

## REVISING/EDITING PART A

1. The question asks how the paragraph should be revised.

**C: Correct.** Changing the word “studies” from the present tense to the past tense “studied” is necessary to match the past tense established in the paragraph (“spent,” “recited”). Additionally, the comma after the word “emotions” needs to be removed because the words “emotions and motivations” are part of a group (series) of two elements, and when there are only two elements in a series, a comma is not used.

**A: Incorrect.** The revisions in Option A introduce new errors. The word “spent” is correct in the past tense because that is the tense used throughout the rest of the paragraph. Additionally, adding a comma after the word “play” would be incorrect because it would separate the prepositional phrase “at the community theater” from the rest of the sentence.

**B: Incorrect.** The revisions in Option B introduce new errors. The word “did” is correct as written in the past tense because the past tense is used throughout the paragraph. There is no comma needed after the word “projection” because “so” is not functioning as a conjunction but rather as part of the conjunction phrase “so that,” which does not take a comma.

**D: Incorrect.** The revisions in Option D introduce new errors. The word “recited” is correct as written in the past tense because the past tense is used throughout the paragraph. Also, removing the comma after “times” is incorrect because the comma is needed in order to separate the modifying phrase “making slight adjustments and improvements to his performance each time” from the main clause.

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2. The question asks for the revision that corrects the error in sentence structure in the paragraph.

**E: Correct.** The first sentence of the paragraph is a run-on because both clauses—“The land on Earth has not always been separated into the seven continents” and “at one time a massive supercontinent, known as Pangaea, covered one-third of Earth’s surface”—are independent clauses. Independent clauses are complete sentences, and two complete sentences should not be combined with just a comma. The revision in Option E is correct because it separates the two sentences by placing a period where it is needed after “continents” and by capitalizing the word “At.”

**F: Incorrect.** While adding a semicolon after “surface” can be considered a correct way to separate the independent clauses “at one time a massive supercontinent, known as Pangaea, covered one-third of Earth’s surface” and “Additionally, the supercontinent was surrounded by ocean waters called Panthalassa, much of which were in Earth’s Southern Hemisphere,” this change does not address the sentence structure error in the paragraph (the run-on sentence). The use of a period separating the independent clauses (complete sentences) is correct as is.

**G: Incorrect.** Adding a period after “Panthalassa” would separate the dependent clause “much of which were in Earth’s Southern Hemisphere” from its subject: “ocean waters called Panthalassa.” The dependent clause cannot stand on its own because it shares elements with the main clause. A dependent clause is not a complete sentence and must be joined with an independent clause. The clause beginning with “much of which” is an adjective for “ocean waters.” Changing the comma to a period creates a new error (a sentence fragment) and does not address the existing sentence structure error at the beginning of the paragraph (the run-on sentence).

**H:** Incorrect. Removing the period after “crust” would create a run-on sentence because the period is needed to separate two complete sentences—“Geologists believe that the supercontinent split apart over millions of years because of the movement of the tectonic plates that form Earth’s crust” and “In fact, experts predict that over the next 250 million years the movement of the plates will cause the seven continents to merge into a supercontinent again.” A comma after “crust” would combine these sentences into a run-on, creating a new error in the sentence without fixing the existing sentence structure error (the run-on sentence) at the beginning of the paragraph.

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3. The question asks for the identification of the sentence that has an error in its construction and should be revised.

**B: Correct.** Sentence 2 contains a structural error. The current placement of the phrase “where the Nets played for thirty-five seasons” suggests the phrase is modifying the term “financial troubles,” which is illogical. The phrase “where the Nets played for thirty-five seasons” should immediately follow the location, “New Jersey.” A revised version of the sentence might read: “After the team had financial troubles, the owner of the Nets decided to take the team to New Jersey, where the Nets played for thirty-five seasons.”

**A:** Incorrect. There are no errors in the structure of sentence 1. The modifying phrase “who played in the Long Island area at the time” correctly modifies the noun “New York Nets.”

**C:** Incorrect. There are no errors in the structure of sentence 3. The phrase “including two appearances in the NBA finals” is a nonrestrictive clause that provides further detail about the team’s “sixteen playoff appearances.” The phrase is set off by a comma because it is not essential to understanding the meaning of the sentence.

**D:** Incorrect. There are no errors in the structure of sentence 4. The phrase “after a change in ownership” is a nonrestrictive clause that provides further detail about the team in 2012. The phrase is set off by commas because it is not essential to understanding the meaning of the sentence.

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4. The question asks for the best way to combine the sentences to clarify the relationship between the ideas.

**G: Correct.** The sentence in Option G is the best way to combine the sentences because it accurately reflects the relationship between the ideas by using the nonrestrictive phrase “which allow scientists to collect data about the planet and its moons” to describe the purpose of the flyby missions. The idea that the missions “have been happening since 1973” follows the nonrestrictive phrase.

**E:** Incorrect. Even though the two ideas from the original sentences are incorporated into the sentence in Option E, the use of the conjunction “while” in the first part of the sentence suggests that there is a simultaneous but unrelated relationship between the two ideas, which is incorrect.

**F:** Incorrect. The sentence in Option F incorporates the ideas from both sentences, but the conjunction “although” suggests that scientists were allowed to collect data even though there were flyby missions, which is an inaccurate way to express the relationship between the ideas.

**H:** Incorrect. The sentence in Option H uses the conjunction “but” to connect the ideas in the two original sentences. This suggests an adverse relationship between ideas, which is an inaccurate way to connect the ideas expressed in the original sentences.

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## REVISING/EDITING PART B

### Cracking the Code

5. The question asks for the best way to combine sentences 3 through 5 to clarify the relationship between ideas.
- B: Correct.** The sentence in Option B accurately shows the relationship between the ideas of the sentences. Before people can construct programs that will perform detailed and complex tasks, they have to learn a coding language.
- A: Incorrect.** While this sentence shows a relationship between the ideas, it does not clarify the relationship accurately. Learning the language of code does not depend on people's previous ability to construct programs that will perform detailed and complex tasks.
- C: Incorrect.** This sentence does not accurately express the relationship between ideas, because the sentence implies that some people who code do not have to learn the language. The passage clearly states that "computer code is part of every electronic interaction" (sentence 1) and that "programmers use it to instruct computers to perform different tasks" (sentence 2).
- D: Incorrect.** The conditional (If . . . then) construction of the sentence in Option D does not convey the intended relationship of the ideas in the sentences. The "then" statement ("they can construct programs that will perform detailed as well as complex tasks") does not follow the condition of the "if" statement ("people who code have to learn this language").
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6. The question asks for the sentence that should follow sentence 5 to best state the main claim in the passage.
- E: Correct.** This sentence logically follows sentence 5 and incorporates the two main points in the passage: that coding has become important in many diverse occupational fields (sentence 10) and that there are several ways that people can learn how to code (sentence 14).
- F: Incorrect.** While this sentence incorporates a point made in the passage about how coding can benefit many occupational fields (sentence 10), this idea alone does not address the entire argument in the passage.
- G: Incorrect.** While this sentence incorporates ideas about opportunities to learn coding skills in school (fourth paragraph), the larger claim presented in the passage is not about opportunities schools should offer in order to help students learn to code. The passage primarily focuses on the opportunities offered to people who take on the challenge of learning to code.
- H: Incorrect.** Although the passage discusses the opportunities that are available to some students to learn coding skills in school (sentences 15–16), this point is a supporting detail of the passage, not the main claim of the passage.
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7. The question asks for the best revision of sentence 10 to provide a transition to the third paragraph.
- B: Correct.** This sentence provides the best revision of the transition sentence. The second paragraph ends with "the possibilities for applying them are infinite" (sentence 9), which supports the idea that people in "many occupational fields" (sentence 10) can benefit from having coding skills. The third paragraph illustrates this idea by providing specific examples of occupations that benefit from coding (stock market traders and doctors).

**A:** Incorrect. Some readers may choose this option because the second paragraph does discuss the complexities of coding; however, it does not discuss the difficulties of learning coding. The third paragraph demonstrates some of the complex ways coding is used in specific fields but does not illustrate how difficult learning coding may be.

**C:** Incorrect. While it is suggested in the passage that employers in the health-care industry recognize the importance of coding skills (sentence 12), the third paragraph focuses on examples of coding within different occupations, not specific employers' analyses of what makes coding skills important.

**D:** Incorrect. Some readers may choose this option because the second paragraph provides a brief definition of coding—"A coding language uses letters, numbers, and symbols that are arranged in a way that makes sense to a computer" (sentence 6)—which shows how this element of programming works, but the second paragraph does not specifically discuss what makes the field of computer programming unique. The third paragraph discusses how coding can be used in a variety of occupational fields (sentence 10).

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8. The question asks which sentence would best follow sentence 13 and support the ideas in the third paragraph.

**H: Correct.** This sentence provides specific evidence of the job market favoring potential employees who have coding ability. It supports what is stated in sentence 13, that "jobs that require coding skills are typically higher paying."

**E:** Incorrect. While this sentence provides an example of a high salary, which is mentioned in the paragraph (sentence 13), the part about "Experienced programmers, software engineers, and system administrators at large companies" focuses on specific occupations that may use coding, as opposed to the range of diverse occupations discussed in the third paragraph.

**F:** Incorrect. While sentence 12 does mention coding skills in the medical field as an example, the information provided in this answer supports only that idea and not the other ideas expressed in the third paragraph.

**G:** Incorrect. This sentence generally discusses employers looking for "experience in a specific industry as well as knowledge of basic coding," but the third paragraph discusses the possibilities of using coding skills in a variety of occupations, not companies looking for specific industry experience.

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9. The question asks which concluding sentence would best follow sentence 20 and support the argument presented in the passage.

**B: Correct.** The sentence successfully summarizes the main argument of the passage, which is that coding is involved in all electronic interaction (sentence 1) and is a useful skill to master, especially in many occupational fields (sentence 10).

**A:** Incorrect. While the passage does state that "jobs that require coding skills are typically higher paying" (sentence 13), it does not say or imply that coding skills are needed for most high-paying jobs.

**C:** Incorrect. In the fourth paragraph, the passage does promote students taking advantage of opportunities to learn coding; however, this information is a supporting detail and would not serve as a strong conclusion to the argument presented in the passage.

**D:** Incorrect. Some readers may choose this sentence because the fourth paragraph discusses how "some students may become interested in learning how to create programs, such as games and apps" (sentence 18), but this detail is only one part of the overall argument in the passage.

## READING COMPREHENSION

### A Miracle Mile

10. The question asks how the words “feat,” “humanly impossible,” and “impenetrable barrier” in paragraph 1 affect the tone of the paragraph.

**F: Correct.** No one had ever been able to run a mile in less than four minutes, and the words “feat,” “impossible,” and “impenetrable” imply that the goal seemed unattainable. These words also reinforce the comparison of running a four-minute mile to “scaling Mount Everest” (paragraph 1).

