SAMPLE TEST – ENGLISH LANGUAGE ARTS EXPLANATIONS OF CORRECT ANSWERS

REVISING/EDITING PART A

1. The question asks for the revisions that are needed to correct errors in the paragraph.

A. Incorrect. The revisions introduce new errors. The colon after “wonder” is needed to set off the question “what is the difference between the two?” from the rest of the sentence. In addition, changing the verb “is” to “are” would be incorrect with the use of the singular noun “difference,” which is the subject of the question.

B. Incorrect. The revisions introduce new errors. The comma following the introductory phrase “To start with” helps with clarity and is needed to separate the phrase from the rest of the sentence. Changing “it is” to “they are” would be incorrect with the use of the singular noun “butterfat content,” which is what the words “it is” refer to in the sentence.

C. Incorrect. The revisions introduce new errors. The comma following “process” is necessary to set off the nonrestrictive clause “which adds less air to the frozen treat” from the rest of the sentence. This clause is considered a nonrestrictive clause because it provides additional, but not essential, information about the mixing process. Changing the verb “makes” to “make” would be incorrect with the use of the singular noun “mixing process,” which is the subject of the sentence.

D. **CORRECT.** Deleting the comma after “gelato” would include the clause “and allow it to melt more quickly” with the first part of the clause “which enhances the texture and flavor of the gelato.” The word “and” between the two verb phrases (“enhances the texture and flavor of the gelato” and “allow it to melt more quickly”) indicates that the two verb phrases share a subject, “which” (referring to the act of serving gelato 10 to 15 degrees warmer than ice cream). The two ideas should not be separated by a comma within the clause. The entire clause “which enhances the texture and flavor of the gelato and allow it to melt more quickly” should be separated from the main clause only by the comma after “cream” because the entire clause is a nonrestrictive clause. This clause provides additional, but not essential, information about the purpose of serving gelato at a warmer temperature than ice cream. Changing the verb “allow” to “allows” is also necessary to match the use of the singular pronoun “which."

2. The question asks for the **best** way to combine the sentences.

E. Incorrect. Although the sentence incorporates the ideas presented in the three original sentences, it is incorrect because the combination suggests an incorrect relationship between the ideas. By beginning with "Io," the sentence places emphasis on the moon and the detail about the number of active volcanoes rather than the key idea that "scientists now believe that Jupiter may have as many as seventy-nine moons." Since Io is an example of one of Jupiter's moons, the details about Io should follow and be subordinate to the main clause, which provides new information about the number of Jupiter's moons in general.

F. Incorrect. Although the sentence incorporates all three ideas from the original sentences and correctly places the detail about the number of active volcanoes on Io in a dependent clause, this option is incorrect because it presents an imprecise relationship between the ideas. By using the conjunction (connecting word) "and," the sentence construction suggests that scientists "now believe" that "Jupiter may have as many as seventy-nine moons" and that "one of them is named Io," instead of presenting Io as an example of one of Jupiter's moons.

G. CORRECT. This sentence is the best way to combine the original sentences because it uses a complex sentence to present ideas clearly and precisely, and it shows the relationship between the ideas in the original sentences. The sentence starts by stating the number of moons scientists now believe Jupiter may have and then specifies that one of those moons is named Io. The dependent clause "which has the greatest number of active volcanoes in the solar system" immediately follows the word "Io" to provide additional information about the moon. A dependent clause contains a subject ("which," referring to Io) and a verb ("has") but is not a complete sentence on its own.

H. Incorrect. The sentence incorporates the key ideas from the original sentences, but its structure does not accurately present the relationship between these ideas. The beginning of the sentence includes the detail about Io having "the greatest number of active volcanoes in the solar system" before specifying that Io is one of the seventy-nine moons of Jupiter. The presentation of the details about Io at the beginning lessens the emphasis of the key idea that "scientists now believe that Jupiter may have as many as seventy-nine moons."

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

A. Incorrect. There are no errors in sentence 1. The singular pronoun “its” matches the number of the word it refers to, the singular noun ”blobfish.” Additionally, the clause “a creature that certainly resembles its name” is correctly set off by commas to provide an additional, but not essential, detail about the blobfish. The comma separating “pink” and “gelatinous” is correct because these are coordinate adjectives.

B. Incorrect. There are no errors in sentence 2. The singular pronouns “it” and “its” match the number of the word they refer to, the singular noun ”blobfish.” Additionally, the structure of the sentence correctly shows that the clause “Because it has very few muscles and its density is close to that of water” modifies the words “the blobfish.”

C. Incorrect. There are no errors in sentence 3. The “it” and “its” in the sentence refer to “the blobfish” mentioned in the previous sentence. The use of singular pronouns in sentence 3 is consistent with the rest of the paragraph.

D. **CORRECT.** Sentence 4 contains an error because the sentence uses the plural pronoun “them” to refer to “The blobfish’s,” which is singular in number. The word “them” should be changed to “it.” The paragraph refers to the blobfish as a singular species in each of the four sentences, and sentence 4 should be revised to match.

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

E. Incorrect. There are no errors in the structure of sentence 1. The clause “who played in the Long Island area at the time” correctly modifies the noun “New York Nets.” “Who” is the correct relative pronoun to serve as the subject of the modifying clause because it refers to people rather than objects or things.

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

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

H. Incorrect. There are no errors in the structure of sentence 4. The clause “where the team now plays under the name the Brooklyn Nets” is a nonrestrictive clause that provides further detail about the team after its move back to New York in 2012. The clause is set off by a comma because it is not essential to understanding the meaning of the sentence.

REVISING/EDITING PART B

Moving Through Mountains

5. The question asks which sentence should be added to the end of the first paragraph in order to introduce the topic of the passage, which is the description, construction, and use of the Gotthard Base Tunnel.

A. Incorrect. The option is incorrect because it offers information about the funding used to build the Gotthard Base Tunnel but does not provide a description of the tunnel.

B. Incorrect. The option is incorrect because it gives details about the opening ceremony of the tunnel but does not provide a description of the tunnel.

C. **CORRECT.** The option correctly presents and describes the Gotthard Base Tunnel.

D. Incorrect. The option is incorrect because it offers a result of completing the Gotthard Base Tunnel rather than offering an introductory statement presenting and describing the tunnel.

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6. The question asks for a sentence that provides additional details about the tunnel-boring machines used to build the Gotthard Base Tunnel in order to support the description of the machines in sentence 7.

E. Incorrect. The option is incorrect because it offers information about how tunnel-boring machines were an improvement over previous methods but does not include information about how the machines work.

F. **CORRECT.** The option is correct because it offers specific details about how tunnel-boring machines, such as the ones used to create the Gotthard Base Tunnel, drill through rock.

G. Incorrect. The option is incorrect because it presents the idea that the tunnel could not be built until advances were made in tunnel-boring machine technology and does not describe how the machines function.

H. Incorrect. The option is incorrect because, though it explains that there are different types of cutter heads used for different geologies, the geology of the tunnel area is not discussed in sentence 7 or in the rest of the paragraph.

7. The question asks where sentence 11, which completes the detailed steps of how the tunnel was built, should be moved within the second paragraph in order to improve the organization of the paragraph.

A. Incorrect. The option, placing the sentence at the beginning of the paragraph (before sentence 6), is incorrect because it would not make sense since the process of building the tunnel has not yet been introduced.

B. Incorrect. The option is incorrect because placing the sentence after sentence 6 would not make sense given that adding concrete would have to happen after the rock was broken down and removed from the tunnel.

C. Incorrect. The option, placing the sentence between sentences 8 and 9, would be incorrect because the use of concrete did not take place before the removal of "28 million tons of rock" (sentence 9).

D. **CORRECT.** The option, placing the sentence between sentences 9 and 10, is correct because placing the sentence there helps the reader understand the full sequence of steps performed in constructing the tunnel before the cost of the project is introduced.

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8. The question asks which sentence should be removed because it presents an idea that shifts away from the main idea of the third paragraph, which is about the transportation benefits of the Gotthard Base Tunnel.

E. Incorrect. The option (sentence 13) is incorrect because the idea of faster travel times is important to the development of the main idea of the paragraph.

F. Incorrect. The option (sentence 14) is incorrect because the sentence provides a specific example of decreased travel time between two cities when traveling through the Gotthard Base Tunnel, supporting the development of ideas in the paragraph.

G. Incorrect. The option (sentence 15) is incorrect because the sentence compares the Gotthard Base Tunnel to another tunnel that provides an important connection between places; thus, the sentence supports the idea that transportation innovations are beneficial.

H. **CORRECT.** The option (sentence 16) is the correct response because, even though the sentence provides additional information about the Channel Tunnel, it does not help the reader understand the benefits of the Gotthard Base Tunnel.

9. The question asks for a transition that bridges the ideas between sentences 17 and 18 and accurately presents the relationship.

A. Incorrect. The option is incorrect because the use of the word “although” and the mention of freight trains suggest that sentence 18 will be about other types of vehicles that use the Gotthard Base Tunnel, and the transition phrase does not logically precede the sentence.

B. Incorrect. The option is incorrect because the reference to the amount of time it took to build the tunnel does not help lead into the idea presented in sentence 18.

C. **CORRECT.** The option is correct because it bridges the sentences by referring to the Gotthard Base Tunnel as a solution to the problems described in sentence 17 and logically introduces sentence 18.

D. Incorrect. The option is incorrect because it suggests that sentence 18 is related to the increasing number of trains using the Gotthard Base Tunnel, which is not accurate.

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10. The question asks for a concluding sentence that supports key ideas about the topic developed earlier in the passage.

E. Incorrect. The option is incorrect because the economies of surrounding areas are never mentioned in the passage.

F. **CORRECT.** The option is correct because it supports the points made in the introductory paragraph by affirming the idea that the Gotthard Base Tunnel is an example of a way people have improved life by overcoming obstacles.

G. Incorrect. The option is incorrect because, although the construction of the Gotthard Base Tunnel appears to have required many people to work together, the passage does not explicitly mention people or groups working together.

H. Incorrect. The option is incorrect because it focuses on the cost of the Gotthard Base Tunnel, which is referred to only in sentence 10 of the passage.

READING COMPREHENSION

Excerpt from "The World Has an E-Waste Problem"

11. The question asks about the effect of the words “twisted,” “doomed,” and “unrelenting” on the last sentence of paragraph 1.

A. **CORRECT.** Paragraph 1 first describes the problem of discarded devices in terms of the scope of the problem (“about 6 million pounds . . . processed monthly”). The author then elaborates on the problem with a vivid description of the actual process; it is unfortunate that this process is necessary because, even though they are relatively new, these devices are no longer useful. These particular words emphasize the process of a once-useful device becoming a part of a “twisted . . . movie,” and “doomed” to be recycled by going through an “unrelenting” or never-ending conveyor belt.

B. Incorrect. In the excerpt, the author does express concern about the amount of waste from discarded devices, but this particular sentence is about what happens to the devices and the perspective that one has while watching the devices as they are being processed. In this description, the once-beloved devices have been destroyed, with only some useful parts being retained.

C. Incorrect. Although there is an indication in paragraphs 4–6 that some obsolete devices are disposed of inappropriately, this description is of an appropriate disposal—a recycling center developed specifically for these types of devices.

D. Incorrect. At this juncture in the excerpt, the author has not yet mentioned solving the problem of discarded devices; rather, the author is describing what happens to discarded devices that are appropriately recycled.

