

REVISING/EDITING PART A

1. The question asks for the revision that corrects the error in sentence structure in the paragraph.
 - A. **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 is correct because it separates the two sentences by placing a period where it is needed after “continents” and by capitalizing the word “At.”
 - B. 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.
 - C. 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).
 - D. 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.

2. The question asks for the revision of the sentence that uses the **most** precise language.
- E. Incorrect. The word “extremely” does not specify the precise length of the trail (2,200 miles); “millions” is less precise than the specific number of people who hike the trail each year (two million); and the verb “do” imprecisely describes the purpose of visiting the trail (hiking).
 - F. Incorrect. While the revision specifies the precise length of the trail and the verb “hike” precisely describes the purpose of visiting the trail, “more than a million” is less precise than the specific number of people who hike the trail each year (two million).
 - G. **CORRECT.** The length of the trail (2,200 miles), the specific number of people who hike the trail each year (two million), and the action of the visitors (hiking) are clear and precise in this revision of the sentence.
 - H. Incorrect. The word “lengthy” is less precise than specifying the actual length of the trail (2,200 miles); “a couple million” is less precise than the specific number of people who hike the trail each year (two million); and the verb “do” imprecisely describes the purpose of visiting the trail (hiking).
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3. The question asks for the **best** way to combine the sentences.
- A. Incorrect. Although the option combines the sentences in a way that accurately reflects the meaning of each individual sentence, the combined sentence is a string of clauses that do not effectively cohere. Because it is poorly structured, the combined sentence does not clarify the relationship of ideas as effectively as the correct response does. The sentence incorrectly uses “but tourists,” and “which cost” modifies “the space station” but does not modify the trip. Compared with the correct response, the combined sentence in this option is also imprecise and unnecessarily wordy.
 - B. **CORRECT.** The option uses a complex sentence to present ideas clearly and precisely, and it shows the relationship between the ideas in the original sentences. In the first part of the sentence, the conjunction “and” correctly joins the first and second sentences by indicating a relationship, rather than a contrast, between the two. In the second part of the sentence, the conjunction “but” adds additional emphasis to the fact that while tourists will be allowed to visit the space station, the cost of the trip will likely prohibit most people from visiting.
 - C. Incorrect. Although the option combines the sentences in a way that accurately reflects the meaning of each individual sentence, the combined sentence is a string of clauses that do not effectively cohere. Because it is so poorly structured, the combined sentence does not clarify the relationship of ideas as effectively as the correct response does. Compared with the correct response, the combined sentence in this option is also imprecise and unnecessarily wordy.
 - D. Incorrect. The combination of the sentences contains an illogical relationship between ideas with the statement that tourists will be allowed to pay for visits to the space station *because* the cost is \$52–\$58 million round trip. The connection between the idea that “tourists will soon be allowed to pay for visits” and the subsequent “therefore few people will be able to take advantage of the opportunity” is also illogical.

4. The question asks which edit should be made to correct the sentence.
- E. **CORRECT.** The sentence in the box needs a comma to separate the coordinate adjectives. Coordinate adjectives describe characteristics of the same noun or subject and are connected with a comma or “and.” This option is the only one that places a comma where it is needed, between the coordinate adjectives “agile” and “athletic.”
 - F. Incorrect. The option incorrectly adds a comma in the middle of the phrase “first and only,” which modifies, or gives additional information about, “professional basketball player.”
 - G. Incorrect. The option incorrectly adds a comma between two adjectives that are not coordinate adjectives. “Only” is part of the phrase “first and only” and is modifying “professional basketball player.”
 - H. Incorrect. The option is incorrect because a comma is not needed to set off the phrase “to score 100 points in a single game.”
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5. The question asks for the revision that corrects the error in sentence structure in the paragraph.
- A. **CORRECT.** As written, the first sentence (“In 1967 Katherine Switzer . . . legendary race.”) is a run-on sentence because a comma is used to combine two independent clauses. Independent clauses are complete sentences with a subject and a verb. The clauses—“In 1967 Katherine Switzer signed up for the Boston Marathon using her first and middle initials instead of her full name” and “at that time, only men were permitted to officially register and receive a number for the legendary race”—should be separated with a period instead. This revision correctly places a period after the word “name” and capitalizes the word “At” to separate the two independent clauses into two sentences.
 - B. Incorrect. The revision introduces an error into the paragraph and does not revise the run-on in the first sentence. The clause “Once officials realized a woman was attempting to run in the race” is a dependent clause functioning as an adverb of the independent clause that follows it. Changing the comma after the word “race” to a period would incorrectly separate the adverbial dependent clause from the independent clause.
 - C. Incorrect. The revision introduces an error into the paragraph and does not revise the run-on in the first sentence. The sentence “Switzer prevailed and finished in just over four hours, paving the way for the official rule change that allowed for the inclusion of women” is a complex sentence, which combines an independent clause (“Switzer prevailed and finished in just over four hours”) and a dependent clause (“paving the way for the official rule change that allowed for the inclusion of women”). The clause “paving the way for the official rule change that allowed for the inclusion of women” is not a complete sentence and must stay connected to the first part of the sentence. Changing the comma after “hours” to a period would incorrectly separate the dependent clause from the independent clause.
 - D. Incorrect. The revision introduces an error into the paragraph and does not revise the run-on in the first sentence. Changing the comma after “261” to a period would incorrectly separate the modifying clause “the same number she had worn in that first run in 1967” from the words it describes (“number 261”). Additionally, the clause “the same number she had worn in that first run in 1967” is not a complete sentence.

REVISING/EDITING PART B

Cracking the Code

6. The question asks for the **best** way to combine sentences 3 through 5 to clarify the relationship between ideas.
- E. 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. The word "because" incorrectly indicates that people can already construct complex programs prior to learning the coding language that would allow them to do so.
 - F. **CORRECT.** This sentence 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. Knowing that language will, in turn, allow them to build programs that can perform detailed and complex tasks.
 - G. 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 to perform their job functions. 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).
 - H. 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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7. The question asks for the sentence that should follow sentence 5 to **best** state the main claim in the passage.
- A. **CORRECT.** This sentence logically follows sentence 5 and introduces the main idea of the passage: that due to the high demand for coding skills across a wide range of industries and disciplines, learning basic coding skills can provide a range of opportunities for personal growth.
 - B. 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. This sentence does not capture the passage’s emphasis on the variety of ways people can learn how to code (sentence 14).
 - C. 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.
 - D. 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.

8. The question asks for the **best** revision of sentence 10 to provide a transition to the argument in the third paragraph.
- E. 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.
 - F. **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).
 - G. Incorrect. While sentence 13 suggests that employers recognize the value of coding skills, sentences 11 and 12 give examples of different industries that employ people who know how to code. The transition sentence should introduce the idea that coding skills are valuable to potential employees.
 - H. 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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9. The question asks which sentence would **best** follow sentence 13 and support the ideas in the third paragraph.
- A. Incorrect. While this sentence provides an example of a high salary, which is mentioned in the paragraph (sentence 13), the reference to “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.
 - B. 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.
 - C. Incorrect. This sentence generally discusses employers looking for two things: “experience in a specific industry” and “knowledge of basic coding.” The third paragraph, however, discusses the possibilities of using coding skills in a variety of occupations. The words “experience in a specific industry” do not connect to the idea the paragraph develops.
 - D. **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.”

10. The question asks which concluding sentence would **best** follow sentence 20 and support the argument presented in the passage.
- E. 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.
 - F. **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).
 - G. 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.
 - H. 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.
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Martial Arts for the Mind and Body

11. The question asks for the **best** way to combine sentences 2 and 3.
- A. Incorrect. This way of combining sentences 2 and 3 places unnecessary emphasis on characterizing historians, and it does not clearly show the contrasting relationship between the idea from sentence 2 that historians do not know the exact origins of martial arts and the idea in sentence 3 that historians know that martial arts have a long history.
 - B. **CORRECT.** This option is correct because the word “while” at the beginning of the sentence best indicates the contrast between the ideas in sentences 2 and 3. Sentence 2 states that historians do not know the exact origins of martial arts (“unsure of exactly when and where”). Sentence 3 describes what historians do know about these origins (“practiced by several different societies for many centuries”). This combination indicates that historians have a general understanding about the origins of martial arts even though they cannot confirm the exact details.
 - C. Incorrect. Starting this sentence with the word “because” indicates a cause-and-effect relationship that does not exist between the ideas in the original sentences. The idea from sentence 3, that historians know that martial arts have been practiced for many years, did not cause the idea in sentence 2, that historians do not know exact details about the origins of martial arts.
 - D. Incorrect. The conjunction (connecting word) “and” does not clearly show how the ideas in sentences 2 and 3 are related. While “and” can be used to combine related sentences, it does not demonstrate the contrast between the idea in sentence 2, that historians do not know the exact origins of martial arts, and the idea in sentence 3, that historians know that martial arts have a long history.

- 12.** The question asks where sentence 10 should be moved to improve the organization of the second paragraph.
- E.** Incorrect. Starting this paragraph with sentence 10 would weaken the paragraph’s organization because it would place a supporting detail sentence (sentence 10) before the topic sentence (sentence 6). Sentence 6 belongs at the beginning of the paragraph because it introduces the topic—the qualities of discipline, focus, and respect. Sentence 10 supports the key idea of the paragraph, that these qualities can be developed through the study of martial arts. If sentence 10 preceded sentence 6, the transitional phrase “for example” would refer to an unspecified topic and idea.
 - F.** Incorrect. Sentence 6 presents the idea that “discipline, focus, and respect are important qualities for everyone to have,” but the example in sentence 10 does not directly relate to this idea. Sentence 10 explains how martial arts develop these qualities, not why they are important qualities to have. Because sentence 10 is not directly related to the idea in sentence 6 (the qualities are important), it should not follow sentence 6.
 - G.** Incorrect. Sentences 7 and 8 should not be separated, because the idea presented in sentence 8—that “the study of martial arts can provide an opportunity to develop these skills”—is directly related to the idea from sentence 7—that the skills of discipline, focus, and respect “are not innate; they must be learned and practiced.” Sentence 10 supports the idea from sentence 8 by describing an example from a typical martial arts class, so sentence 10 should not precede sentence 8.
 - H. CORRECT.** This option is correct because sentence 10 logically follows and supports the idea in sentence 8 that “the study of martial arts can provide an opportunity to develop” the qualities of discipline, focus, and respect. Sentence 10 explains this idea with examples, describing three specific ways that students in a typical tae kwon do class develop discipline, focus, and respect—by “diligently practicing,” “listening carefully,” and “bowing to the instructor and following directions.”
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- 13.** The question asks for the revision of sentence 12 that **best** maintains the formal style established in the passage.
- A.** Incorrect. The phrases “A lot,” “put up with,” “difficult things,” and “do well in school” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.
 - B.** Incorrect. The phrases “deal with,” “tough situations,” “stay on top of,” and “do well in life” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.
 - C. CORRECT.** This option is correct because it uses clear and scholarly wording throughout the whole sentence. The phrases “many teenagers,” “encounter challenges,” and “succeed both academically and personally” make the sentence’s style more consistently formal than the other options.
 - D.** Incorrect. The phrases “A lot,” “face problems,” and “keep up with” are worded informally; therefore, this sentence does not consistently maintain the formal style established in the passage.