**E: Incorrect.** Although paragraph 1 states that “several elite runners aimed to break that supposedly impenetrable barrier,” the words “feat,” “humanly impossible,” and “impenetrable barrier” suggest that the goal was unattainable even for the most skilled runners.

**G: Incorrect.** The words “feat,” “humanly impossible,” and “impenetrable barrier” describe how challenging and almost impossible running a four-minute mile seemed, and while other elite runners “aimed to break that supposedly impenetrable barrier” (paragraph 1), the paragraph focuses on Roger Bannister, not the competition among elite runners seeking to break the record.

**H: Incorrect.** Bannister’s training program is described in paragraphs 3 and 4, and the words “feat,” “impossible,” and “impenetrable” are used in paragraph 1 to describe the magnitude of Bannister’s goal to run a four-minute mile. Though his training program was intense, these words relate to the intensity of the goal itself, not to the intensity of his training.

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11. The question asks how interval training affected Bannister’s performance.

**C: Correct.** As paragraph 3 states, the goal of Bannister’s training program was to “develop endurance and speed,” which are synonyms of the words “stamina” and “pace.”

**A: Incorrect.** The moderation of his pace was achieved through the use of “rabbits,” described in paragraph 6, more than through his method of interval training.

**B: Incorrect.** Bannister worked individually during the interval training period and then paced himself with a two-person team of “rabbits,” which were introduced in paragraph 5 and explained in paragraph 6. It was the use of “rabbits” during the race that helped him conserve some of his effort, not the interval training.

**D: Incorrect.** During the interval-training process, Bannister “let his body recover for two minutes” (paragraph 3).

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12. The question asks which sentence best supports the idea that Bannister needed an alternative to “logical planning” in order to accomplish his goal.

**H: Correct.** The sentence from paragraph 4 explains that Bannister reached a point where he could not improve his time despite the strict training plan he had created. Taking a break from his training to spend time mountain climbing “permitted his muscles to recuperate and left him feeling refreshed” (paragraph 4).

**E: Incorrect.** The outcome of the 1952 Olympics, referenced in the sentence from paragraph 2, is what prompted Bannister to seek a new goal: “Determined to redeem himself, Bannister . . . focused on the ultimate prize—breaking the four-minute-mile barrier” (paragraph 2).

**F: Incorrect.** The sentence from paragraph 3 does not show an alternative to Bannister’s training plan to “develop endurance and speed” (paragraph 3) and his focus on using logical planning in order to accomplish his goal.

**G:** Incorrect. The sentence from paragraph 4 focuses on details of his training plan, explaining the “intensive interval training” (paragraph 3) that Bannister used to build his endurance and speed, not an alternative form of preparation.

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**13.** The question asks which sentence indicates that Bannister nearly made a mistake that would have cost him the world record.

**C: Correct.** If Bannister had begun running faster than the “steady but grueling pace” (paragraph 7) set by his “rabbit,” he would likely not have had enough energy to finish the race. As paragraph 6 notes, “the runner conserves about 15 percent of his or her effort” by allowing the “rabbit” to set the pace. Bypassing the “rabbit” at that point in the race could have cost Bannister energy and, in turn, the record.

**A:** Incorrect. The sentence from paragraph 4 describes a challenge Bannister faced during his training period, when he used “intensive interval training to develop endurance and speed” (paragraph 3). Bannister ran laps on a “quarter-mile track” (paragraph 3) and was able to control his pace at this time—unlike during the actual race to break the record.

**B:** Incorrect. The sentence from paragraph 6 describes the start of the race and Brasher’s role as “first rabbit” for Bannister. Bannister was behind Brasher, following their plan for breaking the record.

**D:** Incorrect. The sentence from paragraph 7 describes how Bannister leaped ahead of Chataway, his second “rabbit,” at the appropriate time in the effort to break the record. Chataway had “surged forward, leading Bannister at this same punishing rate for another lap and a half” (paragraph 7) before Bannister moved past him.

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**14.** The question asks what idea is conveyed by the phrase “a new mindset had taken root” in paragraph 8.

**E: Correct.** After Bannister ran the mile in under four minutes, it became clear to other runners that this goal was within the realm of human ability, and “soon after Bannister’s achievement, four other athletes matched his performance” (paragraph 8).

**F:** Incorrect. While the passage states that runners broke the four-minute-mile barrier after Bannister initially broke it (“Soon after Bannister’s achievement, four other athletes matched his performance” [paragraph 8]), running a four-minute mile is still impressive and a challenge for elite runners.

**G:** Incorrect. Although runners most likely knew that the training needed in order to break the four-minute-mile barrier was difficult and intensive, the phrase “a new mindset had taken root” focuses on their belief in the possibility of breaking the four-minute-mile barrier, which had been viewed as a “supposedly impenetrable barrier” (paragraph 1), not the idea that the training was difficult.

**H:** Incorrect. Even though “four other athletes matched his performance” and “the record continued to fall” (paragraph 8), the phrase “a new mindset had taken root” does not refer to the idea that there was an increase in the number of runners entering races just to try breaking the four-minute-mile barrier.

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**15.** The question asks how Bannister’s loss in the 1952 Olympics influenced his decision to pursue breaking the four-minute-mile barrier.

**C: Correct.** Bannister sought to redeem himself after “he finished in a dismal fourth place” at the Olympics (paragraph 2). He thought that his performance “was a disappointment for him and his country, Great Britain,” and he responded by setting a goal to successfully conquer the four-minute mile, which was considered the “ultimate prize” (paragraph 2).

**A:** Incorrect. While Bannister recognized the weaknesses that led to his poor performance in the Olympics and worked “to develop endurance and speed” (paragraph 3), the loss made him “determined to redeem himself” (paragraph 2). The desire for redemption influenced Bannister to focus specifically on running a mile in under four minutes, rather than on winning other races or training for other distances.

**B:** Incorrect. Although Bannister developed an “intensive interval training” plan to improve his “endurance and speed” (paragraph 3), he applied a different approach only after his progress toward a four-minute mile reached a “plateau” (paragraph 4) in 1954. It was his desire to “shave off at least one more second in order to reach his target” (paragraph 4) that prompted him to take a break from interval training and go mountain climbing for three days.

**D:** Incorrect. Bannister’s loss at the 1952 Olympics motivated him to change his training focus to reaching the “ultimate prize” (paragraph 2) of breaking the four-minute-mile barrier, which no other runner had accomplished. His loss at the Olympics did not present him with a specific opportunity to reach this goal.

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**16.** The question asks how the author’s use of chronological structure contributes to the development of ideas in the passage.

**H: Correct.** The chronological structure of the passage follows the progression of Bannister’s training from his loss at the 1952 Olympics to the race where he ran the first sub-four-minute mile on May 6, 1954 (paragraph 5).

**E:** Incorrect. While paragraph 4 mentions the “plateau” Bannister dealt with and the break that “permitted his muscles to recuperate,” the chronological structure of the passage focuses mainly on the progression of Bannister’s process over time.

**F:** Incorrect. Even though the passage suggests that Bannister’s ability to break the four-minute-mile barrier improved and that he felt “prepared to attempt to break the world record” (paragraph 4), the chronological structure of the passage primarily serves to show how Bannister’s progress over time led to his success.

**G:** Incorrect. The chronological structure of the passage begins with an acknowledgement that Bannister was inspired to break the four-minute-mile barrier by his loss at the 1952 Olympics (paragraph 1); however, the overall organization of the passage highlights his dedicated efforts over time to break the four-minute-mile barrier.

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**17.** The question asks how the sentences from paragraph 7 contribute to the development of ideas in the passage.

**A: Correct.** The sentences from paragraph 7 show that toward the end of the race, Bannister knew that the goal of breaking the four-minute-mile barrier was within his grasp and that he had the focus necessary to achieve it. The sentence following Bannister’s quotation states that he did indeed meet his goal, crossing “the finish line in 3 minutes 59.4 seconds” (paragraph 7).

**B:** Incorrect. The feelings Bannister expressed in the sentences from paragraph 7 did not erase those related to his loss at the 1952 Olympics, which were what drove him to the achievement he was about to make.

**C:** Incorrect. While the quotation states Bannister felt “unity,” the sentences from paragraph 7 capture Bannister’s focus on his chance to break the barrier and what he was feeling at that moment.

**D:** Incorrect. The sentences from paragraph 7 express a feeling of realization that Bannister was on the verge of reaching a goal. The sentences show that in the seconds before crossing the finish line, Bannister was fully focused on the end goal and was not thinking about his training or his running technique.

## Ode to Fireworks

**18.** The question asks what the fireworks in the poem represent about the speaker.

**F: Correct.** The speaker misses the experience of watching the fireworks display with family and friends but understands that time has progressed and that life is now different. The lines “This was a treat we waited / all year for” (lines 6–7) highlight the significance of the memory of waiting for and watching the fireworks. In the speaker’s present, the lines “I remember the feel of the pickup truck bumping / across the ridged field” (lines 40–41) emphasize the key details from the experience that stand out in the speaker’s mind when something in the current environment reminds the speaker of the past.

**E:** Incorrect. While the speaker misses elements of the past, the speaker is also positive about the present, with comparisons to a “constant celebration” (line 33) and descriptions of “the music of people” (line 36). The speaker does not indicate a desire to return to a simpler way of living.

**G:** Incorrect. While the speaker does share details about the present and the tone is generally positive, the fireworks do not suggest that the speaker has high expectations for how everyday life should be. The third stanza (lines 28–42) describes some of the speaker’s imaginings about the aspects of going about one’s daily life, but the speaker does not form expectations from these fantasies.

**H:** Incorrect. While the speaker does mention discussing cloud shapes with a family member in lines 19–20, the fireworks serve as a more general reminder of the speaker’s past life. Viewing the bright lights of the city makes the speaker recall memories of the speaker’s past and the feelings of anticipation before the fireworks show.

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**19.** The question asks what the comparison in lines 8–9 of the poem is used to convey.

**A: Correct.** In lines 8–9 the speaker compares the deep thumping noises at the start of a fireworks show to the muffled thumping sound made when beating a rug to clean it. The imagery of “low, dull *thwumps*” (line 8) (onomatopoeia) describes a sound that is not clear or powerful. To the speaker, these low, distant explosions are the signal that the fireworks display is starting and that the loud, cracking sound of fireworks will be heard soon (“Then we counted the seconds between the lightning / and thunder” [lines 10–11]).

**B:** Incorrect. The comparison in lines 8–9 deals with the low sound of the first fireworks shooting off rather than the streaks of light they emit. To the speaker, the low “*thwumps*” (onomatopoeia) are the signal that fireworks are about to explode overhead, much like the way a streak of lightning during a storm indicates that a crash of thunder will follow in a few seconds.

**C:** Incorrect. The *thwump* (onomatopoeia) sounds are the start of the fireworks show, not thunder. As a comparison, the speaker says the initial “*thwumps*” of the fireworks signal anticipation for the full explosion that will come, much like the way the speaker would watch for lightning and count the seconds before an impending thunderclap (lines 10–11).

