linear, so eliminate the answer that is

linear. A linear association is one in which a line rather than a curve best fits the data points. In (B), the data points roughly form a linear pattern, so eliminate this choice. The correct answer is (A).

13. **B** The question asks for the equation that gives  $h$  in terms of the other variables. Isolate the variable  $h$  in the given equation. Start by multiplying the entire equation by  $t$  to get  $vt = h - m + 4.9t^2$ . Isolate the  $h$  by adding  $m$  and subtracting  $4.9t^2$  on both sides to get  $vt + m - 4.9t^2 = h$ . Reorder the terms to get  $-4.9t^2 + vt + m = h$ . The correct answer is (B).
14. **A** The question asks for the meaning of the statement that  $(7, 0)$  is a solution to an equation. The question says that  $x$  refers to the number of days after the shipment is received and  $y$  refers to the number of oranges that remain. Therefore, since  $(7, 0)$  is a solution, there are 0 oranges remaining 7 days after the shipment. Go through each choice and determine whether it reflects this information. Choice (A) seems to be consistent with this, so keep (A). Choice (B) says that there are 7 oranges, but 7 refers to days rather than oranges, so eliminate (B). Choice (C) refers to 455 customers, but since there is no information about how many oranges are sold to each customer, the number of customers cannot be determined. Eliminate (C). Similar to (B), (D) refers to 7 oranges rather than 7 days, so eliminate (D). The correct answer is (A).
15. **B** The question asks for the number of days at which the player's compensation will be greater playing for the Eagles than for the Jays. There are different values in the answers, so try out a number of days and see what happens. Let  $d = 4$ . The player's total compensation if he played for the Eagles would be  $1,400 + (140 + 40)4 = 1,400 + 720 = 2,120$ , and his compensation if he played for the Jays would be  $1,500 + (130 + 30)4 = 1,500 + 640 = 2,140$ . Given that his compensation would be higher with the Jays, eliminate (A) and (C). Next, try  $d = 6$ . His compensation with the Eagles would be  $1,400 + (140 + 40)6 = 1,400 + 1,080 = 2,480$ , and his compensation with the Jays would be  $1,500 + (130 + 30)6 = 1,500 + 960 = 2,460$ . Given that his compensation is greater with the Eagles, eliminate (D). The correct answer is (B).
16. **A** The question asks for the meaning of the  $y$ -intercept on the graph of this situation. The question states that days are on the  $x$ -axis and compensation is on the  $y$ -axis. The  $y$ -intercept is where the line crosses the  $y$ -axis, at a point where  $x = 0$ . Plug in 0 for days, and the function becomes  $y = b + (s + m)0$ . Simplify the function to get  $y = b$ . Therefore, when  $x = 0$ ,  $y$  is equal to  $b$ , which is the signing bonus. The correct answer is (A).
17. **B** The question asks for the approximate specific heat capacity of substance  $K$ . Start by using Process of Elimination. The question states that substance  $K$  has a heat capacity that is lower than that of methyl alcohol. Eliminate (D) since it is greater than 0.6. To calculate the heat capacity of substance  $K$ , find 30% of 0.6, which is  $0.3 \times 0.6 = 0.18$ . Therefore, the heat capacity of substance  $K$  is  $0.6 - 0.18 = 0.42$ . The correct answer is (B).
18. **D** The question asks for the relationship between  $c$  and  $d$ , two constants in a pair of linear inequalities. The point  $(-1, 0)$  is given as the solution, which means that point is on the graphs of both. Plug  $x = -1$  and  $y = 0$  into both inequalities and solve them for  $c$  and  $d$ , respectively. The first inequality becomes  $0 < -1 + c$ . Add 1 to both sides to get  $1 < c$ . The second inequality becomes  $0 < -(-1) - d$  or  $0 < 1 - d$ . Add  $d$  to both sides to get  $d < 1$ . If  $d < 1$  and  $c > 1$ , then  $d < c$ . The correct answer is (D).
19. **B** The question asks for the podcast that had the most ad time per dollar. To get this for each podcast that is an answer choice, divide the amount of ad time by the cost of the ad. To get the amount of ad time, take the percent of ad time multiplied by the length of each podcast. However, since the length of each podcast is the same, the percent can be used rather than the amount itself. The ad times per dollar for  $Q$ ,  $R$ ,  $S$ , and  $T$ , respectively, are  $\frac{30}{\$350} = 0.086$  per dollar,  $\frac{25}{\$200} = 0.125$  per dollar,



$\frac{20}{\$180} = 0.111$  per dollar, and  $\frac{15}{\$150} = 0.1$  per dollar. Podcast *R* has the greatest result. The correct answer is (B).