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12. The question asks how paragraph 2 expands upon the reader’s understanding from paragraph 1.

E. **CORRECT.** Paragraph 1 describes massive amounts of recycling (“about 6 million pounds . . . processed monthly”). Paragraph 2 then explains the underlying reason for so much electronics recycling, using a quote from a resource: “ ‘we always have to have the new, best product,’ ” so we buy new electronic products and “get rid of what’s old.”

F. Incorrect. The trend outlined in paragraph 2 is not one of the past but rather one that is ongoing and even increasing at an alarming rate; in only seven years, American consumers quintupled their spending on “telephone and communication equipment.”

G. Incorrect. While it is true that paragraph 2 presents a statistic about American consumer patterns from 2010 to 2017, the spending on these items does not directly support any claims about waste problems. Specific statistics about waste generation, as opposed to this statistic related only to spending, would better support this type of claim.

H. Incorrect. Although paragraph 2 mentions that consumers “get rid of what’s old” once “we buy something new,” this is merely a statement of fact and not a judgment about this behavior.

13. This question asks for the **best** support from the excerpt for the idea that electronic devices are purposely designed to be disposed of after a short time.

A. Incorrect. This statement actually contradicts the notion that it is the manufacturers who are at fault for designing products to only last a short while, as it suggests that the desire for upgrading electronic devices comes directly from consumers themselves.

B. Incorrect. Though this explains a problem that occurs after the devices have already been upgraded, it provides no support for the idea that these devices are intentionally designed to become obsolete quickly.

C. **CORRECT.** This explains the techniques manufacturers of these devices implement to make the devices unusable after a short time. They cannot easily be repaired; they cannot be integrated with legacy components, and older devices are unable to run with new software.

D. Incorrect. This sentence explains that some people feel that these companies should accept responsibility for creating such short-lived devices, but it does not directly indicate that they intentionally make devices to become useless after only a short time.

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14. The question asks how paragraphs 4–5 develop a central idea of the excerpt.

E. Incorrect. Though "e-waste can contain harmful materials like mercury and beryllium" (paragraph 4) and recycling it "can be dangerous" (paragraph 5), the reluctance of recyclers to take e-waste is not a central idea of the excerpt. The excerpt indicates that some recycling companies, like ERI, take electronics and process many of them.

F. Incorrect. It is true that "only 19 states" have laws about not putting old electronics in the trash (paragraph 5), but these paragraphs do not discuss any other approaches that certain communities across the country have tried to implement.

G. **CORRECT.** These paragraphs highlight problems that already exist and that have been made worse by increasing amounts of e-waste: too much e-waste that is "incinerated or ends up in landfills" and the environmental problems this creates (paragraph 4), as well as the fact that "electronics often end up in garbage and recycling bins" even though they do not belong there (paragraph 5). This develops the central idea in that increasing e-waste is yet another human-made environmental problem that adds layers to the existing problems with too much trash and environmental degradation.

H. Incorrect. There is some indication in these paragraphs that disposing of e-waste creates new and specific problems. However, this is not one of the central ideas of the excerpt, as the problem is more complex than this and involves the design of these devices as well as people's lack of knowledge and willingness to dispose of these devices appropriately.

15. The question asks about the role of paragraphs 7–9 in the overall organization of the excerpt.

A. Incorrect. These paragraphs make proposals for new efforts to regulate electronic waste, such as producing devices that last longer and having device-producing companies pay to have the devices recycled; however, no claims are made about these efforts being successful.

B. Incorrect. Paragraph 7 does suggest that today's devices do not "last as long as they once did," but it does not indicate that in the past electronic devices led to less pollution. Presumably, technology related to electronics recycling has improved in recent years.

C. Incorrect. While it is true that paragraphs 8 and 9 suggest that electronics manufacturers, who are part of the problem, will also need to be part of the solution, there is no call for regulations in these paragraphs, as it was previously established in paragraph 5 that such regulations do not yet widely exist.

D. **CORRECT.** Paragraph 6 references consumers who may be "paralyzed by the hassle or put off by the expense" and thus do not recycle their devices correctly. Paragraphs 7–9 then shift the focus from individual consumer behaviors to the responsibility of the manufacturers of these devices, who might take action either by making their devices "last as long as they once did" (paragraph 7) or by making efforts to "recycle or collect obsolete products" (paragraph 8).

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16. The question asks how a point about the ineffectiveness of e-waste regulations is conveyed in the excerpt.

E. Incorrect. Paragraph 5 indicates that "only 19 states have laws banning electronics from the regular trash," but this statistic does not reveal how effective or ineffective these regulations are.

F. **CORRECT.** Paragraph 6 explains that "even when e-waste rules exist," it is possible consumers will not follow them, because they have to return their electronics to a store and could be charged. Because it is such a "hassle," they will "simply throw their devices into the trash or stash them in a drawer, hoping they'll just disappear" (paragraph 6).

G. Incorrect. While stores may charge people "to get rid of" old devices (paragraph 6), the fee will simply cover expenses incurred by the store to properly dispose of the devices. Stores could actually succeed in getting some devices recycled appropriately, but overall, the excerpt states that consumers' frustration over the process means most are discarded improperly (paragraph 6).

H. Incorrect. Paragraph 9 explains that "some companies are increasing their recycling efforts on their own," but this does not mean that regulations are ineffective, only that some manufacturers are taking action even without regulations.

17. The question asks how the diagram after paragraph 9 supports the claim in paragraph 4 about environmental risks from e-waste.

A. Incorrect. The diagram includes an image of people as well as an "unlined landfill," but it contains no information about the volume of e-waste that people place in the landfill. Rather, it seeks to show how waste in landfills impacts the environment in a broader sense through "air emissions" and "groundwater" contamination.

B. **CORRECT.** The diagram shows that toxic chemicals that are placed into an "unlined landfill" can produce "air emissions" that may affect rain and trees. These toxic chemicals may also seep into the soil and then, eventually, into the "groundwater" and "surface water."

C. Incorrect. While it is true that the landfill in the diagram is labeled an "unlined landfill," which presumably would allow more pollutants to seep into the soil, no claim is made in paragraph 4 about landfill design.

D. Incorrect. The diagram shows that water sources near landfills are at risk of pollution by anything in the landfill, but the diagram makes no mention of e-waste in particular.

Excerpt from *The Highest Tide*

18. The question asks what idea the phrase "the butterflies of the sea" in paragraph 3 conveys.

E. Incorrect. While the narrator does say that they "taste so lousy they don't need camouflage to survive" (paragraph 3), the phrase explains that their bright appearance poses no threat to their lives.

F. **CORRECT.** The narrator describes the vibrant colors of the nudibranch in paragraph 2. Then in paragraph 3, the narrator says that "their beauty is so startling." The nudibranchs are colorful and unique, just as many butterflies are.

G. Incorrect. The narrator describes the distinct appearance of the nudibranch but does not suggest that nudibranchs struggle to adapt to their environment because of this trait.

H. Incorrect. In paragraph 2, the narrator states, "I'd handled them at aquariums but never in the wild, and I'd never even seen a photo of one this stunning." Although this suggests that the narrator has rarely encountered a nudibranch in the wild, it does not suggest that they are rare in the wild in general.

19. The question asks for an explanation of how selected sentences from paragraph 4 contribute to the overall structure of the excerpt.

A. Incorrect. These sentences set a tense and mysterious tone for what is about to happen in the excerpt, but they do not introduce the creature the narrator discovers.

B. Incorrect. While the narrator reveals that he is familiar with the terrain ("I knew exactly what the bars looked like in the moonlight"), this does not show the narrator recalling the past or reflecting on the present; it demonstrates the narrator's knowledge of the mudflats.

C. Incorrect. These sentences reveal the narrator's curiosity, which is his prime motivation for venturing out to the mudflats, and his familiarity with the terrain shows that at this point, he does not feel afraid.

D. **CORRECT.** The narrator creates a feeling of mystery and suspense with language that shows how the situation is unknown. Phrases such as "I couldn't resist" and "I'm not sure why" reveal the narrator's curiosity, as well as the tension of feeling drawn to explore the mudflats in the moonlight.

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20. The question asks which sentence from paragraph 5 supports the idea that the narrator is taking a risk.

E. Incorrect. In this sentence, the narrator is describing the exhale of a creature and his concern that the sound might be coming from a whale in danger. At no point does the narrator suggest that this is a dangerous situation.

F. Incorrect. This sentence describes a "hulking silhouette" because the narrator is searching for a whale that might be stranded. This expression refers to the size of the whale and not to any danger the narrator might face.

G. Incorrect. The narrator's words "no more sounds" are used to illustrate his listening for what may be a whale. At this point, the narrator is still concerned about the possibility that a whale may be stranded, not the possibility of being in danger.

H. **CORRECT.** The idea that the narrator could become stuck in the mud of the flats means that the surroundings pose some danger or difficulty.

21. The question asks how the narrator's actions, as described in the sentence from paragraph 6, develop a central idea of the excerpt.

A. Incorrect. The sentence highlights the narrator's concern about sea life and the creatures living within the flats. However, these ideas do not develop what is being described in the excerpt.

B. **CORRECT.** The narrator "kept stepping toward the one sound," indicating a sense of curiosity. However, the words "a growing part of me hoping I'd find nothing" suggest a rising fear or concern. Ultimately, the narrator's curiosity outweighs his growing fear and is a central idea in the excerpt, as shown by the fact that the narrator does not run away when finally encountering the creature.

C. Incorrect. While the narrator's descriptions of the nudibranch and other sea life demonstrate a knowledge of these creatures, as well as a desire to discover more in the mudflats, the knowledge the narrator exhibits is not what is being illustrated in the excerpt.

D. Incorrect. The excerpt does describe the narrator's enjoyment at seeing a nudibranch in paragraph 2, and in paragraph 4, the narrator clearly states that there is an abundance of life in the seemingly barren mudflats, including "hearty clams, worms and tiny creatures that flourish in mud." However, the sentence demonstrates the narrator's curiosity in spite of fear, not an eagerness about or fascination with the mudflats.

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22. The question asks what the sensory language in the sentences from paragraph 8 conveys about the narrator.

E. Incorrect. While the narrator does not leave the mudflats and is curious about what has been found, the main emotions described in paragraph 8 are fear and confusion as the narrator tries to comprehend the size of the animal.

F. Incorrect. The language focuses on the narrator's inability to organize what he sees into useful thoughts and conclusions, and while the narrator feels fear in paragraph 8—"I was afraid" and "I would have run"—the narrator refuses to leave the mudflats out of curiosity.

G. **CORRECT.** The phrase "spangled my vision" illustrates that the narrator cannot fully recognize what has appeared on the mudflats. The sight is so amazing, the narrator is trying to "fuse" together "fragments" and "pieces" because seeing the creature has created so much emotion in the narrator that he feels confused.

H. Incorrect. While the narrator is feeling some fear, as expressed in paragraph 8, the phrases actually indicate that the narrator's amazement causes him to struggle to take in the view of the creature before him.

23. The question asks how the author develops the narrator's point of view when the narrator sees the creature.

A. Incorrect. The author's description of how the narrator moves toward the creature has to do with the terrain and the narrator's sense of awe. The narrator's perspective is not represented through how he approaches the creature; it is presented later in the excerpt when the narrator is studying the creature.