**D:** Incorrect. The muffled *thwump* (onomatopoeia) sounds occur before the dazzling explosion of lights and before sparks start to fall from the sky. The comparison focuses on the sounds of the experience, not the sight of the experience.

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20. The question asks what the word choice in lines 22–23 of the poem conveys about the speaker.

**H: Correct.** The word “jewels” creates a picture of watching shining and sparkling explosions in the night sky and suggests that this experience holds sentimental and emotional value for the speaker. The speaker cherishes the memory of the experience.

**E: Incorrect.** The word “jewels” is used figuratively to indicate the sentimental value that the experience of watching the fireworks holds for the speaker. There is no indication in the poem that the speaker values material possessions.

**F: Incorrect.** The use of the word “jewels” highlights the importance of the memory in the speaker’s mind. The imagery in the words “written upon” expresses the way the bright streaks of light curve and fly across the night sky, not that the speaker views the fireworks display as “magical.”

**G: Incorrect.** The speaker describes the elements of the fireworks display that stand out most clearly. The view of the bright, colorful fireworks streaking across the sky is distinct, but it is not unique to the country setting.

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21. The question asks what the use of italics on the word “*night*” in line 24 is most likely intended to emphasize.

**B: Correct.** The italics are intended to place emphasis on one key aspect of nighttime—total darkness. The speaker is making a point that night in the country was truly dark, unlike the night the speaker currently experiences in a city, where light emitted from buildings and vehicles prevents complete darkness.

**A: Incorrect.** The purpose of italicizing the word “*night*” is not to convey mystery. While the speaker refers to not knowing the exact location where the firework viewing took place (“in the stubble of what had been / somebody’s cornfield” [lines 25–26]), the emphasis on “*night*” is meant to highlight the darkness and contrast the bright light from the fireworks soaring across the sky.

**C: Incorrect.** The tone in the second stanza is positive, showing admiration for the beauty visible in true darkness rather than fear: “But it was another thing to see / the sky at night written upon / with those jewels” (lines 21–23).

**D: Incorrect.** The speaker is talking about the general experience of watching fireworks on several occasions, not focusing on the events of a specific night. The use of italics on the word “*night*” emphasizes the speaker’s memory of the persistent darkness.

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22. The question asks what the purpose is of the repeated words “rising and falling” in lines 26 and 37.

**F: Correct.** The first mention of these words occurs during a recollection of the speaker’s past, and the second takes place during a description of the speaker’s present. The speaker looks to the connections between the country setting (“All around us, crickets / stridulated in the stubble of what had been / somebody’s cornfield, their song rising and falling” [lines 24–26]) and the city setting (“And the music around me is the music of people, / their voices rising and falling in a hundred languages” [lines 36–37]) as a source of comfort.

**E: Incorrect.** These lines do not provide insight into the speaker’s interactions or feelings of solitude. The speaker mentions the emptiness of the country and the crowds in the city, but these repeated words are meant to draw a connection between the locations rather than show differences between them.

**G:** Incorrect. Even though the lines call out specific sounds, the purpose of the repetition of the words in the two parts of the poem is to show how the speaker connects the two settings. The “rising and falling” of the sounds are one detail the speaker highlights.

**H:** Incorrect. The repetition of the words “rising and falling” is used to compare the different locations in the speaker’s life, not to compare fireworks to the sounds of crickets in the country or to the sounds of people moving and talking in the city.

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**23.** The question asks what impact the phrase “Everything is a constant celebration” (line 33) has in the poem.

**C: Correct.** From the speaker’s perspective, the constant light (“awash in light” [line 32]) contributes to the speaker’s feeling that, in the city, celebratory fireworks are ever-present. In comparison, fireworks lit up the country sky only for celebratory occasions or annual events (“In autumn my mother drove us to the edge of the field / where the fair was set up year after year” [lines 1–2]).

**A:** Incorrect. The speaker describes a sense of happiness and contentment in both the city and the country and does not indicate that one setting is more pleasurable than the other.

**B:** Incorrect. The word “celebration” has a positive association and does not imply that the speaker is overwhelmed in the city. Throughout the third stanza (lines 28–42), the speaker conveys appreciation for the elements of the city that make it different from the country (“And the music around me is the music of people, / their voices rising and falling in a hundred languages” [lines 36–37]).

**D:** Incorrect. While the speaker observes many things going on in the city at a given moment, the “constant celebration” in line 33 is intended to convey a comparison to the speaker’s previous experience in the country rather than emphasize the hectic pace of life in the city. The continual light and sounds in the city remind the speaker of lights and sounds experienced only on occasion in the country.

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**24.** The question asks how the memory in lines 41–42 affects the speaker.

**H: Correct.** The memory of watching the fireworks on the way home creates a sense of comfort that stays with the speaker (“escorted us home”). The speaker looks forward to moments when the youthful experience (“childhood bursts”) of being excited by something like a fireworks display can be a source of happiness.

**E:** Incorrect. The speaker does not express concern in these lines about the impossibility of returning to childhood or the past. For the speaker, the past and the memories associated with it are a source of comfort and a way to remember simpler times (“I remember the feel of the pickup truck bumping / across the ridged field” [lines 40–41]).

**F:** Incorrect. While the speaker recalls anticipation before the start of a fireworks display, there is no hint that the speaker is impatient. Particularly in lines 41–42, the speaker is reminded of the expectation of hearing and seeing fireworks and the sense of simple contentment felt in the experience (“I find myself / craning my neck upward at odd moments” [lines 29–30]).

**G:** Incorrect. The speaker is reflecting on past experiences and pointing out the elements of the city that remind the speaker of these past experiences. The speaker acknowledges the differences between the country and city settings but does not convey regret for leaving the rural area (“This is where we live now, / and it is how we live now, awash in light / of every hue” [lines 31–33]).

## Excerpt from “A Research Riddle Resolved”

25. The question asks how the sentence from paragraph 2 contributes to the overall structure of the excerpt.

**D: Correct.** The sentence from paragraph 2 serves as a transition from the introductory idea of “the animal still captures our imagination anew and irresistibly attracts the attention of science writers everywhere” (paragraph 1) to the central idea that the platypus has great scientific significance.

**A: Incorrect.** While the sentence from paragraph 2 does mention the platypus’s unique appearance, the remainder of the excerpt does not focus on the physiology of the platypus but instead focuses on the significance of scientists’ platypus research and what it can “tell us about people” (paragraph 4).

**B: Incorrect.** Paragraph 1 discusses the platypus as the “duck-billed” animal that “still captures our imagination anew and irresistibly attracts the attention of science writers everywhere,” but highlighting the idea that the platypus’s unusual appearance has attracted scientist’s attention is not how the sentence from paragraph 2 fits into the overall structure of the excerpt.

**C: Incorrect.** Paragraph 1 states that “the May 2008 *Nature* report detailing the DNA insides of the duck-billed platypus invited colorful tales from just about every mainstream media outlet,” but it does not discuss current ideas in the field. Paragraph 2 focuses on the “scientific surprise” of the platypus.

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26. The question asks what the phrase “evolutionary DNA tapestry” in paragraph 3 conveys about the platypus.

**E: Correct.** In the excerpt, the term “tapestry” conveys the sense of a rich history; the “platypus heritage” described in paragraph 3 is woven together with “threads” from mammals, birds, and reptiles in its genetic background.

**F: Incorrect.** While paragraph 3 does mention mammals and reptiles, it does not discuss when the platypus developed traits from those classifications. Rather, it refers in general to “hundreds of millions of years ago, when reptiles and mammals branched off the evolutionary tree.”

**G: Incorrect.** The excerpt never claims that, compared with other animals, the platypus is the best resource for studying the evolution of animal genomes. The excerpt indicates that the platypus’s status as a “scientific oddity” provides “a window into a time in history when mammals became unique—gaining the ability to bear live young, produce milk for them, and grow a warm, furry coat” (paragraph 6).

**H: Incorrect.** The excerpt states that the platypus genome is a “scientific oddity” (paragraph 6) that is useful to researchers, but the reason it is useful is because of DNA evidence that shows “a window into a time in history when mammals became unique” (paragraph 6), not because its genes have never been altered.

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27. The question asks how paragraph 8 fits into the overall structure of the excerpt.

**A: Correct.** Paragraph 8 acts as a transition from the discussion of how “our own, modern-day genomes are still a big mystery” (paragraph 7) to the discussion of how scientists use comparative genomics to compare “human genes with those from animals” (paragraph 8).

**B: Incorrect.** Paragraph 8 introduces the practice of comparing “human genes with those from animals,” but it does not clarify or provide details about how scientists solved the problem of studying complex human genomes using comparative genomics.

**C: Incorrect.** Rather than contrasting the effort of the study of the human genome with the effort of a separate study of animal genomes, paragraph 8 discusses a study that is comparing human and animal genomes in order “to see what has been kept the same and what has evolved to be different.”

**D:** Incorrect. While the mention in paragraph 8 of “3 billion DNA ‘letters’ ” certainly highlights the enormous challenge of fully analyzing the human genome, the point of paragraph 8 is to transition the excerpt to the topic of how comparative genomics can shed light on the human genome.

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**28.** The question asks for the best summary of the section “Same and Different” (paragraphs 9–11).

**G: Correct.** This sentence describes the most important idea of the section: the discovery of genes that humans have in common with other species that can yield information about human disease. As stated in paragraph 10, “The goal of this research is to find regions of similarity and difference in order to better understand the structure and function of human genes.”

**E:** Incorrect. The fact that the platypus is the latest species whose genome is being compared with the human genome is just a detail of this section. The focus of the section is on the fact that comparing genomes can teach us about human disease. Paragraph 9 reveals this when it states that “scientists compare the genome sequences of several species: human, mouse, and a wide variety of other organisms from single-celled fungi to elephants and, now, the platypus.”

**F:** Incorrect. While comparative genomics is a way to examine many different species, this detail is not the main point of this section. Paragraph 10 notes that the “goal of this research” focuses on the fact that comparing genomes can teach us about human disease.

**H:** Incorrect. While this section does mention the use of computers in comparative genomics, this information is a detail about how the research is carried out; the computers are a tool in discovering whether “this information may translate into ways to understand, treat, and prevent human diseases” (paragraph 11).

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**29.** The question asks how the details in paragraphs 12–14 about the platypus’s different abilities convey a central idea of the excerpt.

**D: Correct.** In describing the platypus’s different abilities, paragraph 12 states that “the findings traced the evolutionary path from birds and reptiles to mammals.” Paragraphs 12–14 elaborate on the findings to support a central idea of the excerpt, which is that the platypus is rare in having bird, reptile, and mammal DNA.

**A:** Incorrect. The fact that “platypuses have genes that make the milk protein casein: ”(paragraph 13) just like humans do is an important supporting detail, but it is not a central idea of the excerpt.