20. **D** The question asks for the effect that changing the dimensions of the quadrilateral will have on the area of the quadrilateral. This quadrilateral is a trapezoid. The formula for the area of a trapezoid is  $A = \frac{1}{2}(b_1 + b_2)h$ , where  $b_1$  and  $b_2$  represent the two bases, or the two parallel sides on the trapezoid, and  $h$  represents the height, or the perpendicular distance between the two bases. To see what will happen to the area, pick initial values for the three dimensions. Let  $b_1 = 4$ ,  $b_2 = 8$ , and  $h = 3$ . The area is  $A = \frac{1}{2}(4 + 8)(3) = 18$ . The question says that  $PQ$  and  $SR$  are decreased by 75% and  $PT$  is quadrupled. Since  $PQ$  and  $SR$  are parallel, they are  $b_1$  and  $b_2$ . Decrease each of these by 75%. 75% of 4 is  $\frac{75}{100}(4) = 3$ , so decrease by 3 to get  $b_1 = 4 - 3 = 1$ . 75% of 8 is  $\frac{75}{100}(8) = 6$ , so decrease by 6 to get  $b_2 = 8 - 6 = 2$ . Since  $PT$  is perpendicular to the two bases, it is the height. Since the height is quadrupled, the new height is  $4 \times 3 = 12$ . Therefore, the new area is  $A = \frac{1}{2}(1 + 2)(12) = 18$ . The area is unchanged. Therefore, the correct answer is (D).
21. **A** The question asks for the probability that someone who watches news fewer than 3 times per week belongs to Group A in the study. According to the table, 11 people never watch the news, and 27 people watch between 1 and 2 times a week, which makes  $11 + 27 = 38$  people who watch the news fewer than 3 times a week. Of those viewers, there are  $7 + 14 = 21$  people who belong to Group A. Therefore, the probability that a person randomly chosen from among those who watch fewer than 3 times a week is a member of Group A is  $\frac{21}{38}$ . The correct answer is (A).
22. **B** The question asks for the mean or average of the numbers represented in the bar graph. For averages, use the formula  $T = AN$ , in which  $T$  is the total,  $A$  is the average, and  $N$  is the number of things. Use the graph to determine the frequency of each integer. There are four 4s, one 5, one 6, one 7, two 9s, and one 11. The sum is  $4 + 4 + 4 + 4 + 5 + 6 + 7 + 9 + 9 + 11 = 63$ . Count the numbers to get that there are 10 numbers. Therefore, the formula becomes  $63 = A(10)$ , and  $A = 6.3$ . The correct answer is (B).
23. **A** The question asks for the volume of Sample S, in milliliters. Find the point representing Sample S on the graph. The volume of the sample is represented by the vertical axis, so trace the horizontal line from Sample S to the vertical axis at 80. However, this is 80 liters and the question asks for milliliters. The answer should begin with an 8, so eliminate (B) and (D). There are 1,000 milliliters in a liter, so set up the proportion  $\frac{1,000 \text{ mL}}{1 \text{ L}} = \frac{x \text{ mL}}{80 \text{ L}}$ . Cross-multiply to get  $x = 80,000$ . The choices are in scientific notation. Since 80,000 is an 8 followed by four 0s, it is equal to  $8 \times 10^4$ . The correct answer is (A).
24. **A** The question asks for the range of the volume of the three samples of approximately 1.4 moles. Range is defined as the difference between the greatest and least values. The horizontal axis represents the amount. Go just to the left of the line representing 1.5 moles, trace a line straight upward and cross

three points. To determine the volume of the sample represented by each point, trace a line directly to the left of each point and see where it crosses the vertical axis, which represents volume. The highest point is between 80 and 100 liters, closer to 100, so it is between 90 and 100. The lowest is between 60 and 80 liters, closer to 60, so it is between 60 and 70. Therefore, the range must be greater than  $90 - 70 = 20$  and less than  $100 - 60 = 40$ . The only choice in this range is 30. The correct answer is (A).