B. Incorrect. In this excerpt, while the narrator does discuss other large animals (minke whale, paragraph 5; octopi, paragraph 7) that have appeared on the mudflats, these are examples to show the variety of animal life that can be discovered on the mudflats, not rivals of the creature discovered at the end.

C. **CORRECT.** In paragraph 7, the narrator describes the largest octopi in the world and then states that this creature is "more than an octopus." The narrator then states that it is "impossible to hear anything over the blood in my ears," and in paragraph 8, he describes the creature's body in detail, as well as his growing fear and amazement as he begins to realize what the creature really is.

D. Incorrect. While the narrator observes that the creature's eye is as large as a hubcap in paragraph 9, a comparison to an entire car is never made. This detail is for description but does not give the narrator's point of view.

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24. The question asks how the setting affects the plot of the excerpt.

E. **CORRECT.** In paragraph 4, the narrator says that it is an hour before sunrise. It is difficult to see because the mudflats are dark, so the narrator, while familiar with the terrain of the mudflats, is cautious.

F. Incorrect. While the terrain of the mudflats is challenging because of the "wet, flattened dunes" (paragraph 4), the narrator is familiar with the terrain and moves carefully. In addition, the excerpt shows that the narrator explores the mudflats for curiosity and enjoyment, not work.

G. Incorrect. In paragraph 1, the narrator watches the water "hesitating at its apex" and "patiently waiting for the gravitational gears to shift." This illustrates that the narrator is already familiar with the changes in his surroundings, that the tide is slow to move in, and that he can move carefully through the mudflats without the threat of rising water.

H. Incorrect. While the narrator is on the mudflats for the entire excerpt, the phrase "eyes relaxed" in paragraph 1 indicates that the narrator feels comfortable there. The narrator does not show fear until paragraph 6, when a growing fear about the unknown creature arises.

Going Solar in China

25. The question asks for an explanation of the effect of two phrases in paragraph 1 that describe the solar panels on the lake.

A. Incorrect. The phrases describe the size of the solar panels, but they do not provide any information about the amount of energy that the solar panels produce in relation to the size of the solar farm.

B. Incorrect. Despite the descriptions of the size of the solar-power farm, the phrases quoted do not indicate how much power is produced by the farm or how much energy is required by the surrounding area.

C. Incorrect. The description of the floating solar panels on the "rippling surface of a lake" provides a sense of the landscape, but it does not necessarily suggest that the solar panels blend into the landscape.

D. **CORRECT.** The number of solar panels suggests that the solar farm produces a great deal of energy, and the description of the solar panels floating on the lake shows that the solar farm is in a unique or unusual location.

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26. The question asks for the author's purpose in including statements from Dajie in paragraphs 2 and 7.

E. Incorrect. In paragraph 2, the author explains that Dajie previously had a job in a coal mine, and his statement compares the two jobs. The paragraph does not focus on jobs as a major benefit of the solar-energy industry.

F. Incorrect. In paragraph 2, the author explains why the solar farm was built in this particular location by detailing how the coal mine was flooded and a lake was created. This particular event does not provide an explanation of why coal is being replaced by solar energy, and the conditions in the mine described by Dajie in paragraph 2 were not a factor in the switch from coal to solar power.

G. **CORRECT.** The description of the working conditions in the mine that Dajie provides in paragraph 2 shows that improved working conditions are a benefit of the change from coal to solar power. In paragraph 7, Dajie's statement suggests that the change is a better use for the land and also that it will "create a better future." These statements address the benefits of solar power that are not related to economics.

H. Incorrect. Dajie's statement that the coal mine was hot and dangerous is used to emphasize the difference between the two power sources, but it is not used to suggest that more solar farms should be built. Although, in paragraph 7, Dajie expresses gratitude about the solar farm and its role in creating "a better future," he does not explicitly call for creating more farms in the province.

27. The question asks how paragraph 2 contributes to the development of ideas in the article.

A. Incorrect. The details in paragraph 2 explain how the coal mine was flooded and later turned into a solar farm. Dajie's experience is used to highlight the differences between the two forms of energy, but the transition from coal to solar and the differences between the two, rather than Dajie, are the focus of the paragraph.

B. **CORRECT.** Dajie's comparison of the coal mine and the solar farm is used to highlight the improved working conditions for energy workers, and the last two sentences of the paragraph describe the air pollution created by coal power and explain the environmental benefits of solar power. Therefore, this paragraph shows how transitioning from coal to solar power benefits both workers and the environment.

C. Incorrect. The first sentence of the paragraph explains how the lake was formed, but the reasons the location was chosen by the energy company are not a central idea of the article or the paragraph. The paragraph focuses on the advantages of solar power compared with coal power.

D. Incorrect. Although the author does explain how the area was affected by a flood at a coal mine that created a lake, the process of the lake becoming a solar farm is not a central idea of the paragraph. Instead, the paragraph focuses on the differences between the mine and the solar-power farm.

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28. The question asks for an explanation of how the structure of paragraphs 4–5 contributes to the development of ideas.

E. Incorrect. While paragraph 5 does explain that the cost of solar panels declined as manufacturers increased production to meet demand, the chronological structure does not specifically detail how the businesses lowered the cost of solar energy over time.

F. Incorrect. While paragraph 5 states that "In order to make manufacturing a profitable industry again, the Chinese government offered its own financial incentives to Chinese citizens for using solar energy," this occurred only after there was a surplus of solar panels in China. Overall, the article does not explain or detail the Chinese government's role in the solar-energy industry, specifically the government's response to the international demand discussed at the end of paragraph 4.

G. **CORRECT.** The author uses a chronological structure to show how Chinese businesses responded to the growing demand for solar power after first being uninterested in it. The author goes on to explain how the Chinese government took an interest in solar power and began promoting it to help Chinese businesses. This shows a change over time in the Chinese approach to solar power.

H. Incorrect. Although the paragraphs do suggest that the manufacturers improved their efficiency to meet demand, the chronological structure does not specifically show how the manufacturers changed and improved their processes.

29. The question asks how the details in paragraph 6 convey a main idea of the article.

A. Incorrect. The details in paragraph 6 help explain that China has a goal of increasing its use of solar power, but there is no information in the paragraph to suggest that the Chinese government wants to make China a world leader in solar energy. The only goal discussed is the government's goal to use renewable energy sources to meet 20 percent of the country's energy needs by 2030.

B. **CORRECT.** The discussion of a second solar farm and the government's goal to increase its reliance on "low-emission power plants" shows that the Chinese government understands the benefits of solar energy and other renewable energy sources.

C. Incorrect. Paragraph 6 addresses the Chinese government's focus on increasing its use of renewable energy and low-emission power. The topic of excess solar panels is not discussed in paragraph 6; instead, the topic is mentioned in paragraph 5.

D. Incorrect. The paragraph explains that the goal of the Chinese government is to increase the use of renewable energy so that 20 percent of the country's power comes from such sources by 2030. However, this goal would not make solar power the main source of energy in China.

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30. The question asks how the article illustrates China's role in the growth of global solar-energy use.

E. Incorrect. In paragraphs 4 and 5, the author explains that Chinese businesses manufactured solar panels to meet demand from European countries; however, the paragraph does not specify that those countries used the panels in solar-power farms.

F. Incorrect. Although paragraph 4 does explain the early use of solar power in China, the paragraph only explains the developing Chinese business of making solar panels. It does not suggest that solar-power use in China, as opposed to solar-power use in other countries, demonstrated that solar power could replace other energy sources.

G. Incorrect. In paragraph 5, the author explains how the Chinese government offered incentives for its own citizens to promote solar energy, but this action served only to increase solar-power use in China. No connection is made between the incentives offered to Chinese citizens and the global increase in solar-power use.

H. **CORRECT.** Paragraphs 4 and 5 explain how growing demand for solar power encouraged China to improve manufacturing; this "lowered the worldwide cost of using solar energy by 80 percent" (paragraph 5). The affordability of solar energy contributed greatly to the increased global use of that energy source.

31. The question asks how the author's purpose is conveyed in the article.

A. **CORRECT.** Throughout the article, the author provides details about the positive outcomes of China's focus on solar and renewable energy. In paragraph 2, the author discusses the improvements in working conditions and the environmental benefits of renewable energy, and in paragraphs 4 and 5, the author focuses on how Chinese businesses benefited from producing solar panels. In paragraph 6, the author discusses the increase in China's use of solar and renewable energy before concluding in paragraph 7 that this change will create a better future.

B. Incorrect. Based on paragraph 4, the demand for solar power was initiated by countries such as Germany, Spain, and Italy. China responded to these demands but did not influence the other countries to use solar power.

C. Incorrect. While the author does discuss China's use of coal power, the author focuses on the developments regarding solar power in China rather than on other forms of energy.

D. Incorrect. The author does explain that Chinese businesses became interested in solar power for financial reasons, but the author does not focus on the economic benefit or impact of solar power on China. Instead, the author focuses on the other benefits of solar and renewable energy.

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32. The question asks how the details about other countries in paragraph 4 help develop a central idea of the article.

E. **CORRECT.** The different countries are mentioned in paragraph 4 to explain how the actions of these countries increased the demand for solar panels. As a result, Chinese businesses increased their production and then improved their production methods to become more efficient to meet the demand.

F. Incorrect. The author explains that the governments of these countries offered incentives for people to use solar power, but the actions of these countries do not show a global need for solar power.

G. Incorrect. The discussion of the European countries focuses on the actions taken by the governments to encourage the growth of solar power in their own countries, but it does not suggest that the countries were competing with one another.

H. Incorrect. Although China created a solar-power farm in an unusual place, there is no information provided about how solar-power farms were constructed in other countries.

Excerpt from "How Exercise Could Help You Learn a New Language"

33. The question asks how the author's use of comparison in paragraphs 4 and 5 contributes to the development of ideas in the excerpt.

A. Incorrect. Paragraph 5 does not claim that adults are never able to learn a second language, only that "it becomes harder to learn a second language after childhood."

B. Incorrect. The issue of physical activity is never addressed in these paragraphs. They compare the relative ease with which children and adults learn languages.

C. Incorrect. Paragraph 4 does not claim that more is known about language learning in children; in fact, it says that children simply absorb language easily and does not attempt to explain how.

D. **CORRECT.** Because adult brains lose the "innate language capability" of children and have less plasticity when it comes to language learning, the study chose to focus on adults and how exercise might help them learn new languages.

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34. The question asks how the first sentence from paragraph 6 functions in the overall structure of the excerpt.

E. Incorrect. While paragraph 6 begins to describe how the study was carried out, the results of the study have not yet been discussed in previous paragraphs.

F. Incorrect. The population used for the study is an important detail that helps describe who participated in the study, as well as an ideal situation (college-age people trying to learn a new language), but this is not critical information used to determine the results.

G. **CORRECT.** While paragraphs 4 and 5 address why the study focuses on adult language learning, the first sentence of paragraph 6 begins to give details about how the study was conducted, including describing the population being studied: "40 college-age Chinese men and women who were trying to learn English."

H. Incorrect. The sentence from paragraph 6 does not include examples or discuss questions for further research; it simply introduces the subjects recruited for the study.

35. The question asks why the researchers in the excerpt asked the English learners to assess whether the new words made sense in the context of actual sentences.

A. **CORRECT.** As stated in paragraph 11, “Most linguists feel that understanding sentences shows greater mastery of a new language” than mere memorization of new words, so the researchers realized that asking learners to assess words in context would be a better measure of how well they learned the new words.