**B:** Incorrect. While paragraph 14 explains that the platypus produces venom “like its ancestral snake and lizard cousins,” which suggests the platypus has the ability to defend itself, this information is a supporting detail and not a central idea of the excerpt.

**C:** Incorrect. Paragraphs 12–14 do state that the platypus has lost some of its “chicken-ness” (paragraph 12) while gaining traits in common with mammals and reptiles, but this information is a supporting detail and not a central idea of the excerpt.

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**30.** The question asks how the author elaborates on the idea that creating a full analysis of platypus DNA was an important scientific endeavor.

**E: Correct.** The importance of the research into platypus DNA is explained in the excerpt through descriptions of what this research can teach us about human genetics and disease. The question is raised directly in paragraph 4 and begins to be answered in paragraph 6 (“The platypus genome results . . . provide

researchers a window into a time in history when mammals became unique—gaining the ability to bear live young, produce milk for them, and grow a warm, furry coat”). This importance is also addressed in the “Same and Different” section (paragraphs 9–11) and in paragraphs 15 and 16.

**F:** Incorrect. The comparison of the platypus with its bird and reptile relatives in paragraphs 12–15 is important to locating the platypus on its evolutionary family tree and in showing the connection between DNA and functionality. This comparison does not, however, explain the excerpt’s main reason for asserting that the analysis of platypus DNA was an important scientific endeavor.

**G:** Incorrect. The excerpt begins with a description of the platypus’s appeal because of its “cuteness and weirdness” (paragraph 2) and goes on to explain the genetic reason for the animal’s “patchwork of genes” (paragraph 2). However, this information does not address the reason why the analysis of platypus DNA is considered an important scientific endeavor.

**H:** Incorrect. Understanding how genetics can be aligned to physiological function is important to understanding why such research can reveal information about human health and disease, which is the real importance of this scientific endeavor, rather than the discussion of physiological function itself.

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**31.** The question asks how researching the genomes of other animals can inform scientists’ understanding of human health and disease.

**B: Correct.** Paragraph 11 explains that finding ways that animal genomes are similar to the human genome helps researchers “locate signals that control how genes work.”

**A:** Incorrect. Although tracking how other animals evolved helps researchers better understand our “rich and diverse planet” (paragraph 18) through understanding genes, the potential benefits to human health will not necessarily preserve or sustain nature.

**C:** Incorrect. While paragraph 11 does point out that all living things share an ancestor, the idea that they, therefore, share genetic traits is only implied. This idea does not contribute to the main focus of the research.

**D:** Incorrect. The statement that “understanding how other animals are similar to one another helps researchers find new ways to understand the human genome” is too general to provide support for the main focus of the genetic research described in the excerpt. To learn more about human health and disease, scientists need to understand the similarities between the genetic material of animal species, not the similarities between the animals themselves.

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**32.** The question asks which sentence from the excerpt best supports the idea that the same DNA material results in the same traits even in different classes of animals.

**H: Correct.** The sentence from paragraph 14 describes two different classes of animals—reptiles and monotremes—that have the ability to create venom, a trait that resulted from the same DNA material “mixed and matched together.”

**E:** Incorrect. The sentence from paragraph 2 describes the combination of DNA material from several classes of animals that makes up platypus DNA; however, the sentence does not address whether any of those different animals share traits or whether they share some of the same DNA.

**F:** Incorrect. The sentence from paragraph 3 emphasizes the relationship between two different classes of animals—reptiles and mammals—by discussing when they branched off the same evolutionary tree. However, the sentence does not address whether those classes of animals share any traits.

**G:** Incorrect. The sentence from paragraph 4 questions whether platypus DNA can teach us something about humans and human disease, which implies that there must be something in common between these two animals. However, it does not state that these two animals actually share traits or DNA.

### Excerpt from “How We Made the First Flight”

**33.** The question asks how paragraph 1 introduces the idea that the Wright brothers knew that their flight attempt was risky.

**A: Correct.** Paragraph 1 describes the Wright brothers sending “the signal” to notify the lifesaving crew to stand by as they attempted flight; the need for lifesaving experts to be available in case of an accident introduces the idea that the attempted flight might crash.

**B:** Incorrect. By themselves, the specifics on the speed of the wind do not emphasize the danger of the flight. And while the brothers admitted that the strong wind posed certain risks, they also noted that the windy conditions might make landing safer (“estimated that the added dangers in flight would be partly compensated for by the slower speed in landing” [paragraph 1]).

**C:** Incorrect. The slower landing was expected as a result of the windy conditions, but it was not part of a plan to increase the safety of the flight.

**D:** Incorrect. While the Wright brothers’ initial decision to wait to see if the wind would die down does suggest they were concerned about the safety of the flight, the explanation of their decision to proceed with the flight shows that they expected one benefit from the poor weather: “the slower speed in landing” (paragraph 1).

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**34.** The question asks how the sentence from paragraph 4 contributes to the development of ideas in the excerpt.

**G: Correct.** The sentence from paragraph 4 indicates that the Wright brothers had agreed to take turns attempting to achieve the first flight, which suggests their eagerness to each be the first to successfully fly the machine.

**E:** Incorrect. The sentence from paragraph 4 does not refer to the challenge of the winter conditions during the flight attempt.

**F:** Incorrect. While the sentence from paragraph 4 specifically references a previous flight several days earlier, it does not state how many attempts came before Wilbur’s attempt on December 14th.

**H:** Incorrect. Orville’s trial came about merely as a result of turn-taking, which would suggest that there was no greater likelihood of success or reason to be more confident than there had been for previous attempts.

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**35.** The question asks what idea is most clearly conveyed by the words “only,” “nevertheless,” and “finally” in the sentence from paragraph 5.

**D: Correct.** The words in the sentence from paragraph 5 suggest that, though the first flight may not have lasted very long or taken the pilot very far, the Wright brothers accomplished something no one had been able to do before: successfully pilot an airplane in flight.

**A:** Incorrect. Although the duration of the flight was short, and a successful flight had taken a long time to achieve, the words in the sentence from paragraph 5 are used to emphasize the remarkable nature of the flight, not the length of time it had taken the Wright brothers to finally be successful.

**B:** Incorrect. While the hope for longer flights is easy to imagine, the words in the sentence from paragraph 5 do not relate directly to this sentiment; instead, they describe the groundbreaking success of the Wright brothers' flight.

**C:** Incorrect. While the capabilities of the aircraft were demonstrated during the flight, the words in the sentence from paragraph 5 do not apply solely to the machine but also to the efforts of the people who designed it, built it, and actually made it fly.

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**36.** The question asks how the sentence from paragraph 5 helps convey Orville Wright's perspective about the first flight.

**F: Correct.** In the sentence from paragraph 5, Orville uses the wind velocity and the machine speed to highlight the distance that the plane covered while in the air and to determine the distance that it would have flown on a day with calm winds, which emphasizes the magnitude of the accomplishment.

**E:** Incorrect. Since there is no indication in the sentence from paragraph 5 that Orville took these measurements while he was flying the plane, the idea that he maintained a scientific approach when attempting flight is an assumption rather than fact. It also does not account for the equivalent distance of the flight in calm air, which emphasizes the importance of the accomplishment.

**G:** Incorrect. Since Orville does not suggest in the sentence from paragraph 5 how far the plane traveled under the actual conditions of high winds, the comparison is incomplete. Additionally, this statement does not address the reason that he would make such a comparison, which allowed him to describe the flight in more impressive terms (540 feet versus 120 feet).

**H:** Incorrect. Unlike the wind velocity calculations made in preparation for the flight, which along with pilot experience might help in determining the success of future flights, the calculations that Orville provides in the sentence from paragraph 5 interpret the results of the first flight and communicate its success.

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**37.** The question asks how the details in paragraph 5 about the uneven nature of the flight convey a central idea of the excerpt.

**C: Correct.** The details in paragraph 5 describe the difficulties that the weather conditions and mechanical issues presented and how Orville's flight was successful despite the issues. The ability of the Wright brothers to overcome difficult circumstances and complete the first flight is a central idea of the excerpt.

**A:** Incorrect. Paragraph 5 explains that the rudder was unbalanced and the effect that this issue had on the flight, but the rudder was only part of the reason for the short flight. The length of the flight is not a central idea of the excerpt.

**B:** Incorrect. Although paragraph 5 does explain that the equipment contributed to the difficulty of controlling the plane's flight, the lack of control over the flight is not a central idea of the excerpt, which is the fact that the Wright brothers achieved a successful flight in spite of the challenges involved.

**D:** Incorrect. While paragraph 5 does emphasize the difficulty caused by the wind, it does not describe a "gradual change" in the wind, only that it was "irregular."

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**38.** The question asks which sentence from the excerpt supports the idea that the Wright brothers had to adapt their flight plans to accommodate weather conditions.

**F: Correct.** The sentence from paragraph 1 reveals that the Wright brothers adapted by making a risk calculation, based on the wind speed, before the flight. The high speed of the wind could cause difficulties in flight while simultaneously allowing for a slower, more controlled landing.

**E: Incorrect.** Although the sentence from paragraph 1 mentions the rainy weather and frozen puddles, it does not specifically explain how these weather conditions forced the brothers to adapt their plans for the flight.

**G: Incorrect.** The sentence from paragraph 4 does mention wind, but it describes what Wilbur was doing during the attempted flight, not the factors he considered before the flight in order to adapt the plan.

**H: Incorrect.** Although the sentence mentions the “irregularity of the air” during the flight, the sentence from paragraph 5 does not describe how the brothers adapted their flight plans based on the weather.

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**39.** The question asks how the use of chronological structure contributes to the development of ideas in the excerpt.

**A: Correct.** Through the chronological structure, Orville addresses all stages of the flight in a way that builds from flight concerns and preparations for takeoff to his experiences during the flight and while accomplishing the successful landing.

**B: Incorrect.** While obstacles are presented within the excerpt, the chronological structure emphasizes the events that ended in the successful achievement of flight on that day rather than how the Wright brothers overcame obstacles.

**C: Incorrect.** The chronological structure of the excerpt does not show that the Wright brothers applied lessons learned from their previous attempts at flight; instead, the structure describes Orville’s December 17th attempt.

**D: Incorrect.** While Orville’s narrative certainly shows a strong need to analyze wind speed, this idea is not conveyed through the chronological structure of the excerpt. Additionally, the description of the first flight on December 17th indicates that it did not take place in ideal conditions (“We realized the difficulties of flying in so high a wind” [paragraph 1] and “The course of the flight up and down was exceedingly erratic, partly due to the irregularity of the air” [paragraph 5]).