25. **D** The question asks for the volume of a sample containing 1,200 moles. According to the ideal gas law prediction given,  $V = 50n$ , where  $V$  is the volume and  $n$  is the number of moles. The question asks about a sample with 1,200 moles, so the volume is  $V = 50(1,200) = 60,000$ . The correct answer is (D).
26. **C** The question asks for the polynomial that is divisible by  $3x + 7$ . Rather than work out complex algebra or factor, select a value for  $x$  and determine the values of functions  $f$  and  $g$ . If  $x = 2$ ,  $f(x) = 3(2^3) + 6(2^2) + 11(2) = 24 + 24 + 22 = 70$ ,  $g(x) = 8(2^2) + 15(2) + 7 = 32 + 30 + 7 = 69$ , and  $3x + 7 = 3(2) + 7 = 13$ . In the answers, plug in 70 for  $f(x)$  and 69 for  $g(x)$  to see which answer is divisible by 13. Choice (A) becomes  $j(x) = 2(70) + 69 = 140 + 69 = 209$ , which is not divisible by 13. Eliminate (A). Choice (B) becomes  $k(x) = 70 + 69 = 139$ , which is not divisible by 13. Eliminate (B). Choice (C) becomes  $m(x) = 70 + 2(69) = 70 + 138 = 208$ .  $208 \div 13 = 16$ . Keep (C), but check (D) just in case. Choice (D) becomes  $n(x) = 70 + 3(69) = 70 + 207 = 277$ , which is not divisible by 13. Eliminate (D). The correct answer is (C).
27. **C** The question asks for the trigonometric function in the answer choices that is equal to  $\frac{y}{x}$ . The answer choices include two different functions and two different angles, so use Process of Elimination. The function cosine is equal to  $\frac{\text{opposite}}{\text{hypotenuse}}$ . Since neither  $x$  nor  $y$  is the hypotenuse, eliminate the choices that use cosine, (A) and (B). The only two remaining choices use tangent, which is  $\frac{\text{opposite}}{\text{adjacent}}$ . Therefore,  $\frac{\text{opposite}}{\text{adjacent}} = \frac{y}{x}$ . Since  $P$  is opposite side  $y$ ,  $\frac{y}{x} = \tan P$ . The correct answer is (C).
28. **C** The question asks for the form of the function that contains the minimum value as a constant or coefficient. The given equation of  $f(x)$  is a quadratic equation which, when graphed, will be a parabola. The minimum value of a parabola is the vertex. The vertex form of a quadratic equation is  $y = a(x - h)^2 + k$ , where  $(h, k)$  is the vertex. Eliminate (B), since it is not in the vertex form of the equation. Expand the function to get  $f(x) = x^2 + 7x - x - 7 = x^2 + 6x - 7$ . Eliminate (A), since it is not an equivalent form of this quadratic. Set the quadratic equal to 0 to get  $x^2 + 6x - 7 = 0$ . Complete the square to get  $(x^2 + 6x + 9) - 7 = 0 + 9$ . Factor the equation to get  $(x + 3)^2 - 7 = 9$ . Subtract 9 from both sides to get  $f(x) = (x + 3)^2 - 16$ . The correct answer is (C).
29. **B** The question asks for a true statement about the relationship of  $a$  and  $b$ . Start by combining like terms in the equations. Simplify the top equation to get  $-j = 3a + 3$ . Multiply both sides of the equation by  $-1$  to get  $j = -3a - 3$ . The question says that  $j$  is  $k + 1$ , so substitute  $k + 1$  for  $j$  to get  $k + 1 = -3a - 3$ . Subtract 1 from both sides of the equation to get  $k = -3a - 4$ . Simplify the bottom equation to get  $-k = 3b + 3$ . Multiply both sides of the equation by  $-1$  to get  $k = -3b - 3$ . Therefore,  $-3a - 4 = -3b - 3$ . Add 4 to both sides to get  $-3a = -3b + 1$ , then divide both sides by  $-3$  to get  $a = b - \frac{1}{3}$ . The correct answer is (B).