B. Incorrect. The excerpt never addresses how earlier research on adult language learners was conducted.

C. Incorrect. Having learners respond to the new words in context was used not as a teaching tool but rather to assess learners’ mastery (paragraph 11).

D. Incorrect. The excerpt describes how proficiency at assessing words in context began to emerge “after several weeks of instruction” (paragraph 14) and never suggests that the task became more difficult after an extended period of time.

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36. The question asks which evidence from the excerpt is **most** relevant to the author’s claim that there are many unanswered questions about the relationship between movement and learning.

E. **CORRECT.** While the study revealed that the college students who used exercise bikes did better in their language learning, paragraph 18 indicates that we cannot know “whether other people completing other types of exercise would achieve the same results,” suggesting that there are many unknowns about the relationship between movement and learning.

F. Incorrect. Rather than supporting the claim that there are many unanswered questions about the relationship between movement and learning, this statement offers a possible explanation as to why exercise might help learning.

G. Incorrect. The finding that exercise helps people retain their language learning longer (paragraph 15) adds to our understanding of the relationship between movement and learning rather than supporting the claim that there are still many unanswered questions.

H. Incorrect. Dr. Sulpizio’s statement that the study suggests that “ ‘instruction should be flanked by physical activity’ ” (paragraph 21) does not in any way address the issue of unanswered questions about movement and learning.

37. The question asks which sentence from the excerpt **best** supports Dr. Sulpizio's assertion in paragraph 17 that exercise went beyond helping with memorization to deepen the language learners' ability to use new vocabulary.

A. Incorrect. This sentence merely describes what the language-learning sessions were like without making any claims about how the exercise affected the subjects' understanding of how to use new words.

B. Incorrect. While this sentence does address the fact that learners were required to think about how the new words should be used rather than just memorizing the words, it does not discuss results such as how the exercise affected their ability to do this.

C. Incorrect. This sentence establishes only that exercise helped with the memorization of new words, not that exercise deepened learners' grasp of how to use the new words.

D. **CORRECT.** The fact that learners who exercised were better at identifying when the new words were used correctly in sentences directly supports Dr. Sulpizio's assertion that the exercise deepened their grasp of how to use the new words.

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38. The question asks what paragraph 18 reveals about the author's perspective toward the study in the excerpt.

E. **CORRECT.** As paragraph 18 says, the study cannot address "whether other people completing other types of exercise would achieve the same results" as college students riding bikes.

F. Incorrect. While paragraph 18 mentions that the students performed "relatively light exercise," it never suggests that more rigorous exercise should have been studied, only that it is still unknown what the impact on language learning would be for other populations doing other types of exercise.

G. Incorrect. Paragraph 18 points out only that the study's results cannot be generalized to other populations performing other types of exercise and never speculates on whether the study's results could be duplicated.

H. Incorrect. Far from claiming that the study's results could be applied more broadly to learning in general, paragraph 18 points out the ways in which the study's results cannot be applied more broadly.

39. The question asks for the **best** summary of the research procedure used in the study in the excerpt.

A. Incorrect. This summary says that students learned new words by matching words and images and "also by analyzing words in context," but this last method was how the researchers assessed students, not how the students learned words; the summary is therefore inaccurate.

B. **CORRECT.** The summary includes the most important information, which is that one group of non-English-speaking students exercised before and during the English lessons, while the other group did not, and that the students' learning was assessed afterward.

C. Incorrect. This summary is incomplete because it never mentions the control group—that is, the students who studied English without exercising—which was essential to the study so that results could be compared.

D. Incorrect. This summary includes unnecessary details, such as that students were assessed after a short break and also assessed after a month of no studying; it also neglects to mention important points: that one group exercised both before and during learning, while the other group did not exercise at all.

Looking for the Smallest Spark in Everything

40. The question asks what lines 5–8 reveal about the speaker to help develop a central idea of the poem.

E. Incorrect. In lines 5–8, the speaker is demonstrating knowledge about the structure of matter, not demonstrating interest in how matter's parts work together; for example, "beneath the level of molecules are atoms, / and beneath the level of atoms, we find / protons, electrons, neutrons" (lines 5–7).

F. **CORRECT.** Lines 5–8 show the connection between the particles by using the words "beneath the level" repeatedly. The progression of particles of matter, from atoms to subatomic particles, "protons, electrons, neutrons" (line 7), ends with a question. By asking, "what, exactly?" (line 8), the speaker questions the mysteries that are still unsolved about the nature of matter, which is a central idea of the poem.

G. Incorrect. The speaker expresses curiosity in line 8 ("what, exactly?") but does not use language in lines 5–8 that expresses a desire to prove a point. The poem does not show any conflict, either from within or from other scientists, about the concept that particles make up matter.

H. Incorrect. While the poem is about the Large Hadron Collider, which, according to the introductory text before the poem, is a tool that "helps scientists study and understand how the smallest particles of matter interact with one another," lines 5–8 do not suggest the use of tools but rather question what comes after the "protons, electrons, neutrons" (line 7).

41. The question asks how the break between the second stanza (lines 5–14) and the third stanza (lines 15–26) serves as a transition between ideas.

A. **CORRECT**. The second stanza describes physical objects, including "your fingernail, / the candy at the back of your mouth, / the coffee your teacher drank this morning" (lines 9–11) and even "the stuffed dog" that "your little sister" (line 12) carries around. In the third stanza, the speaker introduces the topic of observation by asking, "How do we find it?" in line 17. Lines 17–18 offer one possible method for finding "it" ("We can listen for it / in the wavelengths from deep space"), while lines 20–22 describe a second method ("Or we can build long, / deep circular tunnels beneath the surface / of this Earth and race particles"). With these details, the focus of the poem shifts toward explaining how the particles that make up everything are observed.

B. Incorrect. While the speaker does list common items such as "candy" and "coffee" (lines 10–11) that many people are familiar with and that seem to be simple in composition or structure, the speaker does not imply in the third stanza that invisible objects complicate the world. In fact, the speaker claims that everything is "made up of the same stuff" (line 16), which simplifies the invisible world.

C. Incorrect. The second stanza focuses on the structure of matter ("beneath the level of molecules are atoms, / and beneath the level of atoms, we find / protons, electrons, neutrons" [lines 5–7]) and does not discuss the methods used to explore this structure in space. The third stanza mentions space ("We can listen for it / in the wavelengths from deep space" [lines 17–18]) and how we can "race particles" (line 22) on Earth but does not compare the methods of study used in these different locations.

D. Incorrect. While the second stanza describes items that are familiar to readers, including "your fingernail, / the candy at the back of your mouth, / the coffee your teacher drank this morning" (lines 9–11), the familiarity of these items does not necessarily mean they are part of a comfortable environment. The third stanza discusses studying the parts of matter "until everything we think we know / bangs against everything else we know" (lines 25–26). The "banging" the speaker refers to is not related to an unstable environment but rather to the mysteries of atomic structure.

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42. The question asks what the comparison in lines 23–24 of the poem is mainly meant to show.

E. Incorrect. While the particles are moving "close to the speed of light" (line 24), which would make them difficult to see, the comparison in lines 23–24 focuses on the movement of the particles, not how visible they are.

F. **CORRECT**. Lines 23–24 describe "tiny cars / flashing along at close to the speed of light," which describes how the particles move.

G. Incorrect. Lines 23–24 do not describe the shape of the particles but rather their movement, which is "flashing along at close to the speed of light" (line 24).

H. Incorrect. The word "flashing" in line 24 does not refer to light in darkness but rather to speed, and the word "light" is used to reference a measurement of speed, not brightness in darkness.

43. The question asks how lines 25–26 help develop a central idea in the poem.

A. Incorrect. Lines 25–26 illustrate the collision of old and new information about particles, but they do not describe "creative methods" that are currently being invented to research subatomic particles.

B. **CORRECT.** The lines "until everything we think we know / bangs against everything else we know" (lines 25–26) are about how the old knowledge about particles interacts with newfound knowledge

C. Incorrect. While lines 20–22 describe the Large Hadron Collider as "long, / deep circular tunnels beneath the surface / of this Earth" where scientists "race particles," lines 25–26 refer to the collision of old and new ideas about particles, not the limitations of the Large Hadron Collider.

D. Incorrect. Lines 25–26 focus on what "we think we know" about subatomic particles and how new discoveries challenge "everything else we know." However, the challenge is not a result of scientists debating one another but rather what the Large Hadron Collider reveals about particles.

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44. The question asks what the imagery in lines 27–28 reveals about the speaker.

E. Incorrect. The physicists mentioned in the fifth stanza (lines 33–44) are described as mere observers: they "jot down / what they can" (lines 41–42). In lines 27–28, the speaker is focused on the reaction between the colliding particles, not on the physicists who study them.

F. Incorrect. The speaker describes the particle collision in detail, but the text does not imply that the speaker has personally witnessed a collision. The speaker implies that his or her understanding of the collision is based on the experiences of the physicists observing the phenomenon ("They spin, and it is only
down there / in the darkness—in the vast garage / where physicists jot down / what they can, whatever seems most real— / that they let us perceive their wild dancing" [lines 39–43]).

G. **CORRECT**. The word "explosion" and the phrase "briefly incandescent" create a picture of rapid changes and short bursts of bright light, revealing how powerful the new particles are. The language the speaker uses is positive, revealing that the speaker admires the power of the reaction and stands in awe of the new particles.

H. Incorrect. The poem reveals the speaker's deep knowledge about subatomic particles. For example, the speaker is able to name the new particles discovered—"the quarks, the leptons, and the bosons; / the baryons and the mesons" (lines 29–30)—and is able to use imagery to create a powerful picture that reveals the complexity of a scientific process that humans have never been able to see.

45. The question asks why the speaker refers to familiar objects and events in lines 30–32.

A. Incorrect. In lines 30–32, the speaker only gives an opinion about what the names sound like and does not simplify confusing information about how these newly discovered particles function or exist.

B. Incorrect. In lines 30–32, the speaker is only describing what the names of the particles sound like: "dinosaurs or maybe bands" (line 31). These descriptions illustrate the speaker's opinion but do not explain specific scientific ideas.

C. Incorrect. In lines 30–32, the mention of the names of the particles sounding like "dinosaurs or maybe bands" (line 31) reveals the speaker's opinion about the names but does not explain the process of researching the particles.

D. **CORRECT**. The phrase "their names" (line 30) refers to the scientific names of the particles: "the quarks, the leptons, and the bosons; / the baryons and the mesons" (lines 29–30). In lines 30–32, the speaker expresses the opinion that these scientific terms sound nonsensical, much like the strange scientific names of dinosaurs or silly band names.

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46. The question asks for the **most likely** reason the poet includes lines 36–39 in the poem.

E. Incorrect. While the poem implies that the research is important, lines 36–39 do not point to a need for more research. Instead, the lines explain the power of the particles in the universe.

F. **CORRECT**. The particles that are "Everything and everywhere" (line 15) make up the objects mentioned in lines 36–39: a "pencil in your hand" and the planet "Jupiter." Even though these objects are different from each other and extremely far apart in the universe, they are made up of and affected by these particles. The "powerful effect" is that the particles keep the objects "both together and apart" (line 36).