14. The question asks for the transitional phrase that should be added to the beginning of sentence 17.
- E. **CORRECT.** This option is correct because it best shows the chronological progression between the ideas in sentence 16—progressing through levels of achievement “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.” The transitional phrase “over time” shows the gradual nature of the relationship between the cause in sentence 16 and the effect in sentence 17.
 - F. Incorrect. Though the ideas in sentences 16 and 17 are related, “in fact” does not show the correct relationship between the ideas. The transitional phrase “in fact” emphasizes an idea by giving a detail or example of greater intensity, but the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks”—are related by cause and effect rather than by (degree of) intensity.
 - G. Incorrect. The transitional phrase “even so” is used to connect opposing ideas, but the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—does not contrast with the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.”
 - H. Incorrect. Although the transitional phrase “for instance” connects an idea with a related example, it does not show the cause-and-effect relationship between the ideas in sentence 16—progressing through levels “requires students to take responsibility and be accountable for achieving set goals”—and the ideas in sentence 17—“students gain confidence and experience companionship with other students who are progressing through the ranks.”
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15. The question asks for the sentence that would **best** follow and support sentence 18.
- A. Incorrect. Though the idea of advancing one’s career is certainly appealing for adults, this benefit is not directly tied to “health and fitness” and, therefore, does not support sentence 18.
 - B. Incorrect. While the passage does discuss potential benefits related to discipline, focus, and confidence (sentences 6 and 11), sentence 18 is solely related to health and fitness benefits and should not be followed by a description of “other skills.”
 - C. **CORRECT.** This option is correct because sentence 18 conveys that the greatest benefit of practicing martial arts is “health and fitness,” and the sentence illustrates some specific ways that martial arts training helps improve physical fitness—“strengthen their heart, boost endurance, improve balance, and develop muscle tone.”
 - D. Incorrect. Some readers may choose this option because sentence 5, sentence 15, and sentence 18 discuss the physical aspects of practicing martial arts, but the idea that people who practice martial arts are concerned about their overall health does not provide further details about the connection between training and health.

- 16.** The question asks for the concluding sentence that **best** replaces sentence 23 and supports the topic presented in the passage.
- E.** Incorrect. The phrase “the skills needed to progress in rank” is vague, and progressing in rank is not related to the overall topic of the passage, which is the benefits of studying martial arts. The topic of the passage is not the “many ways to begin studying martial arts” or how “people can easily discover” the benefits of martial arts.
 - F. CORRECT.** This option is correct because it best supports the topic of the passage—the benefits of studying martial arts—by stating two reasons why people should study martial arts: to “experience the satisfaction of achieving goals while also improving themselves.”
 - G.** Incorrect. Some readers may choose this option because it refers to the benefits of martial arts, but the word “because” and the detail that “enrollment in martial arts courses has increased” make this sentence unrelated to the overall topic of the passage, which is about the benefits of studying martial arts, not the number of people who participate.
 - H.** Incorrect. Although the benefits of studying martial arts are described for both teens (in the third paragraph) and adults (in the fourth paragraph), the topic of the passage is the overall benefits of studying martial arts, which include mental discipline (discussed in the first, second, and third paragraphs) in addition to health benefits. Furthermore, the passage does not compare the health effects of studying martial arts across age groups.

READING COMPREHENSION

Excerpt from "Scribe Like an Egyptian"

- 17.** The question asks for a sentence from the excerpt that supports the idea that different levels of education were available to scribes.
- A.** Incorrect. The sentence from paragraph 1 provides evidence that Egyptian scribes used two different forms of writing, but it does not address the topic of education or the different levels of education that were available to scribes.
 - B.** Incorrect. The advantages and purposes of hieratic script are described in this sentence from paragraph 2, but this explanation of the advantages and purposes does not suggest that there were different levels of education for scribes.
 - C.** Incorrect. The fact that scribes could learn their trade through apprenticeships as discussed in this sentence from paragraph 4 does provide evidence that another method of learning to be a scribe was possible, but this process was for a limited entry into becoming a scribe, not the continued education scribes would need in order to work in specific areas.
 - D. CORRECT.** By explaining that certain professions required additional years of training, this sentence from paragraph 6 supports the idea that different levels of education existed for scribes.
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- 18.** The question asks for an explanation of the author's purpose for including a sentence in paragraph 2 that describes the two types of hieroglyphs and the main uses of this particular writing system.
- E.** Incorrect. The sentence explains that hieroglyphs were used for formal inscriptions, but it does not suggest that these inscriptions were limited to royal and religious contexts.
 - F.** Incorrect. The sentence describes the two basic types of hieroglyphs, ideograms and phonograms, but it does not address how experts interpret the ancient writing system. A sentence earlier in the paragraph explains that the hieroglyphs were deciphered by Champollion, but it does not explain how he deciphered them.
 - G.** Incorrect. Although the sentence explains that the hieroglyphs were typically used for formal inscriptions, it does not provide an explanation of the significance or importance of hieroglyphs in the Egyptian language.
 - H. CORRECT.** The sentence explains that hieroglyphs included both phonograms and ideograms that were used in formal inscriptions and funeral papyri; therefore, this sentence achieves the purpose of describing the basic features of hieroglyphs as conveying either words and ideas or sounds, in addition to explaining the common uses for the writing system.

19. The question asks for the **best** summary of the process that schools used to train scribes.
- A. Incorrect. This summary incorrectly explains that scribes were expected to learn 450 hieratic signs instead of 450 hieroglyphs along with their hieratic versions as explained in paragraph 6. In paragraph 5, the author explains that scribes copied texts as part of the process of learning the scripts rather than as practice after the signs had already been memorized.
 - B. **CORRECT.** Paragraph 5 explains that students began by learning hieratic script and studied for about five or six years by using “exemplar documents and extracts from popular texts to copy, to practice their hieratic handwriting.” The paragraph also explains that during this time, they learned only the basics of hieroglyphic script.
 - C. Incorrect. Although paragraph 5 does explain that the scribes spent five or six years learning hieratic script, it does not suggest that hieroglyphs were learned only during apprenticeships.
 - D. Incorrect. This summary correctly explains that scribes learned two types of scripts, but the second sentence of the summary is incorrect. In paragraph 5, the author explains that the students copied from exemplar texts, but the author clearly states that the purpose of this copy work was “to practice their hieratic handwriting” and does not suggest that the copy work was used to practice hieroglyphs. Paragraph 6 explains that scribes could make lists and write letters as part of their professional skills but does not suggest that copy work was used to help them learn these tasks.
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20. The question asks for the claim that is **best** supported by the details in paragraphs 3 and 4.
- E. Incorrect. While paragraph 4 does explain that boys from poorer families had more challenges in receiving an education, the paragraph also provides examples of obtaining a patron or getting an apprenticeship as ways that these aspiring scribes could attain an education. Furthermore, the details in paragraph 3 do not provide any support for the claim that “common citizens” had difficulty getting an education because that paragraph focuses on the example of one person who was able to become a king as a result of his background as a scribe.
 - F. **CORRECT.** In paragraph 3, the author provides an example of a person who used his skills as a scribe to rise through the ranks of society by describing the achievements of Horemheb to support the idea that “no matter how humble his origins, an educated Egyptian could achieve almost anything.” The author continues in paragraph 4 to explain that with the proper support, some young Egyptians could become educated, thereby opening more opportunities for themselves.
 - G. Incorrect. Paragraph 4 explains that schools were supported by the government and religious institutions, but it also explains that apprenticeships were a method of learning the craft of the scribe. As the paragraph indicates, boys could also be helped in their education by support from “a wealthier relative or patron.”
 - H. Incorrect. In paragraph 4, the author details the kinds of sacrifices that were necessary for some poorer families to ensure education for their sons. However, as paragraph 3 reveals in its example of Horemheb, who was born of middle-ranking parents, the sacrifice of time and money was not required for all families.

- 21.** The question asks why hieratic script was especially valuable in a bureaucratic government.
- A. CORRECT.** Hieratic script is described in paragraph 1 as being simpler for the “multitude of everyday documents” generated by the government and as “quicker to write and more economical of space” in paragraph 2. The logical conclusion based on these details is that hieratic script was more efficient for the large amounts of documentation produced by the government.
 - B.** Incorrect. In paragraph 4, the author explains that “education was not available to all,” suggesting that only people who were educated could read and write. The excerpt as a whole does not provide sufficient information to indicate what portion of the general public would be able to comprehend material written in hieratic script.
 - C.** Incorrect. The idea that becoming a scribe could lead to taking different positions in society is addressed in paragraphs 3, 4, and 6. However, the use of hieratic script in the fields of medicine, law, or religion does not necessarily explain the value of the script for the bureaucratic government referenced in the question.
 - D.** Incorrect. Although different professions such as doctors and lawyers used hieratic script, the author uses these professions as examples of different job opportunities for scribes in paragraph 6. There is no discussion in the excerpt about different professions communicating with each other, and these professions were not necessarily part of the bureaucratic government.
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- 22.** The question asks how the diagram of ancient Egyptian class structure supports the topic of the excerpt.
- E. CORRECT.** The focus of the excerpt is the opportunities available to scribes in different professions and how people became scribes and therefore improved their position. By illustrating the position of the scribes in the class structure of ancient Egypt, the diagram supports the idea that scribes were valuable members of society.
 - F.** Incorrect. The professions of the different social classes are shown in the diagram, but it does not address specific tasks. Furthermore, the main topic of the excerpt is the role of the scribes in society rather than the tasks performed by the different social classes.
 - G.** Incorrect. While the diagram does show the position of scribes in the social hierarchy, it does not provide an illustration of movement between the different classes or rankings, so the diagram does not support the idea that scribes were able to improve their social standing.
 - H.** Incorrect. The diagram shows the class structure as hierarchical and can support readers’ efforts to compare the different social positions. However, the role of scribes in society, rather than a general comparison of different classes, is the main focus of the excerpt.