### Excerpt from *In Search of the Unknown*

**40.** The question asks how paragraph 2 helps develop the plot.

**G: Correct.** The phrase “uncompromising refusals” in paragraph 2 indicates the confidence that the narrator initially has in his belief that the animals described in the letters are not of value to the society. This confidence is badly shaken as the plot unfolds, as when Professor Farrago states that “I am daring to believe that it is the great auk itself” (paragraph 23). The narrator’s transition from an attitude of dismissive doubt to one of budding hopefulness is a major part of the plot of the excerpt (“But I was not shocked; on the contrary, I was conscious that the same strange hope that Professor Farrago cherished was beginning, in spite of me, to stir my pulses, too” [paragraph 34]).

**E: Incorrect.** As paragraph 1 indicates, writing such letters is one of the main parts of the narrator’s job (“and I was always busy, part of the day, in dictating answers to correspondents”), and he shows no indication that this work is unnecessary. The letters are to inform people whether the zoo will accept their animals.

**F:** Incorrect. Paragraph 2 indicates that the narrator offers his letters to the professor merely for official approval. At the start of the excerpt, the narrator is confident in his reply and does not anticipate that his response will differ from that of the professor, so he has no need to “predict what the professor would say.”

**H:** Incorrect. The narrator does not resent the professor’s review of the letters; instead, the phrase “of course” in paragraph 2 shows that he expects to submit the letters to the professor as part of his job.

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**41.** The question asks what the phrase “a faint trace of apology” in paragraph 3 conveys about the professor.

**D: Correct.** The professor is both amused and annoyed by the narrator’s dismissal of the possibility that great auks still exist, and the professor knows that the narrator is likely to react negatively to being sent on what the narrator considers a “fool’s errand” (paragraph 25).

**A:** Incorrect. The fact that the narrator had intended to leave the office for the day is not the source of the professor’s faintly apologetic manner, which is instead caused by the professor’s understanding that their conversation about the letter and the expedition is likely to cause an argument (“with a whimsical smile that suggested amusement, impatience, annoyance” [paragraph 3]).

**B:** Incorrect. The paragraphs that follow the sentence from paragraph 3 show the professor sharing his opinions without pause, even when his opinion of the narrator is unflattering (“Like swimming squirrels, you navigate with the help of Heaven and a stiff breeze, but you never land where you hope to—do you?” [paragraph 17]).

**C:** Incorrect. The professor knows that the narrator will push back regarding the letter, but the professor is not uncomfortable challenging the narrator. Professor Farrago seems perfectly at ease and comfortable as he begins the discussion with the narrator.

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**42.** The question asks how the exchange between the professor and the narrator in paragraphs 8–11 contributes to the development of the excerpt.

**E: Correct.** Paragraphs 8–10 describe the narrator communicating his firm belief that the writer of the letter about the auks is either “a liar or a fool” (paragraph 9). However, paragraph 11 reveals that the professor disagrees with the narrator’s assessment of Halyard, the man who wrote the letter (“He isn’t—in mine,” said the professor, placidly”). This difference between the opinions of the narrator and the professor is the central conflict of the excerpt.

**F:** Incorrect. Paragraphs 8–11 reveal a disagreement between the narrator and the professor (“to my surprise, he appeared to waver” [paragraph 8]) and do not describe collaboration or show them working together.

**G:** Incorrect. Although the narrator initially distrusts the contents of the letter and shows “contemptuous tolerance for the writer” (paragraph 8), the excerpt portrays the professor as experienced and intelligent, not as one who is easily deceived. In fact, the professor ultimately convinces the narrator that the letter may in fact contain accurate information about the great auks.

**H:** Incorrect. While the narrator does begin to consider the professor’s perspective at the end of the excerpt, paragraphs 8–11 primarily serve to establish the disagreement between the narrator and the professor about the writer of the letter.

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43. The question asks how the professor's observations in paragraphs 15–17 create tension in the excerpt.

**A: Correct.** The professor criticizes “‘you young fellows’ ” (paragraph 15), suggesting that the ideas of young scientists like the narrator are unsupported (“‘like swimming squirrels,’ ” [paragraph 17]) and inaccurate (“‘but you never land where you hope to—do you?’ ” [paragraph 17]; “‘you embark on a theory for destinations that don’t exist’ ” [paragraph 15]). The narrator then becomes “red in the face” (paragraph 18), indicating that the narrator is upset by the professor's criticism, and asks the professor about the great auk in an attempt to defend himself.

**B: Incorrect.** While the narrator does experience a negative reaction to the professor's words, the professor is being genuine, not sarcastic. In fact, the sarcasm comes from the narrator in paragraph 14 (“‘It is generally accepted,’ I replied, sarcastically, ‘that the great auk has been extinct for years. Therefore I may be pardoned for doubting that our correspondent possesses a pair of them alive’ ”), not from the professor.

**C: Incorrect.** The professor's observations cause the narrator to blush with embarrassment (“‘rather red in the face’ ” [paragraph 18]), but the narrator understands the point that the professor is making about the narrator's acceptance of the idea that great auks do not exist. The narrator recognizes that the professor is criticizing his youthful ideas, not his opinion.

**D: Incorrect.** The professor shows amusement with the narrator's perspective. The narrator is embarrassed and upset by the professor's words, but the narrator does not display frustration with the professor's lack of interest in a commonly held view of the existence of a certain species of bird.

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44. The question asks how the interaction between the narrator and the professor in paragraphs 26–28 contributes to the development of the theme.

**H: Correct.** Paragraph 26 describes the professor and the narrator making practical plans for the expedition (“‘we made out a list of articles necessary for me and itemized the expenses I might incur’ ”), indicating the narrator's acceptance of his assignment while also revealing that he does not anticipate a “successful termination to the expedition.” Paragraph 28 further describes the personal objections of the narrator, who believes that adding extra men to the expedition is pointless (“‘a useless expense’ ”) since he does not expect to find any great auks to bring back.

**E: Incorrect.** Paragraphs 26–28 do not show the narrator arguing against making the expedition. He instead argues that it is unnecessary for the professor to pay to send extra men on the expedition. The narrator points out that he can ask for assistance if he does, in fact, find a great auk (“‘None,’ I replied, bluntly; ‘it’s a useless expense, unless there is something to bring back. If there is I’ll wire you, you may be sure’ ” [paragraph 28]).

**F: Incorrect.** When the professor criticizes the narrator's blind acceptance of the theory about the existence of the auks, the narrator is frustrated and embarrassed. This frustration does not stem from his inability to make decisions for the zoological society.

**G: Incorrect.** The professor states that “‘what I want you to do is to get those birds here safely’ ” (paragraph 27), which indicates that his main priority is the birds' safety rather than acquiring specimens regardless of the consequences (i.e., at any cost).

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45. The question asks how the author develops the contrast between the narrator's point of view and the professor's point of view.

**B: Correct.** The primary conflict of the excerpt revolves around the narrator's disagreement with the professor about whether the letter about the great auks could be true. As the two men converse, their contrasting attitudes toward the letter become clear: the narrator dismisses the possibility of great auks out of hand (" 'of course the man is mistaken' " [paragraph 5]; " 'here is a man . . . who wants you to send somebody to take charge of a bird that doesn't exist!' " [paragraph 12]), while the professor calmly admits that although " 'nine hundred and ninety-nine men in a thousand would throw that letter aside and condemn the writer' " (paragraph 9), he himself believes that the writer could be telling the truth (" 'How do you know,' asked Professor Farrago, 'that the bird in question does not exist?' " [paragraph 13]).

**A: Incorrect.** The excerpt does not describe the narrator's thoughts about how age and experience influence the professor's reasoning in enough detail to fully contrast them against the thoughts about the narrator that the professor expresses in paragraphs 15–17. The narrator's idea that the professor might be "on the verge of dotage" (paragraph 24) is meant in a humorous way.

**C: Incorrect.** The professor explains why he disagrees with the narrator (paragraphs 19–21), but he does not make persistent efforts to convince the narrator or change his own mind about the letter. Instead he states that the narrator will go on an expedition to retrieve " 'whatever it is that our correspondent has' " (paragraph 23), thereby requiring the narrator to go collect the great auks whether he believes in them or not.

**D: Incorrect.** The point of the dialogue is not to explain the subordinate-supervisor relationship between the narrator and the professor but rather to contrast what each character believes about the contents of the letter.

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**46.** The question asks how paragraph 34 helps develop the plot of the excerpt.

**E: Correct.** Despite his initial disbelief, the narrator admits in paragraph 34 that he is starting to feel the "same strange hope" the professor feels, which is to find the great auks (paragraph 33).

**F: Incorrect.** While the narrator does make an effort in paragraphs 11–22 to understand the professor's thinking, paragraph 34 reveals that the narrator has been affected by the professor's "strange hope" for the auks and is beginning to share this hope "in spite of" himself.

**G: Incorrect.** The narrator describes a feeling of hope in paragraph 34 that would not be present if he had simply been overruled by the professor and did not share any of the professor's belief in the possibility that the auks exist.

**H: Incorrect.** The narrator does not express a sense of urgency in paragraph 34 to begin the expedition. Instead, he expresses hope that the great auks might really exist.

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**47.** The question asks which sentence best demonstrates the professional relationship between the narrator and the professor.

**C: Correct.** The sentence from paragraph 25 reveals that while the narrator disagrees with the professor ("this fool's errand was none of my conceiving"), he obeys because he works for the professor ("there was nothing to do but to obey").

**A: Incorrect.** Although the professor's asking for the narrator's personal opinion about the letter shows that they have respect for each other's views, the sentence from paragraph 8 does not convey the relationship between a subordinate employee (the narrator) and a superior (the professor).

**B: Incorrect.** The sentence from paragraph 24 presents the narrator's immediate internal reaction to the professor's words. The sentence emphasizes that the professor's belief in the great auk's existence is so

outrageous that the narrator initially thinks the professor is starting to lose touch with reality. This is a momentary reaction to the professor's words, not a demonstration of the professional relationship between the two.

**D:** Incorrect. The professor's good-humored offer of assistance in the sentence from paragraph 29 does not best demonstrate the underlying employer-employee relationship between the professor and the narrator. The narrator has to go on the expedition because the professor, his boss, told him to.

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**48.** The question asks which sentence from the excerpt best explains why the professor is eager to send the narrator on an expedition.

**H: Correct.** The sentence from paragraph 33 reveals the professor's excitement to get "the rarest of living creatures," the great auk. The narrator states in paragraph 14 that "it is generally accepted . . . that the great auk has been extinct for years," which would make a living auk incredibly rare and explains the professor's eagerness for the narrator to go on the expedition.

**E:** Incorrect. The sentence from paragraph 23 tells what animal the professor believes the narrator will find on the expedition (the great auk), but it does not explain why the professor is so excited to find this particular animal.

**F:** Incorrect. Although the sentence from paragraph 27 expresses the professor's interest in having the narrator bring the birds back safely, it does not show the underlying reason why the safety of the birds is so crucial, which is that the great auk is extremely rare.

**G:** Incorrect. The sentence from paragraph 33 explains why the professor believes the letter writer—he feels a gut instinct—but it does not explain why he is so eager to find out whether his instinct is correct.