G. Incorrect. While the physicists can only "jot down / what they can, whatever seems most real" (lines 41–42), the discoveries about particles are ongoing and informative. The speaker shares that the particles are "everything and everywhere" (line 15) and that they "spin" (line 34) because "this is how gravity / enters our world" (lines 34–35).

H. Incorrect. The speaker states that particles keep together objects in space, such as Jupiter, as well as objects on Earth, such as "the pencil in your hand right now" (line 37). However, in lines 36–39, the speaker is not comparing the study of subatomic particles with the study of objects in space (astronomy); the speaker is implying that because particles are "everything and everywhere" (line 15), the study of particles affects our understanding of everything in the universe, regardless of location.

47. The question asks which central idea is emphasized in the last stanza (lines 33–44).

A. **CORRECT**. Throughout the poem, the speaker describes how everything in our universe and in our everyday lives is made up of these tiny particles. The last stanza allows us to picture the scientists working "in the darkness" (line 40), jotting down notes. Phrases like "wild dancing" (line 43) and "combusting to the music" (line 44) describe the activity of the particles and communicate the idea that the findings are exciting.

B. Incorrect. While the Large Hadron Collider is in an unconventional location that is important in the poem, it is the only location described in the poem: "it is only down there / in the darkness—in the vast garage" (lines 39–40). While the darkness is a special condition, the poem does not describe other conditions where the same type of research is being carried out. The poem does mention that "we can listen for it / in the wavelengths from deep space, / talking back to us from unimaginable / distances" (lines 17–20), but this description implies the use of a tool (a satellite), not a location.

C. Incorrect. The last stanza states that "The one thing we know for sure / is that they spin" (lines 33–34). This detail is one aspect of the particles' behavior that is known; therefore, the particles are not completely unpredictable. In addition, the poem never describes the particles breaking up matter in the universe; the poem describes only their movements and collisions.

D. Incorrect. While the "physicists jot down / what they can, whatever seems most real" (lines 41–42), the research they share with the world is complicated and difficult to understand, making it unlikely that their findings are relatable to most people.

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48. The question asks what lines 39–44 reveal about the speaker.

E. Incorrect. While the discoveries are made "in the darkness" (line 40), the imagery conveys the speaker's positive tone through descriptions like "perceive their wild dancing" (line 43) and "combusting to the music they make" (line 44), not frustration.

F. Incorrect. In lines 39–44, the imagery of energetic movement ("They spin," "their wild dancing," and "combusting to the music they make") is used to describe the particles, not the physicists.

G. **CORRECT**. The speaker uses the phrases "only down there" (line 39), "physicists jot down ... whatever seems most real" (lines 41–42), and "they let us perceive" (line 43) to convey that the physicists have a rare role in studying the mysteries of the universe and that the speaker appreciates and is interested in their work.

H. Incorrect. While the description of the experiments occurring "in the darkness" (line 40) may create a sense of secrecy, the secrets that the darkness refers to are the mysteries of subatomic particles, not the work processes that the physicists use.

Excerpt from "Impressions of an Indian Childhood"

49. The question asks how the phrases “cool morning breezes swept freely” and “wafting the perfume of sweet grasses” affect the tone of paragraph 1 in the excerpt.

A. Incorrect. Although the author describes in paragraph 1 the setting of her childhood experiences, the positive wording of the phrases the author uses in the paragraph (“swept freely” and “perfume of sweet grasses”) does not suggest a tone of sadness the author feels when she reflects on her former way of life.

B. Incorrect. Although the phrases “cool morning breezes swept freely” and “wafting the perfume of sweet grasses” used in paragraph 1 create a positive tone, the phrases do not suggest an enthusiasm for the author’s work but rather an appreciation of the peaceful beauty of her childhood.

C. **CORRECT.** In paragraph 1, the phrases “cool morning breezes swept freely” and “wafting the perfume of sweet grasses” are used to describe where the author’s childhood experiences took place. The phrases create a tone of fondness and evoke a feeling of happiness through their lyrical sensory detail: “swept freely” suggests a sense of joyful possibility, while “perfume,” “sweet,” and “cool” convey delight.

D. Incorrect. Although the author describes her mother's beadwork lessons as “confining” in paragraph 7, the phrases in paragraph 1 do not suggest that the author feels conflicting or mixed emotions toward her work and her mother. Instead, the phrases convey a positive tone by affectionately describing the author’s childhood home.

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50. The question asks what the phrase “just as an artist arranges the paints upon his palette” in paragraph 2 suggests in the excerpt.

E. **CORRECT.** In paragraph 2, by comparing the way her mother arranges the beads to the way a painter “arranges the paints upon his palette,” the author emphasizes that her mother approaches her craft just as a painter does, thus suggesting that beadwork is a true form of art.

F. Incorrect. Although the author mentions “bunches of colored beads” in paragraph 2, this detail does not provide enough evidence for the idea that color inspires beadworkers. The phrase “just as an artist arranges the paints upon his palette” indicates the connection of beadwork to other forms of art in general, not necessarily to the specifics of color as a source of inspiration.

G. Incorrect. In paragraph 2, the author describes her mother “untying the long tasseled strings” and then spreading “upon a mat beside her bunches of colored beads.” However, the phrase “just as an artist arranges the paints upon his palette” does not suggest that all artistic activities begin with a series of steps. There is no mention in the passage of any other artistic activities involving multiple initial steps.

H. Incorrect. In paragraph 2, the author describes how her mother “spread upon a mat beside her bunches of colored beads” as the first step in the artistic process described in the passage. Therefore, the comparison between the mother’s process and a painter arranging paints on a palette suggests that the mother is creating art, not imitating it. There is no indication that the mother is copying a technique she has seen in other art forms.

51. The question asks how the author's use of sequence in paragraphs 1 and 2 contributes to the development of ideas in the excerpt.

A. Incorrect. In paragraph 2, the author does list the steps her mother takes in preparation to do beadwork, such as "untying the long tasseled strings" of the bag of beads, spreading the beads beside her on a mat, and using "a long, narrow blade" to trim the buckskin into shape. However, the language used to describe this sequence does not indicate that preparing to work with beads is difficult or complex.

B. Incorrect. Although the author's description of untying the bag of beads, spreading the beads upon a mat, smoothing out a sheet of buckskin, and trimming the buckskin into shape in paragraph 2 indicates that the mother follows a certain routine, it does not place any emphasis on working most efficiently by following the steps of the beading process in a precise order.

C. Incorrect. In paragraph 2, the author describes her mother "untying the long tasseled strings that bound a small brown buckskin bag," "spread[ing them] upon a mat beside her bunches of colored beads," "smooth[ing] out a double sheet of soft white buckskin; and drawing from a beaded case that hung on the left of her wide belt a long, narrow blade" to trim the buckskin. Although these descriptions do outline the steps in her process for creating beadwork, they do not emphasize the time required to do so, since the author does not mention in the excerpt how long it took her mother to fully prepare for and complete the large and small tasks in the activity of beading.

D. **CORRECT**. In paragraph 1, the author describes how the morning begins with her mother rolling up the canvas of the wigwam and allowing the breeze to come in. In paragraph 2, the author uses sensory language and precise sequencing to describe the way her mother prepares the beading materials by untying "the long tasseled strings that bound a small brown buckskin bag," spreading the "bunches of colored beads" beside her, and smoothing out "a double sheet of soft white buckskin." This combination of sequence and sensory language highlights the author's enthusiasm for beadwork by emphasizing that the author pays close attention to her mother's preparations.

52. The question asks how the details in paragraph 3 convey a central idea of the excerpt.

E. Incorrect. In paragraph 2, the author mentions how her mother "worked upon small moccasins for her small daughter" and when she did, the author "became intensely interested in her [mother's] designing." However, in paragraph 3, the author is interested in her mother's work mainly as part of her "lessons in the art of beadwork," not because she knew her mother was making something for her.

F. Incorrect. In paragraph 3, the author receives "practical observation lessons in the art of beadwork" and describes how "from a skein of finely twisted threads of silvery sinews my mother pulled out a single one" and "pierced the buckskin, and skillfully threaded it with the white sinew." The author describes the process in such detail that she provides no indication that she had difficulty learning through observation. The author also does not give any indication in the paragraph that she wanted to help her mother; she was there merely to observe and learn.

G. Incorrect. Although the author refers to her beading lessons with her mother as "practical observation lessons in the art of beadwork" and indicates that she sat "close beside" her mother while observing her beadwork, the author provides no indication in the paragraph that she was determined to behave according to her mother's standards or that she sought her mother's approval.

H. **CORRECT.** In paragraph 3, the author describes her mother's artistry and craftsmanship by using language such as "skillfully threaded," "picking up the tiny beads one by one," and "twisting it carefully after every stitch." These close observations indicate that the author greatly admired her mother's mastery of her craft and the precision that went into every detail of her work.

53. The question asks which sentence **best** summarizes the process of beading that is described in the excerpt.

A. Incorrect. In paragraphs 2 and 3, the author describes how at the beginning of the process her mother "smoothed out a double sheet of soft white buckskin" on a lapboard (paragraph 2) and how she strings the beads into a pattern. However, this sentence does not describe the steps that take place between the preparation and the stringing of the beads. Thus, this sentence does not best summarize the beading process.

B. Incorrect. In paragraphs 2 and 3, the author describes the process her mother uses to string the beads with "the point of her thread, always twisting it carefully after every stitch" (paragraph 3). While this sentence includes some of the steps in the beading process, it does not describe the preparation that must take place before beginning the task, namely spreading the beads and the buckskin out on a table. Thus, this sentence does not best summarize the beading process.

C. **CORRECT.** This sentence best summarizes the process of beading that is described in the excerpt because it includes details about each step in the process. In paragraph 2, the author explains how her mother "spread upon a mat beside her bunches of colored beads" and how "on a lapboard she smoothed out a double sheet of soft white buckskin; and drawing from a beaded case that hung on the left of her wide belt a long, narrow blade, she trimmed the buckskin into shape." The author continues her description in paragraph 3, stating, "From a skein of finely twisted threads of silvery sinews my mother pulled out a single one. With an awl she pierced the buckskin, and skillfully threaded it with the white sinew. Picking up the tiny beads one by one, she strung them with the point of her thread, always twisting it carefully after every stitch."

D. Incorrect. In paragraphs 2 and 3, the author describes the process her mother uses as she "smoothed out a double sheet of soft white buckskin" (paragraph 2) on a lapboard before stringing the beads. While this sentence includes most of the steps in the beading process, it excludes the step of piercing the buckskin. This sentence also provides few details about the process of beading and uses vague wording to describe each step. Therefore, the sentence does not best summarize the beading process.

54. The question asks how the idea that mastering moccasin design and creation requires experience is **best** illustrated in the excerpt.

E. **CORRECT.** In paragraph 6, the author states that when she became more familiar with elements of design, "a harder lesson was given me." According to the author, sewing on porcupine quills is a much more difficult task to master because it requires experience in handling the poisonous porcupine quills, which is why her mother told her not to "do much alone in quills" until she was older (paragraph 6). This information best illustrates the idea that mastering moccasin design and creation requires experience.

F. Incorrect. Although the author provides detailed descriptions of the materials used to make decorated moccasins ("colored beads" [paragraph 2]; "a skein of finely twisted threads of silvery sinews" [paragraph 3]; "tinted porcupine quills, moistened and flattened between the nails of the thumb and forefinger" [paragraph 6]), these descriptions do not illustrate the experience that is needed to gain mastery of moccasin design and creation.