23. The question asks for a statement with which the author would **most** strongly agree.
- A. Incorrect. The author only addresses boys who entered the profession of scribes. While the author does address the role of the family in supporting a boy's education or securing an apprenticeship, the author does not provide any discussion to support the idea that boys were only encouraged to follow the professions of their male relatives.
 - B. Incorrect. The author explains that communication using hieroglyphs was not widely practiced in everyday correspondence and that hieratic script was the more popular form of writing. While being able to read and use hieroglyphs would have been helpful, it was not common for citizens to use this formal form of communication. In addition, scribes were trained to learn hieroglyphs and hieratic script as part of their education, so prior ability to read or compose hieroglyphs was not a requirement.
 - C. **CORRECT.** As described in paragraph 2, hieratic script was more efficient and economical than hieroglyphs. Because this script was used for "everyday purposes," it was the more practical of the scripts as hieroglyphs were reserved for "formal inscriptions."
 - D. Incorrect. In paragraph 6, the author indicates that "any half-competent scribe" could become employed in making and updating lists. While the paragraph later indicates that scribes would need to study several more years to be employed in a wider range of professions, there is no indication that employment as a scribe would be unavailable to a boy who studied for only a few years.
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Excerpt from "Do Them No Harm!"

24. The question asks how paragraph 1 contributes to the setting of the excerpt.
- E. **CORRECT.** Paragraph 1 describes summer "when salmon spawn," "huckleberries ripen," and The People gather for "their annual camas harvest." These descriptions show the abundance of food in the place where the excerpt occurs.
 - F. Incorrect. Although the setting refers to past events, the narration is not by The People. In addition, the voice narrating the excerpt is not an element of the setting.
 - G. Incorrect. Nothing in paragraph 1 suggests that the camp is changing in any way. The People gather annually in this place. In addition, the language used to describe the setting does not suggest any problems.
 - H. Incorrect. The People are not making observations about the setting in paragraph 1. They are described as performing actions, such as gathering "for the work and festivities of their annual . . . harvest."

25. The question asks how the beginning of the change of seasons mainly affects the characters.
- A. **CORRECT.** Paragraph 4 describes the time as the last chance for The People to be together “before the Cold Moons kept them close to their fires.” Paragraph 6 tells about how the women were working hard to dig and cure roots, because “WARM was going and COLD was coming.” These paragraphs describe both celebration and preparation before the winter comes.
 - B. Incorrect. Paragraphs 4 and 6 describe the characters working hard, but there is no discussion of them wanting to rest and relax.
 - C. Incorrect. While both paragraphs describe some of the work involved in the harvest, paragraph 4 also lists a number of leisure activities, such as visiting, foot racing, horse racing, gambling, and stick games. The characters are still taking the time to relax.
 - D. Incorrect. While paragraph 4 mentions trading in a list of activities that the characters are doing, this is just one of many activities. Allowing the characters to trade goods is not the way the change in seasons mainly affects them.
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26. The question asks how paragraphs 7 and 9 convey a central idea of the excerpt.
- E. Incorrect. Paragraphs 7 and 9 describe activities that The People do at the Red Bear camp. They do not describe The People exploring new areas.
 - F. Incorrect. While paragraph 7 lists some of the activities that The People did to help, neither paragraph emphasizes that The People need to be organized.
 - G. Incorrect. Paragraph 9 mentions how the sun blessed the Red Bear camp. However, these paragraphs do not otherwise mention weather.
 - H. **CORRECT.** Paragraph 7 lists activities that The People do with one another. Paragraph 9 states that “all were busy with their daily tasks.” Everyone is contributing to the community in their preparation for winter.
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27. The question asks what is the **most likely** reason that the author repeats the word “played” in paragraph 8.
- A. Incorrect. Paragraph 7 describes the different tasks that the adults were doing at this time. They were not watching the children play, because they were busy working.
 - B. Incorrect. While everyone enjoys being at the gathering, the word “played” does not describe the activities of the adults. As described in paragraph 7, the adults are working together at various tasks.
 - C. Incorrect. The word “played” is used before phrases describing what the children did. It is not used to list activities available for all at the gathering.
 - D. **CORRECT.** The word “played” appears before different activities that the children did, such as pretending to hunt, take care of the babies, and take care of the animals. They played by pretending to do adult activities. The last sentence states that the children “learned how to live through their play.”

- 28.** The question asks how paragraphs 11–13 affect the plot of the excerpt.
- E.** Incorrect. The paragraphs contain questions about the arriving people. They do not present differing points of view.
 - F. CORRECT.** The paragraphs ask questions in which the characters wonder whether the arriving people are friends or enemies, or whether they might be bringing good news or bad news. By suggesting that the arriving people could present problems such as these, the paragraphs contribute to the rising action.
 - G.** Incorrect. The paragraphs do not lead to a turning point. Instead, they lead to the climax—the moment the characters discover who the visitors are. This means the paragraphs contribute to the rising action.
 - H.** Incorrect. Paragraphs 11–13 ask questions. They do not provide background information about the strangers; instead, they ask for it.
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- 29.** The question asks how the phrases “trophies of their hunt” and “paraded around” affect paragraph 20.
- A.** Incorrect. The phrase “trophies of their hunt” describes the animals that the hunters have successfully found. They have already received their rewards (the animals) and are showing them to The People.
 - B.** Incorrect. The excerpt describes many ways that The People find and prepare their own food. While they appreciate the extra food, they are not dependent on the hunters.
 - C. CORRECT.** The hunters “parade around” because they are proud of the animals they have been able to get while hunting. Since a trophy is a recognition of success, they consider these animals their trophies.
 - D.** Incorrect. The phrases show the pride the hunters feel. As paragraph 20 says, the hunters want “all to see how strong their Hunting Power had been.” The phrases are focused on the hunters rather than on those who have gathered around them.

- 30.** The question asks which quotation from the excerpt **best** supports the idea that The People maintain a connection to members of their group in spite of distance.
- E.** Incorrect. This quotation describes the fact that The People always return to the same camp to perform the same traditional tasks and enjoy the same festivities as their ancestors. This quotation highlights the customs The People continue from their ancestors, but it does not focus on their present personal connections.
 - F. CORRECT.** This quotation alludes to The People’s eagerness to hear about the families who had traveled away from their group. This eagerness shows that they still feel a connection to these families, even though they are far apart.
 - G.** Incorrect. This quotation describes The People’s analysis of the visitors—that they may be hunters. It does not show a connection to the visitors.
 - H.** Incorrect. This quotation shows that The People are curious about a stranger who has come into their camp. It does not show closeness to distant members of the group.
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Excerpt from "The Food Business Incubator"

- 31.** The question asks what the words “recognized” and “prestigious” convey about La Cocina.
- A.** Incorrect. While later information indicates that La Cocina bases its choices on the work ethic of entrepreneurs as well as their financial needs, the use of the words “recognized” and “prestigious” in the context of the sentence is not related to the work ethic of the chefs.
 - B. CORRECT.** The fact that alumni of the La Cocina program have received recognition as semi-finalists for prestigious awards shows that La Cocina has helped members of its program achieve at the highest level.
 - C.** Incorrect. As paragraph 1 indicates, La Cocina focuses on helping local food entrepreneurs develop their small businesses. While some participants in the program have earned official recognition, La Cocina is not primarily focused on establishing entrepreneurs as celebrated professionals.
 - D.** Incorrect. La Cocina assists chefs with the development of their small businesses, not necessarily with their development of specific products.

- 32.** The question asks how paragraph 4 contributes to the development of ideas about La Cocina in paragraph 1.
- E. CORRECT.** Paragraph 4 lists ways that La Cocina provides support to local food entrepreneurs. This supports the statement in paragraph 1 that La Cocina has been “helping local food entrepreneurs, many of whom are low-income immigrant women, develop their small businesses.”
 - F.** Incorrect. Paragraph 1 simply states that La Cocina tries to help local food entrepreneurs develop their businesses, but neither paragraph describes or mentions any goals that La Cocina sets for local food entrepreneurs.
 - G.** Incorrect. While paragraph 4 mentions some background information on where local food entrepreneurs were found, these details do not directly support any ideas in paragraph 1.
 - H.** Incorrect. The description of the process by which Caleb Zigas realized there was a need for La Cocina provides background for the organization, but it does not directly support any ideas in paragraph 1.
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- 33.** The question asks how the description of Mariko Grady’s background in paragraph 9 contributes to a central idea in the excerpt.
- A.** Incorrect. The paragraph about Mariko Grady describes her earlier success in the field of theatrical dance and how she later started her own small cooking business. It does not describe what she was looking for when she came to La Cocina.
 - B.** Incorrect. The excerpt does not argue that La Cocina is the best option for people starting out in the food business, and the description in paragraph 9 does not support that idea.
 - C. CORRECT.** The detailed background story of Mariko Grady describes that Grady started a small food business after working as “a singer and dancer with the prestigious modern theatrical dance group she founded” and then, after that ended, created a fermented food product line. This information contributes to a central idea in the excerpt that many of the people working with La Cocina, like Grady, “needed an affordable commercial kitchen space and technical assistance in order for their businesses to be legally viable. La Cocina provided just such a space, in addition to helping them develop business plans, pull city permits and more” (paragraph 4).
 - D.** Incorrect. While Mariko Grady is now a food business owner that La Cocina has helped since 2012, Grady’s story does more to illustrate how people from non-business backgrounds can receive special support from La Cocina in order to do more with their business.

34. The question asks with which statement the author would **most likely** agree.
- E. Incorrect. The author does not suggest at any point that La Cocina would like to expand its work and mission to other cities.
 - F. Incorrect. While the author describes some of the work of talented chefs from La Cocina, at no point does the author imply that the many food choices that exist in San Francisco are because of La Cocina.
 - G. Incorrect. While the author does describe how La Cocina can help entrepreneurs find success, at no point does the author suggest that La Cocina can guarantee success.
 - H. **CORRECT.** The descriptions of the income requirements as well as the information that some of the chefs are James Beard award recipients and others have achieved success with their businesses all help show that the author admires the work of La Cocina in helping chefs who have few resources.
-

35. The question asks which detail would be **most** important to include in a summary of the excerpt.
- A. Incorrect. The detail about the cookbook that includes members' stories is mentioned briefly but not developed and should not be included in a summary.
 - B. **CORRECT.** The fact that La Cocina provides legal and technical assistance is a key factor in the success of the chefs who participate. Paragraph 4 explains that La Cocina provides technical and legal assistance by helping businesses navigate city permits and meet other challenges. This detail supports the central idea by sharing how La Cocina helps food entrepreneurs expand their businesses.
 - C. Incorrect. The specific requirements for chefs to be accepted at La Cocina are lesser details and should not be included in a summary.
 - D. Incorrect. Paragraph 5 indicates that vendors from La Cocina sell their food at various venues, including farmers' markets or corporate events. However, this is a detail that is not developed at any length and should not be included in a summary.