### Is It Time for Term Limits?

**49.** The question asks for the best summary of the discussion of congressional term policy outlined in paragraph 2.

**D: Correct.** The summary of paragraph 2 accurately presents the idea that members of Congress, in contrast to the president, do not have term limits and calls out the idea that recent surveys show that some Americans think this should change.

**A:** Incorrect. The summary focuses on term lengths that members of the House of Representatives and of the Senate serve rather than on term limits.

**B:** Incorrect. The summary incorrectly places an emphasis on the idea that some Americans are troubled by the discrepancy between the president having term limits and members of Congress not having term limits. However, it is not the discrepancy that troubles people; it is the fact that members of Congress can be reelected an unlimited number of times.

**C:** Incorrect. While the summary mentions increased support for term limits, it neglects to mention the contrast between the president having term limits and members of Congress not having term limits.

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**50.** The question asks which sentence from the passage supports the idea that congressional term limits would "benefit our government" (paragraph 2).

**G: Correct.** Joe Lieberman's comments in paragraph 3 strongly suggest that Congress is currently too partisan and rigid and that term limits would help correct this, thus benefiting our government.

**E:** Incorrect. The sentence from paragraph 2 states the fact that members of Congress can run for reelection an unlimited number of times; it does not suggest that this is unhealthy.

**F:** Incorrect. While the sentence from paragraph 2 shows that many Americans believe that term limits would be beneficial, it offers no actual evidence to support this idea.

**H:** Incorrect. The sentence from paragraph 7 offers a statistic regarding how frequently members of Congress are replaced. However, no suggestion is made as to whether the situation is good or bad or whether term limits would be healthy.

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**51.** The question asks how the quotations in paragraph 3 convey a central idea of the passage.

**A: Correct.** The quotations in paragraph 3 from former Senator Joe Lieberman and the writers Olson and Rogowski focus on how term limits might help members of Congress work together more cooperatively, even across party lines, “ ‘and improve the quality of representation.’ ”

**B:** Incorrect. The fact that politicians and law experts have opinions about term limits is not a central idea of the passage, though those opinions can be used to support arguments for or against term limits.

**C:** Incorrect. While paragraph 3 begins with the idea that “American citizens are not the only supporters of term limits for Congress,” the quotations do not suggest that citizens tend to agree with expert opinions on term limits; the expert opinions in paragraph 3 are simply offered as further support for term limits.

**D:** Incorrect. The implication that term limits could “ ‘encourage compromise’ ” by affecting how members of Congress campaign and vote is a supporting detail and not a central idea of the passage.

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**52.** The question asks which statement best describes how the sentence in paragraph 5 fits into the overall structure of the passage.

**H: Correct.** The author uses the sentence in paragraph 5 to demonstrate a transition from the benefits of term limits to the idea that newcomers could have a severe effect on policies.

**E:** Incorrect. While the sentence in paragraph 5 does imply that term limits are controversial, it merely begins to suggest one of the reasons for the controversy without offering actual evidence.

**F:** Incorrect. The sentence in paragraph 5 does not offer ideas complete enough to constitute a summary of the consequences of term limits.

**G:** Incorrect. Before paragraph 5, the passage explores possible effects of term limits on the ability of Congress to function.

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**53.** The question asks how, according to paragraph 5, serving more terms improves politicians' effectiveness.

**C: Correct.** Paragraph 5 makes it clear that “experienced politicians have a deep knowledge of congressional processes, and in addition, politicians who have served together for extended periods have a chance to develop trusting relationships, even across party lines.” Therefore, serving more terms helps experienced politicians gain expertise.

**A:** Incorrect. Paragraph 5 does not say that serving more terms motivates politicians to learn congressional processes, only that politicians restricted by term limits are not motivated to gain expertise.

**B:** Incorrect. While paragraph 5 states that serving more terms helps a politician “develop trusting relationships, even across party lines,” it does not explain how serving more terms improves politicians’ effectiveness.

**D:** Incorrect. While paragraph 4 states that “term limit supporters point out that career politicians may base key decisions on their own personal long-term goals,” paragraph 5 does not mention this idea or state that creating new policies while fostering their own careers would improve their effectiveness.

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**54.** The question asks why setting term limits for members of Congress potentially increases the influence of special-interest groups.

**E: Correct.** The passage explains in paragraphs 5 and 6 that representatives who lack experience might end up relying on lobbyists’ expertise. Paragraph 6 uses information from the National Conference of State Legislators Study, which indicated that state lawmakers were “depending on special-interest groups for their expertise on issues.” This example on a state level is used to show that “term limits may increase the influence of lobbyists” (paragraph 6).

**F:** Incorrect. While lobbyists can work with representatives, it is not required. The passage implies that some of the deep knowledge many politicians gain is from spending time in office and from developing “trusting relationships” (paragraph 5) with colleagues.

**G:** Incorrect. The passage does discuss the drawbacks of forcing experienced representatives from their seats, but it does not provide support for the idea that new representatives will focus on the agendas of special-interest groups.

**H:** Incorrect. The passage states that experienced representatives “have a deep knowledge of congressional processes, and in addition, politicians who have served together for extended periods have a chance to develop trusting relationships, even across party lines” (paragraph 5). The author states that the concern is only for new representatives who might seek help or guidance from lobbyists.

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**55.** The question asks how the author of the passage mainly develops the idea that congressional term limits might have negative effects.

**B: Correct.** In paragraphs 5 and 6, the author discusses the fact that members of Congress who lack experience might fail to develop good political relationships, fail to learn processes, and rely too much on lobbyists. For example, paragraph 6 uses information from the National Conference of State Legislators Study, which reveals that “term limits may increase the influence of lobbyists.”

**A:** Incorrect. While the author states that “politicians who have served together for extended periods have a chance to develop trusting relationships, even across party lines” (paragraph 5), it is never stated in the passage how long it takes politicians to build connections with one another.

**C:** Incorrect. The author does introduce the idea that new politicians are “‘more likely to rely on outsiders, including lobbyists, to replace that expertise’ ” (paragraph 5), but the passage does not present the ways that lobbyists seek to influence the decisions of new representatives.

**D:** Incorrect. Paragraph 7 does give statistics on turnover rates: “Thomas E. Mann, Senior Fellow in governance studies at the Brookings Institution, notes that every decade, new members replace at least half the members of the House and the Senate, due to retirement or elections.” However, this information does not support the idea that term limits might have negative effects.

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**56.** The question asks with which statement the author of the passage would most likely agree.

**G: Correct.** Given that the author presents strong arguments and supporting evidence both for and against setting term limits, the author would most likely agree that both sides have compelling reasons supporting their positions. The passage ends with the author's suggestions that "perhaps one day people will have a chance to vote on the issue" (paragraph 8). The author never argues for a particular side of the argument.

**E: Incorrect.** While the author presents a good description of why expertise is important for lawmakers, the author does not give this argument greater weight than other arguments in the passage.

**F: Incorrect.** While paragraph 2 does state that "modern surveys conducted by multiple firms consistently show that American citizens of a variety of backgrounds and political leanings approve of the idea of setting term limits for members of Congress," the author never suggests that term limits are the most pressing issue facing voters today and never compares this issue to any other issues.

**H: Incorrect.** While the author discusses in paragraphs 5 and 6 the dangers of special-interest groups having excessive influence on lawmakers, the author never suggests that special-interest groups may influence the issue of term limits itself.

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**57.** The question asks how the tables at the end of the passage contribute to the development of ideas in paragraph 7.

**A: Correct.** The tables show that members of Congress have a greater chance of getting reelected today than they did in 1950, supporting the idea from paragraph 7 that the average length of time in office has increased: "Still, the average length of time in office has mushroomed. For example, the 65th Congress (1917–1919) had an average service time of 5.3 years for members of the House of Representatives and 5.7 years for Senate members. The 114th Congress (2015–2017) had an average of 8.8 years for members of the House and 9.7 years for senators."

**B: Incorrect.** While the tables suggest that the reelection rate for members of Congress has shifted upward since 1950 as explained in paragraph 7, the tables do not provide details about the number of times congresspeople have been reelected throughout their careers.

**C: Incorrect.** While the tables indicate that the reelection rates between the House and the Senate differ somewhat, the distinction between reelection rates of the two parts of Congress is unrelated to the main idea of paragraph 7 that "the average length of time in office has mushroomed."

**D: Incorrect.** The number of seats in the Senate is a minor detail that does not support an idea from paragraph 7, where the author focuses on current turnover "due to retirement or elections" and the fact that "the average length of time in office has mushroomed."

- 58. (5)** Simple interest ( $y$ ) is calculated by multiplying the initial deposit ( $p$ ), the interest rate ( $r$ ), and time ( $t$ ).

$$prt = y$$

$$(2,500)(0.04)t = 500$$

$$100t = 500$$

$$t = 5$$

- 59. (-9)**  $6 - 9 \div |-3| + (-2)^3 \times 1\frac{1}{2}$  Calculate the exponent and convert the mixed number to an improper fraction

$$6 - 9 \div |-3| + (-8) \times \frac{3}{2}$$
 Next, calculate the absolute value

$$6 - 9 \div 3 + (-8) \times \frac{3}{2}$$
 Perform the indicated multiplication and division

$$6 - 3 + (-12)$$
 Perform the addition and subtraction

$$3 + (-12) = -9$$

- 60. (4)**  $7x + 3 - 2(2x + 1) = 13$  Apply the distributive property; multiply the  $-2$  by  $2x$  and  $1$

$$7x + 3 - 4x - 2 = 13$$
 Combine like terms

$$3x + 1 = 13$$
 Apply the additive inverse property; subtract 1 from both sides of the equation

$$3x = 12$$
 Apply the multiplicative inverse property; divide both sides of the equation by 3

$$x = 4$$

- 61. (55)** Since vertical angles are congruent, the right triangle in the figure has acute angles with measures of  $35^\circ$  and  $x^\circ$ . The interior angles of a triangle sum to  $180^\circ$ , so set up an equation to solve for  $x$ :

$$90 + 35 + x = 180$$

$$125 + x = 180$$

$$x = 55$$

- 62. (19.2)** First, find the sum of the original 8 numbers. Let  $x$  equal the sum of those numbers and use the mean formula to solve for  $x$ :

$$\frac{x}{8} = 17$$

$$x = 136$$

Next, subtract the 3 discarded numbers from the sum:

$$136 - 9 - 11 - 20 = 96$$

Finally, calculate the mean of the remaining 5 numbers by dividing the new sum, 96, by 5:

$$\frac{96}{5} = 19.2$$

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**63. (C)**  $3^4 + 7^4 = 81 + 2,401 = 2,482$

- 
- 64. (E)** To solve, add the three given fractions:

$$1\frac{3}{4} + 2\frac{2}{3} + \frac{7}{8}$$

The common denominator is 24:

$$= 1\frac{18}{24} + 2\frac{16}{24} + \frac{21}{24}$$

$$= 4\frac{10}{24} + \frac{21}{24}$$

$$= 5\frac{7}{24}$$

- 
- 65. (C)** Calculate 215% of 220:

$$2.15(220) = 473$$

- 66. (F)** First, use a proportion to find out how many minutes it will take the sign to complete 8 revolutions. Let  $x$  equal the total number of minutes:

$$\frac{x}{8} = \frac{90}{1}$$

$$x = 720$$

Next, convert 720 minutes into hours and minutes:

$$\frac{720}{60} = 12 \text{ hours}$$

Finally, 12 hours after 2:30 p.m. is 2:30 a.m.