30. **C** The question asks for the average of  $a$ ,  $b$ , and  $c$ , which are all defined in terms of  $x$ . Rather than deal with all these variables, select a value for  $x$  and determine the values of  $a$ ,  $b$ , and  $c$ . If  $x = 3$ ,  $3x = 9$ ,  $4x = 12$ , and  $5x = 15$ . Use these values to find the values of  $a$ ,  $b$ , and  $c$ . *Average = total ÷ number of things*, so  $a = \frac{9 + 11}{2} = \frac{20}{2} = 10$ ,  $b = \frac{12 + 6}{2} = \frac{18}{2} = 9$ , and  $c = \frac{15 + 7}{2} = \frac{22}{2} = 11$ . Now take the average of  $a$ ,  $b$ , and  $c$ :  $\frac{10 + 9 + 11}{3} = \frac{30}{3} = 10$ . Plug  $x = 3$  into the answers to see which one matches this target number. Choice (A) becomes  $3 + 2 = 5$ , (B) becomes  $3 + 3 = 6$ , (C) becomes  $2(3) + 4 = 10$ , and (D) becomes  $4(3) + 8 = 20$ . The correct answer is (C).
31. **12** The question asks for the number of years it will take for the lake to drop by a certain amount given the current trend. Translate the information into an equation and solve. Let  $y$  represent the number of years. Set up the following equation:  $2.25y = 27$ . Divide both sides by 2.25 to get  $y = 12$ . This is the correct answer.
32. **216** The question asks for the number of cars the factory will produce in 3 days. Given that the car factory produces one car every 20 minutes, it produces 3 cars in 1 hour. Since the car factory operates 24 hours a day, the factory produces  $3 \times 24 = 72$  cars per day. Therefore, in 3 days, the factory produces  $72 \times 3 = 216$  cars. The correct answer is 216.
33. **180** The question asks for the lowest score Vito can get in the 7th game and maintain an average of at least 240. For averages, use the formula  $T = AN$ , in which  $T$  is the total,  $A$  is the average, and  $N$  is the number of things. To average 240 over all 12 games, Vito must score a total of  $T = 240 \times 12 = 2,880$  points. In his first 6 games, Vito scored a total of  $T = 6 \times 200 = 1,200$  points. To find the least number of points he would need to earn on his 7th game, calculate the maximum number of points Vito could get on his last 5 games. If he bowled a perfect game for the last 5 games, he would receive a total of  $5 \times 300 = 1,500$  additional points. Add this to the total of his first 6 games to get  $1,200 + 1,500 = 2,700$  points scored. Therefore, the minimum number of points Vito must score on his 7th game is  $2,880 - 2,700 = 180$  points. The correct answer is 180.
34. **5** The question asks for the value of  $p$ , the  $x$ -coordinate of the point of intersection between the parabola and the line. The actual values for the coordinates of only two points on the parabola are given. However, one of the points is the vertex, so use the vertex form of the equation of a parabola:  $y = a(x - h)^2 + k$ , where  $(h, k)$  is the vertex. Plug the point  $(3, 14)$  in as the vertex to get  $y = a(x - 3)^2 + 14$ . To determine the value of  $a$ , plug in the other point,  $(0, 5)$ , to get  $5 = a(0 - 3)^2 + 14$ . Simplify the parentheses to get  $5 = a(-3)^2 + 14$ , and square  $-3$  to get  $5 = 9a + 14$ . Subtract 14 from both sides to get  $-9 = 9a$ . Divide by 9 to get  $a = -1$ . Therefore, the equation of the parabola is  $y = -(x - 3)^2 + 14$ . To determine the point of intersection, find the equation of the line, which contains the points  $(0, -5)$  and  $(1, -2)$ . The equation of a line can be put into the form  $y = mx + b$ , where  $m$  is the slope and  $b$  is the  $y$ -intercept. The  $y$ -intercept is the point at which  $x = 0$ . Since  $(0, -5)$  is on the line, the  $y$ -intercept is  $-5$ . Now get the slope by using the formula  $m = \frac{y_2 - y_1}{x_2 - x_1}$ . Let  $(x_1, y_1) = (0, -5)$  and  $(x_2, y_2) = (1, -2)$ , so  $m = \frac{-2 - (-5)}{1 - 0} = \frac{-2 + 5}{1} = -2 + 5 = 3$ . Therefore, the equation of the line is  $y = 3x - 5$ . Now set the two equations equal to each other to get  $-(x - 3)^2 + 14 = 3x - 5$ . Use FOIL (First, Outer, Inner, Last) on  $(x - 3)^2$  to get  $-(x^2 - 6x + 9) + 14 = 3x - 5$ . Distribute the negative to get  $-x^2 + 6x - 9 + 14 = 3x - 5$ . Combine like terms to get  $-x^2 + 6x + 5 = 3x - 5$ . To solve a quadratic, get