- 36.** The question asks how the table provides additional support for a central idea of the excerpt.
- E.** Incorrect. The table describes the requirements that allow food entrepreneurs to qualify to participate in La Cocina. While the table does mention that applicants without a business plan must contact one of La Cocina’s partner organizations, it does not specifically explain how La Cocina works with these partner organizations to help educate successful applicants.
 - F.** Incorrect. The table describes the ways entrepreneur chefs must qualify in order to be accepted into La Cocina, not how their businesses can be successful after they leave.
 - G.** Incorrect. While the table mentions community spirit, this is in reference to the type of energy La Cocina wishes to establish within its group kitchen space. The excerpt and table do not discuss providing food to different communities within or outside San Francisco as specific goals of La Cocina.
 - H. CORRECT.** A central idea of the excerpt is that La Cocina helps local food entrepreneurs develop their businesses. The table lists requirements for people who want to participate in La Cocina. They must be willing to work hard to promote their own businesses as they use the resources that La Cocina provides.
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Excerpt from "The Past and the Future of the Earth's Oldest Trees"

- 37.** The question asks what the effect is of comparing groups of bristlecone pines to “a city within a cemetery” (paragraph 2).
- A.** Incorrect. The reference to “a city within a cemetery” describes how new trees use the remnants of their “ancestors” (paragraph 2) and makes no comment on the appearance of young versus mature trees.
 - B. CORRECT.** The “cemetery” contains “the bones of their ancestors” (paragraph 2)—“ancestors” being earlier generations of bristlecone pines—which provide some of the nutrients that the new trees need.
 - C.** Incorrect. The reference to “a cemetery” is not a comment on how long bristlecone pines can live; rather, it illustrates that the new pines are using remnants of their “ancestors” (paragraph 2) to grow.
 - D.** Incorrect. Although the climate is mentioned in paragraph 2, it is not the reason for the comparison to “a city within a cemetery.” The comment is intended to illustrate how the new trees use nutrients left behind by the old ones.

- 38.** The question asks how paragraph 4 conveys the idea that the bristlecone pine can withstand difficult conditions.
- E.** Incorrect. While paragraph 4 does mention the bristlecone pine in conjunction with other long-living trees, this does not explain in any way how the bristlecone pine can survive difficult conditions.
 - F. CORRECT.** Paragraph 4 mentions several qualities that help the bristlecone pine survive a difficult environment: it can survive in a “dry, cold climate” as few plants can, it tolerates a soil that is heavily alkaline and low in nutrients, and the density of its wood protects it from insects.
 - G.** Incorrect. Paragraph 4 focuses on the qualities of the bristlecone pine that make it well suited to the White Mountains rather than why the White Mountains are well suited to bristlecone pines.
 - H.** Incorrect. While paragraph 4 does acknowledge that the bristlecone pine has few competitors because the pine can stand conditions few other plants can stand, it is the examination of the pine’s unique qualities that explains how the pine survives those conditions.
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- 39.** The question asks how the first sentence from paragraph 5 contributes to the development of ideas in the excerpt.
- A.** Incorrect. While “two-hundredths of an inch” is a reference to the bristlecone pine’s growth pattern, the point of the reference—and of the entire sentence—is to emphasize the incredibly slow pace of the pine’s life cycle.
 - B.** Incorrect. While “wars raged” is a threat that empires face, the point of mentioning wars and the rise and fall of empires is to emphasize the bristlecone pine’s slow-paced life cycle by contrasting its slowness with the big, dramatic changes taking place in human history at the same time.
 - C. CORRECT.** Making reference to huge changes in human history such as the rise and fall of empires and the raging of wars provides a sharp contrast to the incredibly slow growth of the bristlecone pine.
 - D.** Incorrect. This sentence describes how slowly the bristlecone pine grows in contrast to how dramatically human history changes in the same time span but never explains the reasons for the pine’s longevity.

- 40.** The question asks what the phrases “clings to life” and “stripped of bark” in paragraph 6 are used to emphasize.
- E.** Incorrect. While these two phrases are suggestive of the tree’s fragility, nothing in this paragraph suggests that the tree needs help to avoid extinction.
 - F.** Incorrect. While the tree may be misunderstood to be dead because it is “stripped of bark,” the phrase “clings to life” emphasizes the fact that the tree is not dead but manages to survive.
 - G.** Incorrect. The paragraph says that far from being interested in the tree’s unusual appearance, “most people march past it without giving it a second glance” (paragraph 6).
 - H. CORRECT.** The phrase “clings to life” emphasizes that the tree is still surviving even though it is partially fossilized, as shown by its “marbled hulk stripped of bark” (paragraph 6).
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- 41.** The question asks which central idea of the excerpt is supported by the details in paragraph 7.
- A.** Incorrect. While paragraph 7 mentions the pines' ability to survive climate change, the central idea is about the trees' longevity. Surviving climate change is a part of the pines' longevity, but just surviving climate change does not fully encompass the central idea of the excerpt.
 - B.** Incorrect. Although the paragraph mentions that the “super-elderly trees” are each unique in appearance, their appearance does not directly connect to their ability to survive. The details in paragraph 7 emphasize the durability and longevity of the trees.
 - C.** Incorrect. While the beginning of paragraph 7 expresses the idea that each bristlecone pine appears to be a unique individual and supports the idea that humans relate to the pines, the paragraph expresses a stronger central idea in the last two sentences about the pines’ survival.
 - D. CORRECT.** The longevity of bristlecone pines is a central idea of the excerpt. Experts are encouraged that bristlecone pines have survived many catastrophes, and the details in the second half of paragraph 7 draw direct attention to the trees’ longevity.

- 42.** The question asks how the author conveys his point of view throughout the excerpt.
- E. CORRECT.** The author clearly conveys his interest in and admiration of the bristlecone pine by sharing many details throughout the excerpt that show how unusual the tree is; these include details about the tree using remnants from previous generations (paragraph 2), details about the “agonizingly” slow growth rate (paragraph 3), and details about the incredibly difficult growing conditions that the tree thrives in (paragraph 4).
 - F.** Incorrect. While the author does briefly compare the bristlecone pine to global empires (paragraphs 1, 3, and 5), he mainly offers many details throughout the excerpt about what makes the bristlecone pine so unusual.
 - G.** Incorrect. While paragraph 6 largely focuses on the contrast of the pine’s sickly appearance with its ability to survive, this is just one detail about the pine that makes it unusual. The author offers many such details throughout the excerpt.
 - H.** Incorrect. The author suggests in paragraph 7 that the bristlecone pine “may survive humanity,” but this is just one detail about the bristlecone that the author offers in an excerpt full of details, each of which contributes to an understanding of how unusual this tree is.
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- 43.** The question asks for a summary of the bristlecone pine’s life cycle.
- A.** Incorrect. Though the summary in this option covers key points in the life cycle, it focuses on minor details (“stubby seedling” and “alkaline soil”) while leaving out major details in the life cycle (for example, the fact that parts of the trees become fossilized over time).
 - B.** Incorrect. The answer addresses the unique quality of the pine growing from “fragments of its dead ancestors”; however, it does not address the fossilization phase, which is a major part of the life cycle. In addition, this option incorrectly states that the tree continues to funnel nutrients to its stem.
 - C. CORRECT.** The option describes the key phases of the pine’s life cycle without focusing on minor details. The organization of the summary is chronological, and the information presented is accurate.
 - D.** Incorrect. The option focuses more on the location and the appearance of the pine than on the phases of the pine’s life cycle. The option contains an accurate description of the pine’s appearance but provides little information about the main phases of its life cycle.

"Bird Talk"

44. The question asks how lines 6–7 from the poem develop an idea from the second stanza.
- E. Incorrect. In lines 2–3, the tree branches exclaim that “ ‘This is the / beginning of summer,’ ” and the birds respond by taking “their hops and zigzags a little more / anxious” (lines 6–7); however, the birds’ eager reaction to the return of warmer weather is not referenced in the second stanza of the poem, which is more about the nature of birds generally than the changing of the seasons.
 - F. Incorrect. Birds are more likely to thrive in warmer weather as evidenced by some birds’ migration to a warmer climate during winter, and the creatures in the first stanza are responding to the “ ‘beginning of summer’ ” (line 3) in their own way, such as the birds who are taking “their hops and zigzags a little more / anxious” (lines 6–7). However, the thriving of birds during a particular season is not the focus of the second stanza; rather, it is focused on the general nature of birds.
 - G. **CORRECT.** The birds are taking “their hops and zigzags a little more / anxious” (lines 6–7) in light of warmer weather, but they are not making a big to-do of the change because “a home is a home; worms are worms” (line 7) any time of the year. Such a natural adjustment to seasonal changes is reflected in the second stanza, where the birds “count up this year as against next / year” (lines 26–27) because they are well accustomed to the cyclical nature of things.
 - H. Incorrect. Although the birds’ actions of “hops and zigzags” (line 6) may indicate some sort of preparation, these actions are not preparation but rather the internalized cognizance of the change that has occurred with little conscious thought. As revealed in the second stanza, birds do not ponder much about past or future but rather adapt naturally as things change.

45. This question asks for what a phrase reveals about the speaker's perspective on the change in seasons.
- A. **CORRECT.** The first stanza of the poem establishes the way different parts of the natural world, including both plants and animals, respond to the change in season. These lines reflect the way the wind in the leaves is the best indication of the seasonal change because it is the wind in the leaves that "talked most of all and said more than any others / though speaking the fewest words" (lines 13–14).
 - B. Incorrect. Although the sound of the wind is the most obvious sign of the seasonal change per the speaker, it is in response to the " 'beginning of summer' " (line 3) that the wind speaks through the leaves. The poem does not reveal that this figurative speech occurs throughout the seasons, only that it occurs during the transition to summer.
 - C. Incorrect. While the language used by the speaker indicates a deep appreciation for the natural phenomenon being witnessed, the language used does not indicate a feeling of being overwhelmed but rather a feeling of awareness.
 - D. Incorrect. Using the personification of the wind "speaking" (line 14) indicates an appreciation by the speaker for the power and volume of the wind's voice, but only one instance of the wind's speech, that which occurs at the " 'beginning of summer' " (line 3), is chronicled by the speaker in the poem.
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46. The question asks how the repetition of a phrase contributes to the meaning of the poem in terms of conveying information about a cyclical event.
- E. **CORRECT.** This phrase is used twice verbatim, in both cases to show the figurative words spoken by the branches (lines 2–3) and the leaves on the branches (lines 18–19). Repetition of this phrase conveys the idea that the transition to summer occurs in the same manner each subsequent year and thus evokes the same response from nature.
 - F. Incorrect. While living things—branches and leaves—both make identical figurative utterances, they do so not because they have prepared for such an event. Rather, these living things take the change in stride because of the sameness and expectedness of the seasonal shifts, which occur in the same way each time.
 - G. Incorrect. Even though the branches and leaves have been imbued by the speaker with some degree of consciousness in their figurative ability to speak, they are not surprised by the change in seasons. They say the same thing each year because the same thing occurs each year in the same way.
 - H. Incorrect. Certain lines of the poem do describe the natural world during the change of seasons, such as lines 8–9: "The yellow spreads of the dandelions and buttercups / reached across the green pastures." However, this repeated phrase serves to evoke a sense of sameness and inevitability; it is not a phrase related to the physical appearance of the natural world, only the way the natural world responds to the seasonal change with simple acceptance for its sameness. The repeated lines do not hold any sort of expectation or anticipation for the coming of summer; they help relay observations made about the state of the season.