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- 67. (D)** First, find where Y is located on the number line. Point X is the midpoint of  $\overline{WY}$ . Since there are 2 units between W and X, there must also be 2 units between X and Y. Thus, Y is located at 4 on the number line.

Point Y is the midpoint of  $\overline{WZ}$ . Use the same reasoning as above. Since there are 4 units between W and Y, there must be 4 units between Y and Z. So, Z is located at 8 on the number line.

- 
- 68. (F)**  $\frac{81}{10} = \frac{9}{n}$  Cross multiply

$81n = 9(10)$  Apply the multiplicative inverse property; divide both sides of the equation by 81;

$$n = \frac{90}{81} = 1\frac{9}{81} = 1\frac{1}{9} \quad \text{then simplify the fraction}$$

**69. (A)** The expression  $3n + 3$  is equal to  $3(n + 1)$ , and it is given that this is an even number. The expression  $(n + 1)$  must also represent an even number, because 3 is an odd number and the product of an odd number and an even number is an even number. If  $(n + 1)$  is an even number, then  $n$  must be an odd number. Choose an odd number to substitute for  $n$  in the answer options to find which expression represents an even number:

Let  $n = 3$ .

Option A:

$$5n + 1 = 5(3) + 1 = 16$$

Option B:

$$4n + 5 = 4(3) + 5 = 17$$

Option C:

$$2n + 3 = 2(3) + 3 = 9$$

Option D:

$$n + 2 = 3 + 2 = 5$$

Since 16 is the only even number, the correct answer is option A.

**70. (F)** First, find the pairs of positive integers that multiply to 65:  $1 \times 65$  and  $5 \times 13$ . The sums of the pairs are 66 and 18. 18 is the option that is provided in the answer choices.

**71. (D)** The two greatest integers less than  $-3.25$  are  $-4$  and  $-5$ . Since  $-4$  is even, the answer is  $-5$ .

**72. (F)** First, calculate how many pages Mikah has left to read:

$$420 - 160 = 260$$

Then, divide 260 by 4 to calculate the mean number of pages he must read per hour to finish the assignment according to his plan:

$$\frac{260}{4} = 65$$

**73. (C)** First, convert  $\frac{29}{7}$  to a mixed number:  $\frac{29}{7} = 4\frac{1}{7}$ . The two consecutive integers on either side of  $4\frac{1}{7}$  are 4 and 5.

**74. (H)** First, calculate the actual total of the percentages shown, which is 101.9%. So, one of the percentages needs to be lower to make the total equal 99.9%. Only one option, H, proposes a decrease in the percentage. To check that this is the correct answer, add the percentages again with "Poor" as 4.7% instead of 6.7%. H is the correct answer.

**75. (D)** First, convert their heights from feet and inches to inches, by multiplying the number of feet by 12 and adding the inches:

$$\text{Roberto: } 6 \text{ feet} + 4.5 \text{ inches}$$

$$6(12 \text{ inches}) + 4.5 \text{ inches} =$$

$$72 \text{ inches} + 4.5 \text{ inches} = 76.5 \text{ inches}$$

$$\text{Joseph: } 5 \text{ feet} + 9 \text{ inches}$$

$$5(12 \text{ inches}) + 9 \text{ inches} =$$

$$60 \text{ inches} + 9 \text{ inches} = 69 \text{ inches}$$

Then, subtract Joseph's height from Robert's height:  $76.5 - 69 = 7.5$

- 76. (F)** Write the ratios in fraction form and solve for  $x$ :

$$\frac{x}{35} = \frac{20}{28} \quad \text{cross multiply}$$

$$28x = 700 \quad \text{Apply the multiplicative inverse property; divide both sides by 28}$$

$$x = \frac{700}{28} = 25$$

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**77. (C)**  $\frac{3^2 + (-8)^2 + 2^2}{(3 - 8 + 2)^2} = \frac{9 + 64 + 4}{(-3)^2} = \frac{77}{9}$

- 
- 78. (F)** First, calculate the amount of money Anya's parents contributed:  
 $2,000 - 1,200 - 240 = 560$ .  
Then, find what percentage of \$2,000 is \$560:

$$\frac{560}{2,000} = 0.28 = 28\%$$

- 
- 79. (C)** Substitute each answer option for  $p$  to see which value will work:

Option A:

If  $p = 2$ , then  $\frac{1}{2}n = 2$ , so  $n = 4$ . This cannot be the answer, because  $n$  cannot equal 4.

Option B:

If  $p = 3$ , then  $6q = 3$ , so  $q = 0.5$ . This cannot be the answer, because  $q$  cannot equal 0.5.

Option C:

If  $p = 6$ , then  $2m = 6$ , so  $m = 3$ ;  $6q = 6$ , so  $q = 1$ ; and  $\frac{1}{2}n = 6$ , so  $n = 12$ . This is the correct answer.

Option D:

If  $p = 12$ , then  $\frac{1}{2}n = 12$ , so  $n = 24$ . This cannot be the answer, because  $n$  cannot equal 24.

- 80. (G)** Three of the five numbers listed (0.001, 0.0001, and 0.00001) are less than 0.005. So, the probability of a person selecting a number less than 0.005 is  $\frac{3}{5}$ .

- 
- 81. (A)** If Lemont answered 6 out of 40 questions incorrectly, then he answered 34 questions correctly.

$$\frac{34}{40} = 0.85 = 85\%$$

- 
- 82. (G)** First, find the measures of the three angles inside the triangle. The lower left angle is supplementary to the one marked  $135^\circ$ , so the measure of that angle is  $180^\circ - 135^\circ = 45^\circ$ . The angle on top is a vertical angle with the one marked  $x^\circ$ , so the measure of that angle is also  $x^\circ$ . The angle on the lower right is a vertical angle with the one marked  $100^\circ$ , so the measure of that angle is also  $100^\circ$ . Since the measures of the three interior angles of a triangle sum to  $180^\circ$ , set up an equation and solve for  $x$ :

$$45 + x + 100 = 180$$

$$145 + x = 180$$

$$x = 35$$

- 83. (A)** Let  $x = 2$ , and substitute that value for  $x$  in each inequality to determine which one is correct:

Option A:

$$\frac{1}{3} > \frac{1}{4}. \text{ This is true.}$$

Option B:

$$\frac{1}{3} < \frac{1}{4}. \text{ This is false.}$$

Option C:

$$\frac{1}{3} - \frac{1}{4} > 1, \text{ or } \frac{1}{12} > 1. \text{ This is false.}$$

Option D:

$$\frac{1}{3} - \frac{1}{4} > \frac{1}{2}, \text{ or } \frac{1}{12} > \frac{1}{2}. \text{ This is false.}$$

Option A is the only true inequality.

- 84. (G)** First, use the information about the red balls to calculate the total number of balls in the basket:

$$\frac{1}{3} = \frac{12}{x} \quad \text{cross multiply}$$

$$x = 36$$

There are a total of 36 balls in the basket. The probability of selecting a green ball is 1 in 4. Use that information to calculate how many green balls are in the basket:

$$\frac{g}{36} = \frac{1}{4} \quad \text{cross multiply}$$

$$4g = 36 \quad \text{apply the multiplicative inverse property; divide both sides of the equation by 4}$$

$$g = 9$$

There are 9 green balls in the basket.

- 85. (B)** First, calculate Lars's average speed in kilometers per hour:

$$\frac{48}{2} = 24$$

Then, convert kilometers to miles:

$$\frac{m}{24} = \frac{1}{1.6} \quad \text{cross multiply}$$

$$m(1.6) = 24(1) \quad \text{apply the multiplicative inverse property; divide both sides of the equation by 1.6}$$

$$m = \frac{24}{1.6} = 15$$

- 86. (H)** Since integer  $x$  is evenly divisible by 3, substitute 3 for  $x$  in the answer options to determine which expression is also divisible by 3:

$$\text{Let } n = 3.$$

Option A:

$$2x + 1 = 2(3) + 1 = 7$$

Option B:

$$3x - 5 = 3(3) - 5 = 4$$

Option C:

$$4x - 1 = 4(3) - 1 = 11$$

Option D:

$$4x + 6 = 4(3) + 6 = 18$$

Option D is the only value that is divisible by 3.

- 87. (B)** There are currently 20 chips in the jar ( $6 + 10 + 4$ ). Of those chips, 14 are **not** red. So the probability of choosing a chip that is **not** red is  $\frac{14}{20} = \frac{7}{10}$ .

**88. (G)** There are 6 spaces, so first divide 100 by 6:  $100 \div 6 = 16$ , remainder 4. So, the arrow goes around 16 full times and then 4 more spaces. Four spaces from Space P is Space T.

**89. (A)** Call the 6 members A, B, C, D, E, and M (for Mei-Ling). The possible combinations are AB, AC, AD, AE, AM, BC, BD, BE, BM, CD, CE, CM, DE, DM, and EM. Of those pairs, 5 include Mei-Ling.

**90. (E)** 
$$\frac{6 - 8(2 - t)}{2m + 4(3 - m)} = \frac{6 - 8[2 - (-1)]}{2(5) + 4(3 - 5)} = -$$
$$\frac{6 - 8(3)}{10 + 4(-2)} = \frac{6 - 24}{10 + (-8)} = \frac{-18}{2} = -9$$

**91. (D)** In a parallelogram, opposite angles are congruent, so the measure of the unmarked angle is  $56^\circ$ . The sum of the interior angles of a parallelogram is equal to  $360^\circ$ . Use that information to solve the problem:

$$x + y + 56 + 56 = 360$$

$$x + y + 112 = 360$$

$$x + y = 248$$

**92. (F)**  $JK = 6 - (-4) = 10$  units. Let  $x = JL$ . Then  $LK = 10 - x$ . Substitute these expressions in the given equation:

$$x = \frac{2}{3}(10 - x)$$

Solve for  $x$ :

$$x = \frac{2}{3}(10 - x)$$
 Apply the multiplicative inverse property; multiply both sides of the equation by 3.

$$3x = 2(10 - x)$$
 Apply the distributive property; multiply the 2 by 10 and  $x$ .

$$3x = 20 - 2x$$
 Apply the additive inverse property; add  $2x$  to both sides of the equation.

$$5x = 20$$
 Apply the multiplicative inverse property; divide both sides of the equation by 5.

$$x = 4$$

So, point L is 4 units to the right of point J:  $-4 + 4 = 0$ . Point L is located at 0 on the number line.