G. Incorrect. Although the author describes the color combinations she used in making moccasins ("I was pleased with an outline of yellow upon a background of dark blue, or a combination of red and myrtle-green. There was another of red with a bluish-gray that was more conventionally used" [paragraph 6]), this information mainly illustrates the author's satisfaction with her moccasin design, not the importance of experience in mastering the creation and design of moccasins.

H. Incorrect. In paragraph 7, the author tells of using a sharpened rod to spear gum from trees. She explains that she and her playmates used the rods to "[pry] up certain sweet roots" to find the gum. The detail of the sharpened rod is from a recollection about the playtime that followed the "confining lessons" of moccasin making. However, the sharpened rod was not used to create moccasins.

55. The question asks how the author distinguishes her point of view from that of her mother.

A. Incorrect. In paragraph 4, the author explains that "it took many trials before I learned how to knot my sinew thread on the point of my finger, as I saw her do" and that the "difficulty was in keeping my thread stiffly twisted, so that I could easily string my beads upon it." Although this explanation describes the author's difficulty in performing the same task as her mother, it does not distinguish her point of view from that of her mother. In fact, they seem to share the same point of view regarding the importance of the technique the author is attempting to learn.

B. **CORRECT.** In paragraph 5, the author distinguishes her point of view from that of her mother by describing their approaches to beadwork design. In the paragraph, the author states, "I usually drew easy and simple crosses and squares" and that "my original designs were not always symmetrical nor sufficiently characteristic, two faults with which my mother had little patience." The author also distinguishes her point of view from that her of mother by stating that "the quietness of [my mother's] oversight made me feel strongly responsible and dependent upon my own judgment."

C. Incorrect. In paragraph 6, the author states, "My mother cut off the prickly ends and burned them at once in the centre fire. These sharp points were poisonous, and worked into the flesh wherever they lodged. For this reason, my mother said, I should not do much alone in quills until I was as tall as my cousin Warca-Ziwin." Although these instructions explain the importance of having experience and skill when working with quills, they do not distinguish the author's point of view from that of her mother.

D. Incorrect. In paragraph 7, the author describes her beadwork lessons as "confining" and states that she liked to roam "over the hills" with her playmates after the lessons. However, she makes no mention of her mother in paragraph 7; the activities and ideas stated there belong to the author, not the mother.

56. The question asks which sentence **best** describes how the sentence from paragraph 7 fits into the overall structure of the excerpt.

E. Incorrect. Though the author feels humiliated "when some boldness of mine drew forth a rebuke from" her mother (paragraph 5) and characterizes her lessons with her mother as "confining" (paragraph 7), the overall passage does not portray a demanding relationship between the author and the mother. The shift introduced in the sentence from paragraph 7 is not from one of the author's relationships to another; it is from work to play.

F. Incorrect. In paragraph 6, the author explains how working with porcupine quills is difficult because the "sharp points were poisonous, and worked into the flesh wherever they lodged." Although this sentence suggests that working with porcupine quills was challenging, the sentence from paragraph 7 does not signal a change from the challenging aspects of life on the reservation to the advantages of living on the prairie. Most of paragraph 6 describes the author's pleasure in creating designs in different colors.

G. CORRECT. In the sentence from paragraph 7, the author refers to her beadwork lessons as "confining" and states that after the lessons, she "was wild with surplus spirits" and "found joyous relief" in being outside and running around. The phrases "surplus spirits" and "joyous relief" highlight a sense of freedom that stands in strong contrast to the "confining" nature of the author's beadwork lessons, which required intense focus and control.

H. Incorrect. In paragraph 7, the author describes how "many a summer afternoon" after her beadwork lessons, she and her friends used "a light sharpened rod" to gather "sweet roots" and "little crystal drops of gum." She then explains that they later "tossed away our gum, to return again to the sweet roots." However, the sentence from paragraph 7 does not conclude the progression of events in the narrative by describing the sequence of events at the end of the author's day; the sentence appears at the beginning of paragraph 7 and provides a contrast with events from the previous paragraph.

57. The question asks how the table after paragraph 7 expands upon a central idea in the excerpt.

A. **CORRECT.** The table provides the chronology from the 1500s, when the Dakota created beadwork using "beads made from bones, shells, stones, and animal teeth," to the 1830s, when the Dakota began "using glass beads," and the 1900s, when they created items to "sell outside their community." Thus, the table helps expand on a central idea by showing that the craft the author was learning is a tradition that has endured through many generations.

B. Incorrect. Although the table shows that the Dakota used "beads made from bones, shells, stones, and animal teeth" in the 1500s and that by the 1830s began "using glass beads in clothing, artwork, and decorations in place of Native-made beads," it does not provide any information about the type of materials used by the author's family.

C. Incorrect. While the information included in the table states that "European traders [brought] glass beads to North America" in the 1500s and that by the 1920s the Dakota created "items to sell outside their community," there is no mention of whether the uniqueness of Dakota beadwork was recognized in Europe.

D. Incorrect. The table indicates that by the late 1600s the Dakota began trading with French traders from Europe who brought glass beads to the Americas and that by 1830 the Dakota were "using glass beads in clothing, artwork, and decorations in place of Native-made beads." However, the table provides no information about whether this work incorporated color. Therefore, the table does not show that the author was able to incorporate color into her craftwork as a result of trade with other peoples.

58. **(5,184)** First, find the volume of the cube using the formula $V = lwh$.

The length, width, and height of the cube are equal (18 mm).

$V_c = 18 \times 18 \times 18 = 5{,}832$ cubic mm

Next, find the volume of the cut-out square prism, with equal length and width (6 mm), and height of 18 mm.

$V_p = 6 \times 6 \times 18 = 648$ cubic mm

Finally, subtract the volume of the prism from the volume of the cube.

$5{,}832 - 648 = 5{,}184$ cubic mm

59. **(0.5)** To find p, the constant of proportionality of ounces of raisins, y, to cups of oatmeal, x, use the equation $y = px$.

The table shows that there is 1 ounce of raisins for 2 cups of oatmeal.

$$1 = 2p$$
$$\frac{1}{2} = \frac{2p}{2}$$
$$0.5 = p$$

The constant of proportionality is 0.5.

---

60. **(4.6)** Subtract the number of grams of sugar Kelly used in her coffee from the original amount she had.

$7.3 - 2.7 = 4.6$ grams left

61. **(8)** The price of a book before tax is x and after tax is $1.08x$. Subtract to determine the tax rate.

$1.08x - x = 0.08x$, so the tax rate is 0.08.

The tax rate $m\%$ can be written as $\frac{m}{100}$.

Solve for m:

$$\frac{m}{100} = 0.08$$
$$100\left(\frac{m}{100}\right) = 100(0.08)$$
$$m = 8$$

---

62. **(5)** The probability that any 1 seat will be selected at random from 20 seats is 1 out of 20. To find the probability as a percentage, convert the fraction to a decimal.

$$\frac{1}{20} = 0.05$$

Then convert the decimal to a percentage by multiplying by 100.

$0.05 \times 100 = 5$

The probability is 5%.

63. **(B)** By observation, 3,575 ends in 75; therefore, 3,575 is divisible by 25.

$3{,}575 \div 25 = 143$

Test 143 for factors and eliminate 3, 5, and 7, but 11 is a factor.

$143 \div 11 = 13$; both 11 and 13 are prime numbers.

The first factor, 25, is not prime but is the product of primes, $5 \times 5 = 5^2$.

The prime factorization of 3,575 is $5^2 \times 11 \times 13$.

64. **(H)** The goal is to isolate the variable x by using inverse operations. First, multiply both sides by 5 and then subtract $2y$ from both sides.

$$\frac{x + 2y}{5} = 3y$$
$$x + 2y = 15y$$
$$x = 13y$$

Another approach is to make the right side of the equation a fraction and then use cross multiplication for the first step.

$$\frac{x + 2y}{5} = \frac{3y}{1}$$
$$x + 2y = 15y$$
$$x = 13y$$

65. **(D)** First, multiply both sides of the equation by 10 to eliminate the fractions. In other words, multiply each term by 10.

$$\frac{x}{10} + \frac{y - x}{5} = \frac{z}{10}$$
$$10\left(\frac{x}{10} + \frac{y - x}{5}\right) = 10\left(\frac{z}{10}\right)$$
$$\frac{10x}{10} + \frac{10(y - x)}{5} = \frac{10z}{10}$$
$$x + 2(y - x) = z$$

Then, distribute and combine like terms to find the value for z.

$$x + 2(y - x) = z$$
$$x + 2y - 2x = z$$
$$2y - x = z$$

66. **(F)** First, find the sum for each set by adding the terms in each set separately.

The sum for set R is $5 + x + 3 + 8$, which is $x + 16$.

The sum for set S is $6 + y + 4 + 1$, which is $y + 11$.

The question states that these two sums are equal to each other, so write the equation and then rearrange using inverse operations.

$$x + 16 = y + 11$$
$$x = y - 5$$
$$x - y = -5$$

If the rearranging to obtain the target value is unclear, use the equation $x + 16 = y + 11$ and find a few possible values for x and y.

For example, if $x = 1$, then $y = 6$ because $1 + 16 = 6 + 11$. If $x = 2$, then $y = 7$ because $2 + 16 = 7 + 11$. Then find the value of $x - y$. No matter which values are chosen, $x - y$ will always be -5.

67. **(C)** The first step is to substitute the value for x into the expression to get $\frac{2}{2 - \frac{1}{4}}$.

Then, evaluate the denominator and finally divide the numerator by the denominator.

$$\frac{2}{\left(\frac{7}{4}\right)} = 2 \div \left(\frac{7}{4}\right) = 2\left(\frac{4}{7}\right) = \frac{8}{7} = 1\frac{1}{7}$$

68. **(F)** Since the additional cost per pound is not added until the package weighs more than 3 pounds, the total cost for 1, 2, or 3 pounds is $12.

- 1 pound is $12
- 2 pounds is $12
- 3 pounds is $12

Since p is greater than or equal to 3 pounds, the total cost for:

- 4 pounds is

$12 + (4 - 3)(2) = 14$

- 5 pounds is

$12 + (5 - 3)(2) = 16$

- p pounds is

$12 + (p - 3)(2) = 12 + 2(p - 3)$

You may try to write the expression without generating the pattern by recognizing that subtracting 3 from the number of pounds for the package before multiplying by $2 and then adding $12 results in the total cost.

69. **(C)** The question uses the phrase "no more than," which translates to "less than or equal to" (≤).

Since T-shirts cost $9.25 each and Julie bought x T-shirts, the total cost just for the T-shirts is found by multiplying $9.25 by x, or $9.25x$.

Combining the cost for one bag ($18.75) plus the cost for x T-shirts, the inequality is $18.75 + 9.25x \leq 50.00$.

70. **(E)** Use inverse operations to isolate the variable x by first getting the x variable on one side.

$2x + 11 > 3x + 9$

$2x - 3x + 11 > 3x - 3x + 9$

$-x + 11 > 9$

$-x + 11 - 11 > 9 - 11$

$-x > -2$

Now, when dividing by -1, the direction of the inequality sign changes.

$-x > -2$

$x < 2$

Another way to solve is to keep the coefficient of x positive and then recognizing that $2 > x$ is the same as $x < 2$.