47. The question asks for the identification of a description that contrasts with the scarcity and bleakness of winter.
- A. Incorrect. These lines indicate that the frogs are first very excited about the shift from winter to spring, which causes them to make a loud “shrilling,” yet their sounds lessen after a time and grow weaker. As such, these lines contrast two periods of spring (early vs. later) and the response of the frogs to these two periods; the lines do not contrast the bleakness of winter with the abundance of spring or summer.
 - B. **CORRECT.** During winter, there is scarcity of plant life and a bleak landscape: trees lose their leaves, snow covers the ground, and nature appears dark and shuttered. In contrast, these lines reveal the bright “yellow spreads” of flowers and the verdant “green pastures” that are signs that winter has abated.
 - C. Incorrect. This description contrasts the sounds of “the breezes” of warmer air and the sounds made by grackles—a type of bird—rather than the bleakness and scarcity of winter and the abundance of the “ ‘beginning of summer’ ” (line 3).
 - D. Incorrect. These lines show the contrast between the two ways of looking at things in terms of past vs. present or present vs. future; in this instance, the lines reveal the way birds naturally expect and adapt to the passing of time and the change of seasons. The lines do not present a contrast between winter and spring.
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48. This question asks how the description of the “bird talk” contributes to the central idea of the poem.
- E. Incorrect. The birds’ conversations may center around “who is here” and “who is not here and who used to be here” (lines 23–24), but the lines do not convey that the speaker feels a sense of loss, only that the birds have such figurative conversations in a direct way.
 - F. Incorrect. Though the birds are described in these lines by the speaker as “talking bird talk” (line 22), it is not suggested that this talk occurs more frequently in one season versus another, only that it occurs year after year because birds encounter seasonal changes as a constant.
 - G. **CORRECT.** In these lines, the birds gather, and some birds are not present but “used to be here” (line 24). These birds have likely succumbed to another of nature’s cycles: death, which affects all living things.
 - H. Incorrect. Though the description in these lines is a vivid one and includes anthropomorphism in the birds asking about “who is here” (line 23) and “counting up last year as against / this year” (lines 25–26), it gives no indication of the speaker’s level of enjoyment in observing nature.

49. This question asks for an explanation of how the poet conveys the speaker's point of view on the natural world and the change of seasons as presented in the poem.
- A. Incorrect. Though in the first stanza the speaker describes various elements of nature such as branches, frogs, birds, flowers, and leaves, these elemental shifts are not precisely gradual and occur only in the first stanza. Further, the first stanza, though appreciative of the natural world, is primarily descriptive and does not develop the speaker's perspective to the degree that other parts of the poem do.
 - B. Incorrect. While it may be inferred that the speaker describes the landscape to such a degree because it has revealed a seasonal shift, that this is indeed the speaker's motivation is never explicitly conveyed by the poet.
 - C. Incorrect. Multiple seasons do not pass in the poem; only the shift to the " 'beginning of summer' " (line 3) occurs in an endless cycle. Further, the speaker does not reveal an emotional response; it is the responses of nature that the speaker describes.
 - D. **CORRECT.** The first stanza is the speaker's observations of the natural world embracing a new season. In the second stanza, the speaker begins to reflect on how the natural world, as embodied by the birds, calmly accepts seasonal change in its perpetual sameness. The reflection continues in the third stanza, where it is revealed that the speaker has been addressing these observations to a child.
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50. The question asks how the central idea about the natural acceptance of change by nature is developed by the speaker of the poem.
- E. Incorrect. The speaker is an observer of the changes in nature as propelled by the seasons and shows no personal eagerness for the end of winter. Further, even though nature rejoices at the end of winter as exemplified by "the shrilling of the frogs" (line 4), the speaker merely records this and does not share in this display.
 - F. **CORRECT.** The response of nature to the "beginning of summer" (line 3) is the primary focus of the poem as revealed by the speaker through vivid descriptions of the sights, sounds, movements, and attitudes of the natural world.
 - G. Incorrect. The second stanza of the poem begins a reflection on birds "sitting in circles talking bird talk" (line 22) and taking a sort of attendance of who is present, but this behavioral description is largely figurative and meant to illustrate a point about the way the birds adapt quickly to change, not to develop a central idea of the poem in terms of how nature responds generally.
 - H. Incorrect. Seasonal changes are inevitable and cyclical per the speaker, but the speaker does not predict future changes to the landscape as a method of developing the central idea. Rather, the speaker describes nature's response to changes that have already occurred.

Excerpt from "It's Time to Stop Thinking That All Non-Native Species Are Evil"

- 51.** The question asks which sentence from the excerpt supports the conclusion that Elton's "militaristic 'invasion' metaphor" (paragraph 1) has influenced scientific understanding of non-native species.
- A. CORRECT.** This sentence shows that of the 2,000 ecologists Olden polled, many said they think it is right to "immediately eradicate" non-native species plants even if they are demonstrably harmless in their new environment. The response of these ecologists supports that Elton's metaphor discussed in paragraph 1 has influenced scientific understanding.
 - B.** Incorrect. Rather than supporting the idea that the militaristic metaphor has influenced scientists, this sentence shows that conservationists, at any rate, are happy to let non-native species thrive wherever they can, given global warming.
 - C.** Incorrect. While this sentence does refer to efforts to eradicate a non-native species, the main point of it is that these efforts ended up harming a native species (the clapper rail shorebird).
 - D.** Incorrect. In contrast to supporting the idea that the militaristic invasion metaphor has influenced scientific understanding of non-native species, this sentence puts forth the bold idea of treating non-native species as something to be welcomed.
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- 52.** This question asks how climate change has affected efforts to manage invasive species.
- E.** Incorrect. While ecologists are now arguing for some non-native species to be left alone (paragraph 13), they are arguing specifically on behalf of "well-behaved" non-native species (paragraph 12), not non-native species in general.
 - F.** Incorrect. While paragraph 10 describes how removing a non-native species negatively affected a native species, the excerpt never discusses the idea that attempts to eliminate non-native species might have damaged the environment.
 - G.** Incorrect. While the excerpt refers to climate change causing plants and animals to move to more tolerable environments (paragraph 8), it does not specifically discuss ways to ensure that the arrival of these non-native species does not harm native species.
 - H. CORRECT.** As paragraph 8 says, "plants and animals are already moving toward the poles" because of climate change, and ecologists recognize that those species need to do so to adapt "to the warmer future we're creating."

- 53.** The question asks which detail provides the **most** relevant support for the claim that “climate change is making it harder even to decide who the invaders are” (paragraph 7).
- A. CORRECT.** The fact that many plants and animals have no choice but to seek out “climate conditions they can tolerate” (paragraph 8) makes it much harder to decide whether to call these species invaders.
 - B.** Incorrect. The fact that many domestic crops are non-native species has nothing to do with climate change affecting our discernment of which species are invaders.
 - C.** Incorrect. The description in paragraph 11 of native and non-native species interacting never suggests that climate change is a factor in these interactions and never suggests that climate change muddies our understanding of which species is native and which is non-native.
 - D.** Incorrect. While the example of Mark Davis so thoroughly changing his beliefs about non-native species is a powerful one, the role that climate change might have played in this reversal is never discussed.
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- 54.** The question asks what the author’s use of cause and effect in paragraphs 10–11 mainly emphasizes.
- E.** Incorrect. The examples of cause and effect discussed in paragraphs 10–11, such as the spartina grass helping the clapper rail and the Japanese white-eye bird pollinating Hawaiian flowers, are all instances in which non-native species have helped their new environments.
 - F.** Incorrect. While paragraph 10 does mention that efforts to eradicate the non-native spartina grass hurt the native clapper rail shorebird, the main emphasis in both paragraphs 10–11 is on the fact that certain non-native species have helped native species.
 - G. CORRECT.** Paragraphs 10–11 focus on several examples of non-native species that have helped endangered native species flourish: non-native spartina grass providing “important habitat for the endangered California clapper rail” (paragraph 10), non-native tamarisk shrubs providing nesting places for the endangered southwestern willow flycatcher (paragraph 11), and the non-native Japanese white-eye bird pollinating Hawaiian flowers (paragraph 11).
 - H.** Incorrect. While paragraphs 10–11 describe several interactions between non-native and native species, they never discuss monitoring these interactions.

55. The question asks which sentence from the excerpt supports the idea that some species are able to adjust to change.
- A. Incorrect. This sentence discusses native gardens, featuring native species, which presumably have no need to adjust to change.
 - B. **CORRECT.** This sentence demonstrates that some species—in this case, Hawaiian flowers—have adapted well to change: the flowers thrive thanks to new pollinators.
 - C. Incorrect. This sentence focuses on the importance of “preventing extinctions and preserving biodiversity” but does not address the fact that being able to adjust to change is one thing that helps achieve those goals.
 - D. Incorrect. Far from demonstrating that some species can adjust to change, this sentence discusses species that were not adjusting to the loss of large tortoises and were therefore “on the decline.”
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56. The question asks how the details in the section “A Good Thing, Not the Only Thing” convey a central idea of the excerpt.
- E. Incorrect. While paragraph 15 does discuss introducing non-native Aldabra tortoises to replace native tortoises that no longer exist, the real point of this section is to show that non-native species can sometimes help support native species that still exist but are struggling. In this case, the Aldabra tortoises are now moving seeds around for the fruiting plants on the islands where they have been introduced.
 - F. **CORRECT.** This section discusses situations in which non-native species should be kept (as in the example of the Aldabra tortoises in paragraph 15) but also asserts that “most of the time . . . conserving species still means focusing on supporting them in their historical habitats, planting natives and removing non-natives” (paragraph 16). This section makes the point that the issue of non-natives needs to be considered on a case-by-case basis.
 - G. Incorrect. This section does not claim that non-native species always or even usually enhance biodiversity; rather, it states that “in some cases we can best serve biodiversity by leaving the non-natives alone or even—brace yourself, now—introducing them on purpose” (paragraph 14), later adding that “most of the time . . . conserving species still means focusing on supporting them in their historical habitats, planting natives and removing non-natives” (paragraph 16).
 - H. Incorrect. While the section happens to give a good example of a habitat that supports both native and non-native species (the islands of Mauritius), it never suggests that being able to do so is a defining characteristic of healthy habitats.