- 93. (C)** Let  $j$  be the number of stamps Josef has. Then Mai has  $j - 500$  stamps. The total number of stamps is  $j + (j - 500) = 2j - 500$ . Since Josef has 60% of the stamps, set up an equation to solve for  $j$ :

$$\frac{j}{2j - 500} = \frac{60}{100} \quad \text{cross multiply}$$

$$100j = 60(2j - 500) \quad \text{Apply the distributive property; multiply the 60 by } 2j \text{ and } 500$$

$$100j = 120j - 30,000 \quad \text{Apply the additive inverse property; subtract } 120j \text{ from both sides of the equation}$$

$$-20j = -30,000 \quad \text{Apply the multiplicative inverse property; divide both sides of the equation by } -20$$

$$j = 1,500$$

- 94. (F)** The area of the entire circle is  $\pi r^2$ . The fraction of the circle that is shaded is  $\frac{45}{360} = \frac{1}{8}$ . So, the area of the sector is  $\frac{1}{8}\pi r^2$ . Use that information to find  $r$ :

$$\frac{1}{8}\pi r^2 = 18\pi$$

$$r^2 = 144$$

$$r = 12$$

Use  $r$  to calculate the circumference of the circle:

$$c = 2\pi r = 2\pi(12) = 24\pi$$

The circumference is  $24\pi$  feet.

- 
- 95. (A)**  $-3x - 7 > -4$  Apply the additive inverse property; add 7 to both sides of the equation

$$-3x > 3 \quad \text{Apply the multiplicative inverse property; divide both sides of the equation by } -3. \text{ Note: when dividing inequalities by a negative number, the inequality sign is reversed.}$$

$$x < -1$$

The solution is that  $x$  is less than  $-1$ , so choose the graph that starts at  $-1$  and continues to the left.

- 96. (H)** First, set up the equations based on the information in the question.

$$R = 3S$$

$$T = \frac{1}{6}S$$

So, the ratio of R:T is

$$3S : \frac{1}{6}S$$

First, divide both sides by S to eliminate the variable. Then, multiply both sides by 6 to eliminate the fraction. The resulting ratio is 18:1.

- 97. (A)** If Ken gives 6 video games to Jeff, the number Ken has is  $k - 6$ , and the number Jeff has is  $j + 6$ . After the exchange, Ken has twice as many video games as Jeff. The equation is:

$$k - 6 = 2(j + 6)$$

- 98. (G)** So far, Sarah has read  $15\% + 17\% = 32\%$  of the entire book. That means she has  $100\% - 32\% = 68\%$  left to read.

$$68\% = \frac{68}{100} = \frac{17}{25}$$

- 99. (D)** First, list the first several multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48, 54 . . .

Every third multiple (i.e., 18, 36, 54, . . .) is also a multiple of 9. Thus,  $\frac{2}{3}$  of the multiples of 6 are not multiples of 9.

Next, calculate how many multiples of 6 are in the given number range. The last multiple of 6 would be 198. So, there are a total of  $\frac{198}{6} = 33$  multiples of 6. Since  $\frac{2}{3}$  of those are not multiples of 9, the answer is  $\frac{2}{3}(33) = 22$ .

- 100. (F)** First, calculate Kim's jogging time in minutes:

$$1 \text{ hour } 40 \text{ minutes} = 100 \text{ minutes}$$

Then, convert kilometers to meters:

$$8 \text{ kilometers} = 8,000 \text{ meters}$$

Now simplify the ratio to find the answer:

$$\frac{8,000}{100} = 80$$

- 101. (B)**  $\frac{x}{5} - 4 = 3(4 - 2x) - 1$  Apply the distributive property; multiply the 3 by 4 and  $-2x$

$$\frac{x}{5} - 4 = 12 - 6x - 1 \quad \text{Combine like terms}$$

$$\frac{x}{5} - 4 = 11 - 6x \quad \text{Apply the additive inverse property; add } 6x \text{ and } 4 \text{ to both sides of the equation}$$

$$\frac{x}{5} + 6x = 15 \quad \text{Get a common denominator}$$

$$\frac{x + 30x}{5} = 15 \quad \text{Apply the multiplicative inverse property; multiply both sides of the equation by } 5$$

$$31x = 75 \quad \text{Apply the multiplicative inverse property; divide both sides of the equation by } 31$$

$$x = \frac{75}{31}$$

**102. (E)** First, find the measures of the interior angles of the triangle formed by the line segment and the rectangle. The top angle on the right is a vertex of the rectangle, so the measure of that angle is  $90^\circ$ . The top angle on the left is supplementary to the given angle of  $130^\circ$ . So, the measure of that angle is  $180^\circ - 130^\circ = 50^\circ$ . The measure of the lower angle is  $40^\circ$ , since  $180^\circ - 90^\circ - 50^\circ = 40^\circ$ . Angle  $y$  is supplementary to the lower angle of  $40^\circ$ , so the measure of angle  $y$  is  $180^\circ - 40^\circ = 140^\circ$ .

**103. (D)** The number of students in the sample who wrote an essay with at least 100 words is 24 out of the 30 students. Write it as a fraction  $\frac{24}{30} = \frac{4}{5}$ . To predict the number of students in the entire grade who would write an essay with at least 100 words, find  $\frac{4}{5}$  of 150, which is  $\frac{4}{5}(150) = 120$ .

**104. (G)** Since 0.0099 is equal to 0.99%, the answer option closest to that value is 1%.

**105. (C)** The sum of the scores of Anita's 3 games is  $3(140) = 420$ . The sum of the scores of Tariq's 2 games is  $2(90) = 180$ . Add those two sums and divide by 5 to find the mean:

$$\frac{420 + 180}{5} = \frac{600}{5} = 120$$

**106. (E)** For the outer rectangle, the length is 4 feet and the perimeter is 14 feet. Write and solve an equation to find the width:

$$2(4) + 2w = 14 \quad \text{Apply the additive inverse property; subtract 8 from both sides of the equation}$$

$$2w = 6 \quad \text{Apply the multiplicative inverse property; divide both sides of the equation by 2}$$

$$w = 3$$

Use that information in a proportion to find the length of the shaded rectangle:

$$\frac{x}{4} = \frac{2}{3} \quad \text{Cross multiply}$$

$$3x = 4(2) \quad \text{Apply the multiplicative inverse property; divide both sides of the equation by 3}$$

$$x = \frac{8}{3}$$

Now find the area of the shaded rectangle:

$$2 \times \frac{8}{3} = \frac{16}{3} = 5\frac{1}{3}$$

**107. (C)** First convert 6 inches to 0.5 feet. Then, calculate the volume, in cubic feet:

$$30 \times 8 \times 0.5 = 120$$

**108. (H)** First find the multiples of 8 that fall between 10 and 70:  
16, 24, 32, 40, 48, 56, 64  
Since the greatest common factor of 24 and  $x$  is 8,  $x$  cannot be 24 or 48 (otherwise the GCF would be 24, not 8).

There are 5 remaining values: 16, 32, 40, 56, and 64.

- 109. (B)** Vicente ran 1.5 times as fast as Carla, so that means for every lap Carla finished, Vicente finished 1.5 laps. Set up a proportion to calculate  $c$ , the number of laps Carla had completed when Vicente finished 8 laps:

$$\frac{c}{1} = \frac{8}{1.5} \quad \text{Cross multiply}$$

$1.5c = 8(1)$  Apply the multiplicative inverse property; divide both sides of the equation by 1.5

$$c = 5\frac{1}{3}$$

So, the number of laps Carla still had to finish is  $8 - 5\frac{1}{3} = 2\frac{2}{3}$ .

- 110. (E)** Kharleen likes  $\frac{6}{20} = \frac{3}{10}$  of the dormitories. She likes  $\frac{2}{6} = \frac{1}{3}$  of the dining rooms. Multiply those fractions together to calculate the probability of Kharleen being assigned to both a dormitory and a dining room that she likes:  $\frac{3}{10} \times \frac{1}{3} = \frac{1}{10} = 10\%$ .

- 111. (D)** First, find the speed of the train in miles per hour:  $240 \div 5 = 48$ .  
The number of miles left to travel is  $2,200 - 240 = 1,960$ .  
To find the number of hours left, use the equation  $rt = d$ :  
 $48t = 1,960$  Apply the multiplicative inverse property; divide both sides of the equation by 48  
 $t = \frac{1,960}{48} = 40\frac{5}{6}$   
That number rounded to the nearest whole hour is 41 hours.

- 112. (H)** Let  $n$  represent the least of the four integers. The other three integers are  $(n + 1)$ ,  $(n + 2)$ , and  $(n + 3)$ . Write an equation to solve for  $n$ :

$$n + (n + 1) + (n + 2) + (n + 3) = 58$$

$$4n + 6 = 58$$

$$4n = 52$$

$$n = 13$$

- 113. (D)** The shaded region goes from  $\frac{1}{2}$  to  $\frac{3}{2}$ . So, the possible values of  $\frac{1}{x}$  would be between the reciprocal of  $\frac{1}{2}$  and the reciprocal of  $\frac{3}{2}$ , which are 2 and  $\frac{2}{3}$ , respectively. Find the number line in the answer options that has a shaded region that ranges from  $\frac{2}{3}$  to 2, which is option D.

- 114. (H)** Let  $\frac{1}{x}$  be the probability of Chanelle selecting a red marble the first time. The probability of selecting a red marble three times is  $\frac{1}{x} \times \frac{1}{x} \times \frac{1}{x}$ , which is given as  $\frac{1}{216}$ . Since  $216 = 6 \times 6 \times 6$ , the value of  $x$  is 6, and the probability of Chanelle selecting a red marble the first time is  $\frac{1}{6}$ .

### Answer Key for Sample Form A

1. C	14. E	27. A	40. G	53. C	66. F	79. C	92. F	105. C
2. E	15. C	28. G	41. D	54. E	67. D	80. G	93. C	106. E
3. B	16. H	29. D	42. E	55. B	68. F	81. A	94. F	107. C
4. G	17. A	30. E	43. A	56. G	69. A	82. G	95. A	108. H
5. B	18. F	31. B	44. H	57. A	70. F	83. A	96. H	109. B
6. E	19. A	32. H	45. B	58. 5	71. D	84. G	97. A	110. E
7. B	20. H	33. A	46. E	59. -9	72. F	85. B	98. G	111. D
8. H	21. B	34. G	47. C	60. 4	73. C	86. H	99. D	112. H
9. B	22. F	35. D	48. H	61. 55	74. H	87. B	100. F	113. D
10. F	23. C	36. F	49. D	62. 19.2	75. D	88. G	101. B	114. H
11. C	24. H	37. C	50. G	63. C	76. F	89. A	102. E	
12. H	25. D	38. F	51. A	64. E	77. C	90. E	103. D	
13. C	26. E	39. A	52. H	65. C	78. F	91. D	104. G	