$2x + 11 > 3x + 9$

$11 > x + 9$

$2 > x$

$x < 2$

71. **(A)** To find the perimeter of a triangle, add the measures of the three sides. The perimeter of the scale drawing is $5 + 7 + 8 = 20$ inches.

Now, use the perimeters to find the scale factor for the scale drawing to the actual perimeter.

The scale factor is 20 inches to 25 miles, which reduces to a scale factor of 4 inches to 5 miles. Note that the scale for the perimeter is the same as the scale for the side lengths.

Since the smallest side on the scale drawing is 5 inches, use the scale factor to find the actual side length of the smallest side:

$$5 \text{ inches}\left(\frac{5 \text{ miles}}{4 \text{ inches}}\right) = 6.25 \text{ miles}$$

72. **(H)** $\overline{SP}$ represents the radius of the circle and has length 12.

Both $\overline{RP}$ and $\overline{PT}$ are radii and also have length 12.

Therefore, the length of $\overline{RT}$, which is a diameter, is 24 and is also represented by $x + 5$.

$x + 5 = 24$

$x = 19$

73. **(A)** Since the three angles of a triangle have a sum of 180°, and since one angle is a right angle, the other two angles have a sum of 90°. By writing an equation and using inverse operations, the value of x can be found.

$(2x + 9) + (3x - 14) = 90$

$5x - 5 = 90$

$5x = 95$

$x = 19$

Now, use substitution to find the measure of the two angles to determine the smallest angle of the triangle.

$2x + 9 = 2(19) + 9 = 47$

$3x - 14 = 3(19) - 14 = 43$

The smallest angle is 43°.

74. **(F)** Pages read in the morning:

$\left(\frac{1}{4}\right)(84) = 21$

Pages remaining after the morning:

$84 - 21 = 63$

Pages read in the afternoon:

$\left(\frac{1}{3}\right)(63) = 21$

Pages he still needs to read:

$63 - 21 = 42$

---

75. **(C)** To add fractions, find a common denominator and rename the fractions using the common denominator. The least common denominator for 11, 22, and 33 is 66. After adding the fractions, the final fraction can be reduced to lowest terms.

$\frac{1}{11} = \frac{1 \times 6}{11 \times 6} = \frac{6}{66}$

$\frac{1}{22} = \frac{1 \times 3}{22 \times 3} = \frac{3}{66}$

$\frac{1}{33} = \frac{1 \times 2}{33 \times 2} = \frac{2}{66}$

$\frac{6}{66} + \frac{3}{66} + \frac{2}{66} = \frac{11}{66} = \frac{1}{6}$

76. **(H)** First, add the number of students that are members of both orchestra and choir.

$38 + 46 = 84$

Then, subtract to find the number of students that are members of both orchestra and choir.

$84 - 64 = 20$

Then, find the fraction of the 64 students that are members of both orchestra and choir.

$\frac{20}{64} = \frac{5}{16}$

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77. **(C)** First, add the mixed numbers. Then, convert the fraction $\frac{1}{9}$ to a decimal.

$1\frac{2}{3} + 2\frac{4}{9}$

$1\frac{6}{9} + 2\frac{4}{9}$

$3 + \frac{10}{9}$

$3 + 1\frac{1}{9}$

$4\frac{1}{9} = 4.111... = 4.\overline{1}$

78. **(G)** First, convert the decimal 0.4, which is read as four-tenths, to the fraction $\frac{4}{10}$, and then set up a proportion to solve for x using cross products.

$$\frac{4}{10} = \frac{x}{25}$$
$$10x = 100$$
$$x = 10$$

Or, reduce the fraction to $\frac{2}{5}$ before setting up the proportion and then use proportional reasoning.

$$\frac{4}{10} = \frac{2}{5}$$
$$\frac{2 \times 5}{5 \times 5} = \frac{10}{25}$$

Therefore, $x = 10$.

79. **(B)** Use the order of operations to evaluate the expression. It is important to recognize that the fraction bar is a grouping symbol and so the entire numerator should be evaluated first. Exponents are evaluated first.

$$\frac{-9(-4)^2 + 36(-4) + 304}{-4}$$
$$\frac{-9(16) + 36(-4) + 304}{-4}$$

Then multiplication, recognizing that the product of a negative factor and a positive factor is negative.

$$\frac{-9(16) + 36(-4) + 304}{-4}$$
$$\frac{-144 - 144 + 304}{-4}$$

Then addition and subtraction in order from left to right, recognizing the rules for adding and subtracting signed numbers.

$$\frac{-144 - 144 + 304}{-4}$$
$$\frac{-288 + 304}{-4} = \frac{16}{-4}$$

And finally the fraction can be evaluated by division, recognizing that the quotient of a positive and a negative number is negative. $\frac{16}{-4} = -4$

80. **(G)** First, determine the total amount Maxie borrowed, in dollars:

$7.75 + 11.00 + 4.50 = 23.25$

Then use subtraction to determine the difference between the amount her grandmother gave her and the amount she borrowed:

$25.00 - 23.25 = 1.75$

The difference is positive, which means that Maxie will still have $1.75 left from the amount her grandmother gave her.

81. **(B)** When Seth picks strawberries, the value represents a positive number, and when he eats the strawberries, the value represents a negative number. Write an expression and then evaluate the expression, where the negative value is multiplied by 3 because he ate the same amount on 3 different days.

$2\frac{1}{2} + 4 + (3)\left(-\frac{3}{4}\right)$

$2\frac{1}{2} + 4 - 2\frac{1}{4}$

$6\frac{1}{2} - 2\frac{1}{4}$

$6\frac{2}{4} - 2\frac{1}{4}$

$4\frac{1}{4}$

If the multiplication is confusing, evaluate the expression below which represents the sum for the 5 days with each day listed separately.

$2\frac{1}{2} + 4 + \left(-\frac{3}{4}\right) + \left(-\frac{3}{4}\right) + \left(-\frac{3}{4}\right)$

$4\frac{1}{4}$

82. **(E)** When looking for a situation where quantities combine to make zero, find two values with the same absolute value where one value is positive and one value is negative.

In the situation in option A, receiving a gift of \$5 is represented by +5, and giving a friend \$5 is represented by $^{-}$5. These values combine to equal zero because $+5 - 5 = 0$.

83. **(D)** First, simplify the numerator and the denominator separately.

To simplify the numerator, multiply the last two fractions and then subtract from the first fraction.

$$\frac{2}{3} - \left(\frac{4}{5} \times \frac{1}{3}\right)$$
$$\frac{2}{3} - \frac{4}{15}$$
$$\frac{10}{15} - \frac{4}{15}$$
$$\frac{6}{15} = \frac{2}{5}$$

To simplify the denominator, divide the last two fractions and then add to the first fraction.

$$\frac{5}{3} + \left(\frac{1}{4} \div \frac{3}{4}\right)$$
$$\frac{5}{3} + \left(\frac{1}{4} \times \frac{4}{3}\right)$$
$$\frac{5}{3} + \frac{1}{3}$$
$$\frac{5}{3} + \frac{1}{3} = \frac{6}{3} = 2$$

Finally, divide the numerator by the denominator.

$$\frac{\frac{2}{5}}{2} = \frac{2}{5} \div 2 = \frac{2}{5} \times \frac{1}{2} = \frac{1}{5}$$

84. **(F)** To determine the number of kilometers in 1 minute, find the unit rate in kilometers per minute: $\frac{\frac{1}{8} \text{ kilometer}}{\frac{3}{4} \text{ minute}}$.

To evaluate the fraction, use the reciprocal when dividing to get $\frac{1}{6}$ kilometer per 1 minute.

$$\frac{1}{8} \div \frac{3}{4} = \frac{1}{8} \times \frac{4}{3} = \frac{4}{24} = \frac{1}{6}$$

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85. **(B)** First, find the length of the bus trip in miles by multiplying the time, 9 hours, by the average (mean) speed, 50 miles per hour, to get 450 miles.

Then, divide the total distance, 450 miles, by the average (mean) speed, 45 miles per hour, to get the total time:

$$450 \div 45 = 10 \text{ hours}$$

86. **(F)** First, calculate the amount of sunflower seeds in 25 pounds of this birdseed by using ratio reasoning to find that there are 10 pounds of sunflower seeds in the birdseed.

$$\frac{2}{5} = \frac{10}{25}$$

Then, use ratio reasoning to find the cost of the sunflower seeds per pound.

$$\left(\frac{\$0.10}{1 \text{ ounce}}\right)\left(\frac{16 \text{ ounces}}{1 \text{ pound}}\right) = \$1.60$$

The cost of the sunflower seeds is $1.60 per pound.

Finally, find the total cost using ratios by multiplying the unit cost per pound by 10 pounds.

$$\frac{\$1.60}{1 \text{ pound}} \times \frac{10 \text{ pounds}}{1} = \$16.00$$

The first two steps above could be done in the other order; that is, find $1.60 per pound first and 10 pounds of sunflower seeds second.

87. **(A)** First, convert steps per second to steps per minute.

$$\frac{9 \text{ steps}}{6 \text{ seconds}} = \frac{90 \text{ steps}}{60 \text{ seconds}} = \frac{90 \text{ steps}}{1 \text{ minute}}$$

Then, use ratio reasoning to determine that each step must be 3 feet since 90 times 3 is 270 (or 270 divided by 90 is 3).

$$\frac{90 \text{ steps}}{1 \text{ minute}} \times \frac{3 \text{ feet}}{1 \text{ step}} = \frac{270 \text{ feet}}{1 \text{ minute}}$$

or

$$\frac{270 \text{ feet}}{1 \text{ minute}} \div \frac{90 \text{ steps}}{1 \text{ minute}} =$$
$$\frac{270 \text{ feet}}{1 \text{ minute}} \times \frac{1 \text{ minute}}{90 \text{ steps}} =$$
$$\frac{3 \text{ feet}}{1 \text{ step}}$$

88. **(F)** Since 36 people each drank 2 cups of juice, the total amount of juice they drank was $36 \times 2 = 72$ cups.

Convert 72 cups to gallons:

$$72 \text{ cups} \times \frac{1 \text{ quart}}{4 \text{ cups}} \times \frac{1 \text{ gallon}}{4 \text{ quarts}} =$$
$$\frac{72}{16} \text{ gallons} =$$
$$\frac{9}{2} \text{ gallons} =$$
$$4\frac{1}{2} \text{ gallons}$$

89. **(B)** To find the fraction of the book the student can read in 1 hour, find the unit rate per hour. First, set up the ratio.

$$\frac{\frac{1}{12}\text{ book}}{\frac{1}{3}\text{ hour}}$$

Then use division to find the unit rate.

$$\frac{\frac{1}{12}}{\frac{1}{3}} = \frac{1}{12} \div \frac{1}{3} = \frac{1}{12} \times \frac{3}{1} = \frac{3}{12} = \frac{1}{4}$$

Another way to solve the problem is to set up the ratio and then multiply both the numerator and denominator by 3, since $\frac{1}{3}$ hour times 3 equals 1 hour.

$$\frac{3 \times \frac{1}{12}\text{ book}}{3 \times \frac{1}{3}\text{ hour}} = \frac{\frac{1}{4}\text{ book}}{1\text{ hour}}$$

90. **(G)** First, set up the ratio of the perimeter of the square to the triangle as 2:1 because the question states that the perimeter of the square is twice the perimeter of the triangle.

Recognizing that the square has 4 equal sides and that an equilateral triangle has 3 sides, use division to find the ratio of the sides.