- 57.** The question asks how the chart provides additional support for a central idea of the excerpt.
- A.** Incorrect. The chart indicates that the public tends to become aware of non-native species once eradication is “unlikely or impossible,” not strictly impossible. Furthermore, this idea is not a central idea of the excerpt.
 - B. CORRECT.** The chart strongly suggests that once “rapid increase in populations” of non-native species has occurred, eradication will be “unlikely or impossible.”
 - C.** Incorrect. While the chart does show that non-native species can eventually be impossible to eradicate, it never addresses the issue of how the non-native species might be destructive to their new environments.
 - D.** Incorrect. The chart shows how non-native species become harder and harder to remove as their population grows but does not explain how any conservation groups have approached their removal.

- 58. (1.18)** To determine the area of a circle, begin by finding the radius of the circle, which is half of the diameter.

The radius of the entire circle is

$$1\frac{1}{4} \text{ in.} \div 2 = \frac{5}{8} \text{ in.}, \text{ so the area of the entire circle is } \pi\left(\frac{5}{8}\right) \text{ in.}^2 = \frac{25}{64}\pi \text{ in.}^2$$

The radius of the hole in the circle is

$$\frac{1}{4} \text{ in.} \div 2 = \frac{1}{8} \text{ in.}, \text{ so the area of the hole in the circle} = \pi\left(\frac{1}{8}\right) \text{ in.}^2 = \frac{1}{64}\pi \text{ in.}^2$$

To determine the area of the shaded region, subtract the area of the hole in the circle from the area of the entire circle:

$$\begin{aligned} & \left(\frac{25}{64}\right)\pi \text{ in.}^2 - \left(\frac{1}{64}\right)\pi \text{ in.}^2 = \\ & \left(\frac{24}{64}\right)\pi \text{ in.}^2 = \\ & \left(\frac{3}{8}\right)\pi \text{ in.}^2 = \\ & \left(\frac{3}{8}\right) \text{ in.}^2(3.14) = \\ & 1.175 \text{ in.}^2 \end{aligned}$$

1.175 square inches rounded to the nearest hundredth of a square inch = 1.18 square inches

- 59. (1.5)** Let x represent the number of hours the electrician can work.

The cost for the number of hours worked is \$60 times the number of hours worked, x . The sum of the one-time trip charge (\$45) and the cost of the number of hours worked ($60x$) must be less than or equal to \$135. Express this relationship as an inequality:

$$45 + 60x \leq 135$$

Solve the inequality for x :

$$\begin{aligned} 45 + 60x & \leq 135 \\ 60x & \leq 90 \\ x & \leq \frac{90}{60} = \frac{9}{6} = \frac{3}{2} \end{aligned}$$

Written as a decimal, $\frac{3}{2} = 1.5$.

60. (12) Determine the greatest temperature listed for the six days:

Of 7, 4, 1, (-2), (-5), and 3, the greatest value is 7 because its location is farthest to the right on a number line.

Greatest temperature = 7° F

Determine the lowest temperature listed for the six days:

Of 7, 4, 1, (-2), (-5), and 3, the lowest value is (-5) because its location is farthest to the left on a number line.

Lowest temperature = $(-5)^{\circ}$ F

Determine the difference between the two temperatures:

$$7^{\circ}\text{ F} - (-5)^{\circ}\text{ F} = 7^{\circ}\text{ F} + 5^{\circ}\text{ F} = 12^{\circ}\text{ F}$$

- 61. (3)** To determine the cost of a gallon of orange juice, begin by finding the total number of ounces in the 6-pack of bottles:

$$5.5 \text{ oz} \times 6 = 33 \text{ oz}$$

So, 33 oz of orange juice costs \$1.79.

There are 128 oz in 1 gallon. Set up a proportion using the \$1.79 cost per 33 oz of orange juice and the unknown cost (x) per 1 gallon of orange juice:

$$\frac{33 \text{ oz}}{\$1.79} = \frac{128 \text{ oz}}{x}$$

Cross multiply to solve for x in the proportion:

$$(33) \times (x) = (\$1.79) \times (128)$$

$$33x = \$229.12$$

$$x = \$6.94$$

So, the orange juice costs \$6.94 per gallon, and the milk costs \$3.99 per gallon.

Subtract the cost per gallon of milk from the cost per gallon of orange juice.

$$\$6.94 - \$3.99 = \$2.95$$

Round the difference to the nearest dollar.

\$2.95 rounds to \$3.

- 62. (15)** Determine the range by subtracting the minimum value on the box plot from the maximum value on the box plot:

Maximum value = 84° F, Minimum value = 39° F

$$84^{\circ} \text{ F} - 39^{\circ} \text{ F} = 45^{\circ} \text{ F}$$

Determine the interquartile range by subtracting the lower quartile value on the box plot from the upper quartile value on the box plot:

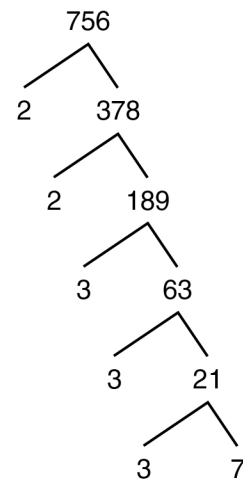
Upper Quartile Value = 78° F, Lower Quartile Value = 48° F

$$78^{\circ} \text{ F} - 48^{\circ} \text{ F} = 30^{\circ}$$

Determine the difference between the range (45° F) and the interquartile range (30° F):

$$45^{\circ} \text{ F} - 30^{\circ} \text{ F} = 15^{\circ} \text{ F}$$

- 63. (D)** Determine the prime factors of 756 using a factor tree:



The prime factors are 2, 2, 3, 3, 3, and 7, or $2 \cdot 2 \cdot 3 \cdot 3 \cdot 3 \cdot 7$, which can be expressed using exponents as $2^2 \cdot 3^3 \cdot 7$.

- 64. (F)** First, substitute -2 for x and 2 for y .

$$\frac{(-2)^2(2)^6}{(-2)(2)^2}$$

Then, simplify.

$$\frac{(-2)(-2)(2)^2(2)^4}{(-2)(2)^2}$$

$$\frac{(-2)(2)^4}{1}$$

$$\frac{-2 \times 16}{1}$$

$$-32$$

- 65. (B)** The quantity $(8 \div m)$ means the same as $\frac{8}{m}$, so the equation can be rewritten:

$$\left(\frac{8}{m}\right) + 4 = 20$$

Subtract 4 from both sides:

$$\left(\frac{8}{m}\right) = 16$$

Multiply both sides of the equation by m :

$$8 = 16m$$

Solve for m :

$$\left(\frac{8}{16}\right) = m$$

Simplify:

$$\left(\frac{8(\div 8)}{16(\div 8)}\right) = \left(\frac{1}{2}\right)$$

- 66. (H)** Simplify $6x = x - 1,680$. First, subtract x from both sides of the equation. Then, divide both sides by 5.

$$6x - x = x - x - 1,680$$

$$5x = -1,680$$

$$\frac{5x}{5} = \frac{-1,680}{5}$$

$$x = -336$$

- 67. (C)** Determine the total cost of the car by adding the down payment to the total monthly payments over 3 years.

There are 12 months in a year, so multiply (12 months/year \times 3 years) to get a total of 36 months. Determine the total monthly payments by multiplying the monthly payment (\$275) \times the total number of months (36):

$$275 \times 36 = 9,900$$

Determine the total cost of the car by adding the down payment (\$1,200) to the total monthly payments (\$9,900):

$$9,900 + 1,200 = 11,100$$

The total cost of the car is \$11,100.

- 68. (E)** In a parallelogram, any two adjacent angles are supplementary, so the sum of the two given angles is equal to 180° .

Write an equation showing that the sum of $3x^\circ$ and $2x^\circ$ is equal to 180° :

$$3x + 2x = 180$$

Solve for x :

$$5x = 180$$

$$\frac{5x}{5} = \frac{180}{5}$$

$$x = 36$$

- 69. (D)** Write an expression to represent the number of occupants after 20 stops. Then, simplify the expression.

$$R + (20 \times 3) = R + 60$$

Write an expression to represent the number of occupants after 4 stops. Then, simplify the expression.

$$R + (4 \times 3) = R + 12$$

Write an equation that shows that the number of occupants after 20 stops is 3 times the number of occupants after 4 stops. Then, solve for R .

$$R + 60 = 3(R + 12)$$

$$R + 60 = 3R + 36$$

$$60 = 2R + 36$$

$$24 = 2R$$

$$12 = R$$

Write an expression to represent the number of occupants after 10 stops. Then, substitute 12 for R and evaluate.

$$R + (10 \times 3)$$

$$12 + (10 \times 3) = 12 + 30 = 42$$

- 70. (H)** Since Jay sold n tickets and Pilar sold 3 times the number of tickets Jay sold, Pilar sold $3n$ tickets.

Then, since together Jay and Pilar sold 10 more tickets than Amie, subtract 10 from $(n + 3n)$ to get the expression that shows how many tickets Amie sold.

$$(n + 3n) - 10$$

Then combine like terms.

$$4n - 10$$

- 71. (C)** Divide to solve for x :

$$\frac{(-12)}{6} > \frac{6x}{6}$$

$$-2 > x$$

Rewriting $-2 > x$ with the x term first requires reversing the inequality symbol in order to keep the meaning “ x is less than (-2) ”:

$$x < -2$$

-
- 72. (E)** To find the value of x in terms of y , solve $5(x - 6y) = 50y$ for x . Begin by distributing 5 on the left side of the equation:

$$(5 \times x) - (5 \times 6y) = 50y$$

$$5x - 30y = 50y$$

Solve for the value of x :

$$5x = 80y$$

$$\frac{5x}{5} = \frac{80y}{5}$$

$$x = 16y$$

- 73. (C)** Determine the two missing side lengths on the scale drawing:

All corners are right angles, so the figure can be divided into rectangles with opposite sides that are congruent in length. This means the sum of the shorter vertical sides on the left and in the center of the figure (2 in. + x in.) must equal the length of the longer vertical side on the right side of the figure (5 in.):

$$2 + x = 5$$

$$x = 3$$

So, the missing vertical side length of the figure is 3 in.

Again, because opposite sides of a rectangular figure are congruent in length, the sum of the shorter horizontal sides in the middle and bottom of the figure (3 in. + x in.) must equal the length of the longer horizontal side on the top of the figure (6 in.):

$$3 + x = 6$$

$$x = 3$$

So, the missing horizontal side length of the figure is 3 in.