one side equal to 0. Subtract  $3x$  and add 5 to both sides to get  $-x^2 + 3x + 10 = 0$ . Divide both sides by  $-1$  to get  $x^2 - 3x - 10 = 0$ . Factor to get  $(x - 5)(x + 2) = 0$ . Set both factors equal to 0 to get  $(x - 5) = 0$  and  $(x + 2) = 0$ . Solve the two equations to get  $x = 5$  and  $x = -2$ . Since the point  $(p, q)$  is in Quadrant I, the  $x$ -coordinate is positive, so use  $x = 5$ . Since  $p$  is the  $x$ -coordinate, the correct answer is 5.

35. **350** The question asks for the amount of Harry's down payment, in dollars. In a situation with a down payment and monthly installments, the total amount paid = monthly payments + down payment. In the function given,  $175m$  represents the monthly payments, which means his down payment must have been the 350 dollars. To check this out, try  $m = 0$  to see what Harry will pay before the monthly payments begin. The equation becomes  $T = 175(0) + 350 = 350$ . The correct answer is 350.
36. **20** The question asks for the length of a minor arc on the circle. There is a proportional relationship between the parts and the whole of a circle, so try to determine the "part" of the central angle,  $\angle AOC$ . A tangent line is always perpendicular to the radius of the circle. Therefore,  $\angle ABO = 90^\circ$  and  $\angle CBO = 90^\circ$ . Given that the interior angles of a triangle add up to  $180^\circ$ ,  $\angle AOB = 60^\circ$  and  $\angle BOC = 40^\circ$ . The interior angle  $\angle AOC = 60^\circ + 40^\circ = 100^\circ$ . To determine the circumference of minor arc  $\widehat{DE}$ , set up the following proportion:  $\frac{\text{angle}}{360^\circ} = \frac{\text{minor arc}}{\text{circumference}}$ . In this case,  $\frac{100^\circ}{360^\circ} = \frac{x}{72}$ . Cross-multiply to get  $360x = 7,200$ . Divide both sides by 360 to get  $x = 20$ . This is the correct answer.
37. **0.86** The question asks for the value of  $k$ , the variable in parentheses on a population model. The population is decreasing, so use the decay formula, which states that  $\text{final amount} = \text{original amount} \times (1 - \text{rate})^n$ . The rate is 14% per year, which is written as a decimal in the decay formula. Therefore,  $k = 1 - 0.14 = 0.86$ . This is the correct answer.
38. **376** The question asks for the predicted population of the town after five years. Use the decay formula,  $\text{final amount} = \text{original amount} \times (1 - \text{rate})^n$ , and the value for  $k$  found in the last question to find the population in 5 years. Plug 800 in for the original amount, 0.86 in for  $k$ , and 5 in for  $x$  to get  $P = 800(0.86)^5 \approx 376$ . Without the formula, it is still possible to get this question right. Just use a calculator to find the population after 1 year, which would be  $800 - 0.14(800) = 688$ . Then do it again for the population after 2 years:  $688 - 0.14(688) = 591.68$ . Continue the process three more times to find the population after five years, which will round to 376. This is the correct answer.