Perimeter: $2{:}1 = \frac{2}{1}$

Sides: $\frac{\frac{2}{4}}{\frac{1}{3}} = \frac{2}{4} \div \frac{1}{3} = \frac{2}{4} \times \frac{3}{1} = \frac{6}{4} = \frac{3}{2} = 3{:}2$

91. **(A)** To find the cups of sugar for each cup of flour, find the unit rate using this ratio:

$$\frac{\frac{2}{3} \text{ cup of sugar}}{1\frac{1}{4} \text{ cups of flour}}$$

Then, convert the denominator to an improper fraction and divide to find the cups of sugar per cup of flour.

$$\frac{\frac{2}{3}}{\frac{5}{4}} = \frac{2}{3} \div \frac{5}{4} = \frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$$

92. **(F)** First determine the pages read for each assignment. Since the pages per assignment are inclusive, subtract the first page from the last page assigned and then add 1 to determine the pages read for each assignment.

Assignment I: $(17 - 3) + 1 = 15$

Assignment II: $(38 - 25) + 1 = 14$

Assignment III: $(60 - 45) + 1 = 16$

The student was assigned a total of 45 pages, since $15 + 14 + 16 = 45$.

To determine the percent, express 45 pages out of 250 pages as a fraction.

$$\frac{45}{250} = \frac{45 \div 5}{250 \div 5} = \frac{9}{50}$$

$$\frac{9}{50} = \frac{18}{100} = 18\%$$

93. **(C)** In this context, the phrase "this sample is representative" means that the ratio of 2 red marbles to 8 green marbles is the same as the ratio of red to green marbles in the entire box. Use this ratio of 2 to 8 to set up a proportion and solve, where x represents the number of green marbles in the box.

$$\frac{2}{8} = \frac{100}{x}$$
$$2x = 800$$
$$x = 400$$

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94. **(G)** First, find the sales tax. Then, add the sales tax to the cost of the car. Finally, subtract the down payment to find out how much she has left to pay.

$$(0.08)(24,000) = 1,920$$
$$\$24,000 + \$1,920 = \$25,920$$
$$\$25,920 - \$10,000 = \$15,920$$

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95. **(C)** Range is the difference between the largest and the smallest values in a given set of data. In this case, the highest temperature is 17 and the lowest temperature is $^{-}5$. Therefore, the range is $17 - (^{-}5) = 17 + 5 = 22$.

96. **(F)** Each (x, y) ordered pair represents y, the number of applicants that made x errors.

First, determine the points with x-values less than 3.

The point (1, 4) means that 4 applicants made 1 error.

The point (2, 7) means that 7 applicants made 2 errors.

Then, add the y-values to find the total applicants who made fewer than 3 errors.

$$4 + 7 = 11$$

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97. **(C)** Using the joint probability formula, find the product of the two independent events. The probability that Emily will ride the bus to school on any given morning is $\frac{3}{5}$. The probability that Emily will ride the bus to school on any given afternoon is $\frac{4}{5}$. Therefore, the probability that Emily will ride the bus in the morning and the afternoon is $\frac{3}{5} \times \frac{4}{5} = \frac{12}{25}$.

98. **(G)** An organized list can be used to determine the number of groups of 3 people that include **only** 1 male.

Let the letters A, B, C, and D represent the females, and let the numbers 1 and 2 represent the males.

Then, create a list of all possible combinations of 3 people with **only** 1 male.

AB1, AB2, AC1, AC2, AD1, AD2

BC1, BC2, BD1, BD2

CD1, CD2

There are 12 possible groups with **only** 1 male.

99. **(D)** To calculate the joint probability, you must first determine the probability of each independent event. The probability that a randomly selected person has a common cold is $\frac{1}{20}$. The probability that a person has a cold caused by V144 is $\frac{1}{200}$. The probability that a person has a cold and the cold is caused by the V144 virus is the product of those two probabilities, $\frac{1}{20} \times \frac{1}{200} = \frac{1}{4{,}000}$.

100. **(F)** There are four possible outcomes for each spin of the spinner:

1, 2, 3, 4

The possible outcomes of two spins are:

11	12	13	$\boxed{14}$
21	$\boxed{22}$	23	24
31	32	33	34
$\boxed{41}$	42	43	44

Of the 16 possible outcomes, only 3 pairings have a product of 4: 14, 22, and 41.

Therefore, the probability that the two numbers resulting from two consecutive spins have a product of 4 is $\frac{3}{16}$.

101. (D) The sample space of a random experiment is the collection of all possible outcomes. For this experiment, R represents a red marble, G represents a green marble, and W represents a white marble.

Since two marbles are being drawn, the possible outcomes for the first marble drawn are R, G, W.

List the possible results for each initial outcome combined with the second choice of marble. For example, if the first marble and second marble are both red, the sample space will include RR (red, red).

RR, RG, RW

GR, GG, GW

WR, WG, WW

Since order does not matter in this selection, remove any pairing that presents a duplicate choice, such as RG and GR—only one of the two pairings will be included in the sample space. Those are removed and leave a sample space of:

RR, RG, RW, GG, GW, WW

102. (G) It is given that *x*-values on the graph represent the numbers of hours for which water was added to the tank, and the *y*-values represent the numbers of gallons of water added in *x* hours. In the ordered pair (3, 24), 3 represents an *x*-value and 24 represents a *y*-value.

Therefore, (3, 24) represents a data point for 24 gallons of water being added to the tank in a 3-hour period.

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103. (C) To find the probability that any one of several mutually exclusive events occurs, use the addition rule, and add the probabilities of each event:

P(A or B) = P(A) + P(B)

Using the data in the table, the probability that the team will score 3 or more goals in the next game is represented by
P(3) + P(4) + P(5) =
0.21 + 0.09 + 0.04 = 0.34.

104. (G) A constant of proportionality, k, is the constant value of the ratio between two proportional values. Two varying values are said to be in a relation of proportionality when either their ratio or their product yields a constant. In the graph shown, the proportional relationship between x and y is represented by:

$$k = \frac{y}{x}$$

Therefore, the constant of proportionality for the relationship on the graph is:

$$k = \frac{9}{3} = \frac{3}{1} = 3$$

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105. (B) The constant of proportionality is the ratio of y (90) to x (3). $90 \div 3 = 30$. So the constant of proportionality is 30.

106. (G) A variation of -2.5% to $+2.5\%$ means that the thickness of the machine part can be from 2.5% less than the standard of 0.38 mm to 2.5% greater than 0.38 mm.

The least allowed measure is

$0.38 - 0.025(0.38) = 0.3705$.

The greatest allowed measure is

$0.38 + 0.025(0.38) = 0.3895$.

Therefore, the allowable range of thicknesses is 0.3705 mm to 0.3895 mm.

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107. (C) Using the specified equation $p = 2.50 + 1.25c$, determine the number of cupcakes Samantha bought by substituting the total paid ($22.50) for p, and solve the equation for the value of c, the number of cupcakes bought.

$22.50 = 2.50 + 1.25c$
$22.50 - 2.50 = 1.25c$
$20.00 \div 1.25 = c$
$16 = c$

108. (G) It is given that m represents the purchase cost.

$1m$ represents 100%. The amount the purchase cost was increased is represented by 55%.

Therefore, the selling price will be $(100\% + 55\%)m$.

$$155\% = \frac{155}{100} = 1.55$$

The selling price can be represented by the expression $1.55m$.

109. (B) Proportional relationships are relationships between two variables where their ratios are equivalent. The graph of a proportional relationship will always go through the point (0, 0).

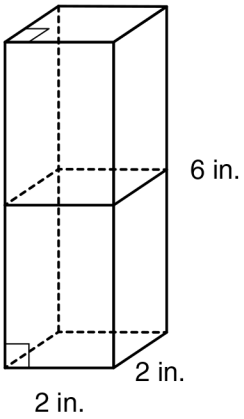
In the text of the problem, it is given that the farmer begins with 100 apples. Therefore, the ordered pair (0, 100) would be the point at which the graph of the relationship crosses the y-axis, not (0, 0). Additionally, in a proportional relationship, each pair of values represents the same ratio of $\frac{y}{x}$.

If the relationship were proportional, the ratio for the first two days (1, 98) and (2, 96) would be equivalent.

$$\frac{98 \text{ apples}}{1 \text{ day}} = \frac{96 \text{ apples}}{2 \text{ days}}$$

$2(98) \neq 96$

110. (E) Based on the diagram, the figure shown is a right rectangular prism with a square base. A horizontal slice of the figure will be a plane parallel to the square base, as in this example.



Since the horizontal slice is parallel to the base, it will be congruent to the base, which is a square with 2-inch sides.

111. (C) Given that each piece will be a square, the length and width will be the same. The greatest possible length can be determined by finding the greatest common factor of the length and width of the original piece of cloth.

Begin by finding the prime factorization of the length (75 in.) and width (45 in.).

$45 = 3 \times 3 \times 5$

$75 = 3 \times 5 \times 5$

The common factors can be seen as 3×5.

The greatest possible side length, in inches, will be $3 \times 5 = 15$.

112. (F) To determine the percent decrease from Monday to Tuesday, first calculate the decrease in the number of birds at the feeder.

$30 - 24 = 6$

The difference in the number of birds at the feeder divided by the number of birds on Monday will yield the percent decrease from Monday to Tuesday.

$\frac{6}{30} = 0.20$

0.20 represents 20%.

There was a 20% decrease from Monday to Tuesday.

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113. (D) Since each can is worth 5 points, the total number of points earned from all the cans, x, is $5x$. The team started with 53 points. That is a constant value and doesn't change. So the total number of points the team will earn is $53 + 5x$. The team wants to earn at least ($\geq$) 100 points, so they need $53 + 5x \geq 100$ total points.

114. (G) Given a purchase price of $456.00, the 125% increase in price is calculated as:

$456 \times 1.25 = 570$

The selling price equals the purchase price plus the increase, or:

$456 + 570 = 1{,}026$

The sales tax on the selling price is:

$1{,}026(0.08) = 82.08$

The customer pays the selling price plus the sales tax:

$1{,}026 + 82.08 = 1{,}108.08$

FORM B SAMPLE TEST – ANSWER KEY

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

Answer Key for Sample Form B

1. D	14. G	27. B	40. F	53. C	66. F	79. B	92. F	105. B
2. G	15. D	28. G	41. A	54. E	67. C	80. G	93. C	106. G
3. D	16. F	29. B	42. F	55. B	68. F	81. B	94. G	107. C
4. F	17. B	30. H	43. B	56. G	69. C	82. E	95. C	108. G
5. C	18. F	31. A	44. G	57. A	70. E	83. D	96. F	109. B
6. F	19. D	32. E	45. D	58. 5184	71. A	84. F	97. C	110. E
7. D	20. H	33. D	46. F	59. 0.5	72. H	85. B	98. G	111. C
8. H	21. B	34. G	47. A	60. 4.6	73. A	86. F	99. D	112. F
9. C	22. G	35. A	48. G	61. 8	74. F	87. A	100. F	113. D
10. F	23. C	36. E	49. C	62. 5	75. C	88. F	101. D	114. G
11. A	24. E	37. D	50. E	63. B	76. H	89. B	102. G	
12. E	25. D	38. E	51. D	64. H	77. C	90. G	103. C	
13. C	26. G	39. B	52. H	65. D	78. G	91. A	104. G	