Determine the perimeter by adding all the

side lengths of the figure:

$$6 + 2 + 3 + 3 + 3 + 5 = 22$$

This is a scale drawing in which $\frac{1}{2}$ in. = 25 ft. Write a proportion to determine the value of x , the unknown number of feet that is represented by 22 in.:

$$\frac{(\frac{1}{2}) \text{ in.}}{25 \text{ ft}} = \frac{22 \text{ in.}}{x}$$

Cross multiply and solve the equation for x :

$$(\frac{1}{2})(x) = (22)(25)$$

$$\frac{1}{2}x = 550$$

$$x = 1,100$$

- 74. (G)** Maria's rate of speed is given as 15 miles per hour. Since 1 hour is equivalent to 60 minutes, her rate of speed, in miles per minute, can be determined.

$$\frac{15 \text{ miles}}{1 \text{ hour}} = \frac{15 \text{ miles}}{60 \text{ minutes}} = \frac{1 \text{ mile}}{4 \text{ minutes}},$$

or $\frac{1}{4}$ mile per minute.

Therefore, it takes Maria 4 minutes to ride 1 mile.

The distance to school is 6 miles, so it will take $6 \times 4 = 24$ minutes to ride to school.

- 75. (C)** The triangle formed by line p , line m , and the line segment connecting the two contains a 73° angle, a right angle (90°), and a missing angle measuring x° . The sum of the interior angles of a triangle is 180° , so begin by finding the value of x :

$$180^\circ = 73^\circ + 90^\circ + x$$

$$180^\circ = 163^\circ + x$$

$$17^\circ = x$$

Line m is a straight line, so it has a measure of 180° . The 17° angle from the triangle and the adjacent angle outside the triangle are supplementary, so they have a sum of 180° . Let s represent the measure of the adjacent angle outside the triangle. The value of s can be determined by subtracting:

$$s = 180^\circ - 17^\circ$$

$$s = 163^\circ$$

Given that n and p are parallel lines and that they have been cut by a transversal, line m , then corresponding angles are congruent. Angles r and s are corresponding angles, so the value of r is congruent to the value of s , which is 163° .

-
- 76. (G)** PQRS is a parallelogram in which \overline{PS} is a base and \overline{QT} is an altitude. The base is 34 cm in length, and the height is the length of the altitude, so the height is 18 cm.

To determine the area of a parallelogram, multiply the base \times the height:

$$34 \text{ cm} \times 18 \text{ cm} = 612 \text{ cm}^2$$

-
- 77. (B)** Determine the total number of stamps in 5 albums holding 576 stamps:

$$5 \times 576 = 2,880$$

Determine the total number of stamps in 6 albums holding 378 stamps:

$$6 \times 378 = 2,268$$

Subtract 2,268 from 2,880 to find the number of stamps that will be left over:

$$2,880 - 2,268 = 612$$

- 78. (H)** Begin by multiplying 135.28 by 10:

$$135.28 \times 10 = 1,352.8$$

Add 0.5:

$$1,352.8 + 0.5 = 1,353.3$$

Drop the digits after the decimal point, so 1,353.3 becomes 1,353.

Divide by 10:

$$1,353 \div 10 = 135.3$$

- 79. (B)** Substitute -2 for each value of x in the expression:

$$\begin{aligned} & |(-2) + (-2)^2 + (-2)^3| \\ & \text{minus} \\ & |(-2) + 2(-2) + 3(-2)| \end{aligned}$$

Evaluate the terms involving exponents:

$$\begin{aligned} & |(-2) + 4 + (-8)| \\ & \text{minus} \\ & |(-2) + 2(-2) + 3(-2)| \end{aligned}$$

Evaluate the terms involving multiplication:

$$\begin{aligned} & |(-2) + 4 + (-8)| \\ & \text{minus} \\ & |(-2) + (-4) + (-6)| \end{aligned}$$

Simplify the expression:

$$\begin{aligned} & |2 + (-8)| - |(-2) + (-10)| \\ & |-6| - |-12| \end{aligned}$$

The absolute value of (-6) is 6, and the absolute value of (-12) is 12, so $|-6| - |-12|$ is the equivalent of subtracting 12 from 6:

$$6 - 12 = (-6)$$

- 80. (F)** Simplify the expression.

$3 + (-3)$ is the equivalent of subtracting 3 from 3, and $3 - (-3)$ is equivalent of adding 3 to 3:

$$\frac{3 + (-3)}{3 - (-3)} = \frac{3 - 3}{3 + 3} = \frac{0}{6}$$

The zero property of division states that zero divided by any number equals zero, so $\frac{0}{6} = 0$.

- 81. (C)** Since the greatest number of decimal places is 2 (hundredths), multiply both terms by 100, and then divide:

$$\begin{aligned} & 12.96(100) \div 0.08(100) = \\ & 1,296 \div 8 = \\ & 162 \end{aligned}$$

82. (E) \overline{MN} begins at 1 and ends at 7.

Determine the length of \overline{MN} :

$$7 - 1 = 6$$

The midpoint of a line segment is located exactly halfway between the two endpoints. Since \overline{MN} is 6 units in length, the two endpoints are 6 units apart. Determine the location of the midpoint, in relation to each endpoint, by dividing 6 by 2:

$$6 \div 2 = 3$$

The location of the midpoint of \overline{MN} is 3 units from either endpoint. Find the midpoint by either adding 3 to the location of M (1) or subtracting 3 from the location of N (7):

$$1 + 3 = 4$$

$$7 - 3 = 4$$

The midpoint of \overline{MN} is located at 4.

\overline{RS} begins at 3 and ends at 6. Determine the length of \overline{RS} :

$$6 - 3 = 3$$

Since \overline{RS} is 3 units in length, the two

endpoints are 3 units apart. Determine the location of the midpoint, in relation to each endpoint, by dividing 3 by 2:

$$3 \div 2 = 1.5$$

The location of the midpoint of \overline{RS} is 1.5 units from either endpoint. Find the midpoint by either adding 1.5 to the location of R (3) or subtracting 1.5 from the location of S (6):

$$3 + 1.5 = 4.5$$

$$6 - 1.5 = 4.5$$

The midpoint of \overline{RS} is located at 4.5.

Determine the distance between the two midpoints by subtracting:

$$4.5 - 4 = 0.5$$

0.5 is equivalent to $\frac{1}{2}$, making the distance between the two midpoints $\frac{1}{2}$ unit.

- 83. (D)** Each of the three expressions must be considered:

Expression I: $s - t$, where s is a positive integer and t is a negative integer:

Subtracting a negative integer is the equivalent of adding a positive integer, so $s - (-t)$ is equivalent to finding the value of $s + t$, which must result in a positive number.

Expression II: st^2 , where s is a positive integer and t is a negative integer:

Squaring a negative integer results in a positive integer, so $s(-t)^2$ is equivalent to finding the value of st^2 , which must result in a positive number.

Expression III: s^t , where s is a positive integer and t is a negative integer:

A negative exponent results in the reciprocal of the same exponential expression, so $s^{(-t)}$ is equivalent to finding the value of $\frac{1}{s^t}$, which must result in a positive number.

Therefore, Expressions I, II, and III must all result in a positive number.

- 84. (G)** Evaluate the expression by multiplying the terms in the numerator and the terms in the denominator. The product of two negative values is positive:

$$\frac{(-3) \times (-2)}{4 \times 5} = \frac{6}{20}$$

Simplify the result:

$$\frac{6 \div 2}{20 \div 2} = \frac{3}{10}$$

- 85. (D)** The sum of all transactions (\$70) includes the income data (positive values) and the expense data (negative values). Write an equation to determine the value of p by adding all the income data and subtracting all the expense data:

$$400 \cdot 2 + 95 + p - 120 \cdot 4 - 500 = 70$$

Simplify the expression to determine the value of p :

$$800 + 95 + p - 480 - 500 = 70$$

$$895 + p - 980 = 70$$

$$p - 85 = 70$$

$$p = 155$$

86. (F) A yardstick is 1 yard in length.

$$1 \text{ yd} = 3 \text{ ft}$$

$$4 \text{ yd} = 12 \text{ ft}$$

A 12-inch ruler is 1 foot in length.

Two 12-inch rulers is 2 feet in length.

$$12 \text{ ft} + 2 \text{ ft} = 14 \text{ ft}$$

87. (A) The ratios of the items are equal, so they can be expressed using a proportion.

Let a represent the number of apples, o the number of oranges, c the number of cherries, and w the number of walnuts.

Write a proportion showing apples:oranges is equal to cherries:walnuts:

$$\frac{a}{o} = \frac{c}{w}$$

Substitute the given values for oranges (6), cherries (16), and walnuts (48):

$$\frac{a}{6} = \frac{16}{48}$$

Cross multiply to form an equation to solve for the number of apples (a):

$$(a \times 48) = (16 \times 6)$$

Solve for the value of a :

$$48a = 96$$

$$a = 2$$

- 88. (F)** The ratio of paintings to drawings to photographs is 3:5:4.

First, determine the number of actual paintings and photographs.

Since the number of actual drawings is 45, each ratio is multiplied by 9, since $5 \times 9 = 45$.

Type	Ratio	Actual Number
Paintings	3	27
Drawings	5	45
Photographs	4	36

Then, add the actual number of paintings and photographs.

$$27 + 36 = 63$$

- 89. (C)** It takes $\frac{5}{6}$ yard of fabric to make $\frac{3}{8}$ foot of curtain width.

To find the ratio of 1 foot of curtain width to $\frac{3}{8}$ foot of curtain width $\left(1:\frac{3}{8}\right)$, divide.

$$1 \div \frac{3}{8} = 1 \times \frac{8}{3} = \frac{8}{3}$$

So the amount of fabric needed for 1 foot of curtain width is $\frac{8}{3}$ times the amount needed for $\frac{3}{8}$ foot of curtain width.

$$\frac{8}{3} \times \frac{5}{6} = \frac{40}{18}$$

$$\frac{40 \div 2}{18 \div 2} = \frac{20}{9}$$

The amount of fabric needed for 1 foot of curtain width is $\frac{20}{9}$ yards.

-
- 90. (H)** The graph of any proportional line must intersect the origin, $(0, 0)$.

The only line on the coordinate plane that contains $(0, 0)$ is \overleftrightarrow{TR} .

Both point $T(1, 4)$ and point $R(2, 8)$ have a y -value that is 4 times the x -value, and every point on the line fits the proportional equation $y = 4x$.

When $x = 0$, $y = 4(0)$. So the line contains the origin, $(0, 0)$.

- 91. (C)** The x -axis represents the weight, in pounds (lb), of ice purchased, and the y -axis represents the cost of the ice, in dollars.

The x -value in the point $(10, 1.5)$ represents 10 lb of ice, and the y -value represents 1.5 dollars, or \$1.50.

Therefore, the cost of 10 lb of ice is \$1.50.

- 92. (F)** The x -axis represents the time, in hours, the clerk enters information into the computer, and the y -axis represents the number of keystrokes the clerk makes.

The x -value in $(1.5, 10500)$ gives 1.5 hours as the amount of time the clerk enters information.

The y -value gives 10,500 as the number of keystrokes made by the clerk.

Since the graph is a proportional line, the clerk's rate is 10,500 keystrokes in each 1.5 hours of entering information.

- 93. (D)** Each of the options 0, 2, 3, and 6 must be considered:

Option A: In the case of 0, the three-digit whole number is 270. Divide 270 by both 3 and 4:

$$270 \div 3 = 90 \text{ (or } 90R0\text{)}$$

$$270 \div 4 = 67\frac{1}{2} \text{ (or } 67R2\text{)}$$

Dividing 270 by 3 results in a remainder of 0, but dividing 270 by 4 results in a remainder of 2, so 0 cannot be the missing digit.

Option B: In the case of 2, the three-digit whole number is 272. Divide 272 by both 3 and 4:

$$272 \div 3 = 90\frac{2}{3} \text{ (or } 90R2\text{)}$$

$$272 \div 4 = 68 \text{ (or } 68R0\text{)}$$

Dividing 272 by 4 results in a remainder of 0, but dividing 272 by 3 results in a

remainder of 2, so 2 cannot be the missing digit.

Option C: In the case of 3, the three-digit whole number is 273. Divide 273 by both 3 and 4:

$$273 \div 3 = 91 \text{ (or } 91R0\text{)}$$

$$273 \div 4 = 68\frac{1}{4} \text{ (or } 68R1\text{)}$$

Dividing 273 by 3 results in a remainder of 0, but dividing 273 by 4 results in a remainder of 1, so 3 cannot be the missing digit.

Option D: In the case of 6, the three-digit whole number is 276. Divide 276 by both 3 and 4:

$$276 \div 3 = 92 \text{ (or } 92R0\text{)}$$

$$276 \div 4 = 69 \text{ (or } 69R0\text{)}$$

Dividing 276 by 3 results in a remainder of 0, and dividing 276 by 4 results in a remainder of 0, so 6 is the missing digit.

- 94. (H)** First, determine the missing percentage for “milk and eggs” consumed, based on the circle graph.

$$\begin{aligned}100 - (38 + 10 + 10 + 8 + 4) &= \\100 - 70 &= \\30 &\end{aligned}$$

Then, determine 30% of 1,840 pounds. Multiply:

$$1,840 \times \frac{30}{100} = 552$$

- 95. (C)** The fraction $\frac{191}{2000}$ represents the 191 high school seniors out of 2,000 enrolled in the Honor Society.

To determine the percent, convert the fraction to a decimal. Then, rewrite the decimal as a percent.

$$\frac{191}{2000} = 0.0955 = 9.55\%$$

- 96. (E)** First, determine the total number of visitors.

$$360 + 340 + 210 + 290 = 1200$$

The largest group is 360 (Male Children).

Find the percent that represents $\frac{360}{1200}$.

$$\frac{360}{1200} \times \frac{100}{1}\% = \frac{360}{12} \times \frac{1}{1}\% = 30\%$$

- 97. (A)** First, determine what fraction of the sample were red tiles, given 18 of the 120 tiles drawn were red.

$$\frac{18 \div 6}{120 \div 6} = \frac{3}{20}$$

To predict how many of the actual 40 tiles in the bag are red, multiply 40 by the fraction of red tiles in the sample.

$$\frac{3}{20}(40) = \frac{120}{20} = 6$$

- 98. (G)** First, determine what percentage of the total attendees last year were children.

$$\frac{1,750}{5,000} = \frac{35}{100} = 0.35, \text{ or } 35\%$$

The best estimate based on last year's attendance is 35% of 100.

$$0.35 \times 100 = 35$$

- 99. (B)** The tree diagram shows that each of the 3 randomly selected students is from Classroom A or Classroom B. So the first chosen is either A or B, represented by the left column of the diagram.

The second student is either A or B, so if the first is A, the first two chosen will be either AA or AB. If the first is B, then the first two chosen will be either BA or BB, represented by the middle column.

The third student is either A or B, so if the first 2 were AA, the group of 3 would be either AAA or AAB. These outcomes are represented by the top two boxes of the right column. This pattern is followed so that 8 distinct outcomes can be visualized in order:

AAA, AAB, ABA, ABB, BAA, BAB, BBA, BBB

Since the order does not matter, there are 3 groups made up of 2 students from Classroom A and 1 student from Classroom B: AAB, ABA, and BAA.

Out of 8 possible outcomes, 3 outcomes have 2 students from Classroom A and 1 student from Classroom B. Therefore, the probability is 3 out of 8, or $\frac{3}{8}$.

100. (E) The probability of drawing a red marble at random from a bag of 15 marbles (11 blue and 4 red) is shown:

$$P(\text{Red}) = \frac{4 \text{ red marbles}}{15 \text{ total marbles}} = \frac{4}{15}$$

When the red marble is replaced in the bag, the probability of picking a red marble is unchanged, $P(\text{Red}) = \frac{4}{15}$.

The two events are independent, so the multiplication rule of probability applies.

$$P(\text{Red}) \cdot P(\text{Red}) = \frac{4}{15} \cdot \frac{4}{15} = \frac{16}{225}$$

101. (C) One report is assigned for each of 4 subjects, and each subject has a specified number of topic choices:

- 5 choices for Geography
- 3 choices for English
- 1 choice for Science
- 2 choices for Math

The basic counting principle (product rule) applies since the number of choices for each subject is independent of the choices for the other subjects. The number of different sets of 4 reports possible is the product.

$$5 \times 3 \times 1 \times 2 = 30$$

102. (F) First, determine the number of cards in the remaining deck:

$$52 - 12 = 40$$

Next, determine the number of hearts left in the remaining deck:

$$13 - 3 = 10$$

Last, determine the probability of drawing a heart from the remaining deck:

$$\frac{10 \text{ hearts remaining}}{40 \text{ total cards remaining}} = \frac{10}{40} = \frac{1}{4}$$

103. (A) The flavor most likely to be picked at random is butterscotch, because its probability is the greatest of the probabilities in the list. More than half the candies in the bowl are butterscotch.

104. (E) Apply the properties of equality to solve for w .

$$p = \frac{1}{r}w + f$$

Subtract f from both sides of the equation.

$$p - f = \frac{1}{r}w$$

Multiply both sides by r .

$$r(p - f) = r\left(\frac{1}{r}w\right)$$

$$r(p - f) = w$$

$$w = r(p - f)$$

- 105. (C)** Determine the fraction of undamaged boxes in the sample, given 8 of the 20 boxes are damaged.

$$\frac{20 - 8}{20} = \frac{12}{20} = \frac{3}{5} \text{ or } 0.6$$

Subtract the number of boxes in the sample from 170.

$$170 - 20 = 150$$

Basing the prediction of undamaged boxes on the sample, multiply the number of boxes **not** in the sample by the fraction of undamaged boxes in the sample.

$$150 \times 0.6 = 90$$

- 106. (F)** Solve the inequality $2b + 8 \geq 25$.

$$2b + 8 - 8 \geq 25 - 8$$

$$2b \geq 17$$

$$\frac{2b}{2} \geq \frac{17}{2}$$

$$b \geq 8.5$$

Since the number of baskets made must be a whole number, the fewest 2-point baskets, b , he must make is 9.

- 107. (D)** Let x represent the number of ounces Nadia's letter weighed. The first ounce costs \$0.55, so $(x - 1)$ represents the number of ounces that cost \$0.15 each.

Given that the total cost is \$1.00, the equation that describes the situation can be written and solved as shown.

$$0.55 + 0.15(x - 1) = 1.00$$

$$0.55 + 0.15x - 0.15 = 1.00$$

$$0.15x = 1.00 - 0.55 + 0.15$$

$$0.15x = 0.60$$

$$\frac{0.15x}{0.15} = \frac{0.60}{0.15}$$

$$x = 4$$

So the letter Nadia mailed weighed 4 ounces.

- 108. (E)** The unit rate (cost per orange) can be determined by dividing the cost of x oranges by x .

$$\frac{1.80}{4} = \frac{2.70}{6} = \frac{4.05}{9} = 0.45$$

The unit rate is \$0.45.

109. (A) In this context, the constant of proportionality, p , represents the relationship between b , the number of bottles of water, and n , the number of players on the team.

The number of bottles of water is the product of the constant of proportionality and the number of players.

The equation that represents this relationship is $b = pn$.

110. (F) Subtract to determine the amount of increase in Malik's hourly pay if he changes jobs.

$$12 - 10 = 2$$

Divide the increase amount by the original hourly pay rate.

$$2 \div 10 = 0.2$$

Multiply the quotient by 100 to express the decimal amount as a percentage.

$$0.2 \times 100 = 20$$

111. (C) Set up a proportion to solve:

$$\begin{aligned}\frac{1 \text{ in.}}{2.5 \text{ cm}} &= \frac{x \text{ in.}}{10 \text{ cm}} \\ 2.5x &= 10 \\ x &= 10 \div 2.5 \\ x &= 4\end{aligned}$$

10 centimeters is approximately 4 inches.

112. (F) The constant of proportionality is determined by dividing the number of millimeters by the number of days:

$$\frac{20 \text{ mm}}{8 \text{ days}} = \frac{20}{8} = 2.5 \text{ mm/day}$$

113. (A) The first table is the only one with a constant of proportionality, $\frac{3}{8}$.

In each ordered pair, $\frac{3}{8}x = y$.

$$\frac{3}{8}(0) = 0$$

$$\frac{3}{8}(4) = \frac{12}{8} = \frac{3}{2}$$

$$\frac{3}{8}(8) = \frac{24}{8} = 3$$

114. (F) To find the distance around a circle if the radius is known, use the formula for circumference, $C = 2\pi r$.

$$C = 2(3.14)(5) = 31.4$$

You can read explanations for each answer online here. If you are in Grade 9, you can find examples of additional types of math content you might see on your test here.

Answer Key for Sample Form A

1. A	14. E	27. D	40. H	53. A	66. H	79. B	92. F	105. C
2. G	15. C	28. F	41. D	54. G	67. C	80. F	93. D	106. F
3. B	16. F	29. C	42. E	55. B	68. E	81. C	94. H	107. D
4. E	17. D	30. F	43. C	56. F	69. D	82. E	95. C	108. E
5. A	18. H	31. B	44. G	57. B	70. H	83. D	96. E	109. A
6. F	19. B	32. E	45. A	58. 1.18	71. C	84. G	97. A	110. F
7. A	20. F	33. C	46. E	59. 1.5	72. E	85. D	98. G	111. C
8. F	21. A	34. H	47. B	60. 12	73. C	86. F	99. B	112. F
9. D	22. E	35. B	48. G	61. 3	74. G	87. A	100. E	113. A
10. F	23. C	36. H	49. D	62. 15	75. C	88. F	101. C	114. F
11. B	24. E	37. B	50. F	63. D	76. G	89. C	102. F	
12. H	25. A	38. F	51. A	64. F	77. B	90. H	103. A	
13. C	26. H	39. C	52. H	65. B	78. H	91. C	104. E	