

1. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** **Choice A** is the best answer. The blank describes the way in which the insights and treatment of everyday life are “accessible to the average reader.” The passage says the insights are “unassuming” or “not flamboyant,” and the treatment of everyday life and interactions is “gently humorous” or “pleasantly funny,” which suggests the stories are probably very easy to read. **Choice A** means “effortlessly” or “easily,” which fits the context that the average reader can enjoy the stories without working hard to understand them.

**Distractor Explanation:** **Choice B** is incorrect because it refers to being full of worry, but there is no indication that the average reader would be worried about stories that are unassuming and pleasant. **Choice C** is incorrect because the reader may be content reading the stories, but the underlined word refers to the “accessibility” of the stories rather than to the reader. Accessibility is inanimate and therefore not content. **Choice D** is incorrect because it refers to dry, ironic humor, but the passage already states that his humor is “gentle.”

2. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** **Choice A** is the best answer because “charge” is what the next generation will do to the miners. Choice A means “blame,” so fits the context of saying that the next generation will not blame the miners for what they have done. They will only blame the miners for what is “undone,” meaning that they will blame the miners if the working conditions are still terrible.

**Distractor Explanation:** None of the other choices fits the context of explaining what the next generation will do to the miners. **Choice B** refers to a strong order or request, but the actions in “what we’ve done” and “what we have left undone” are in the past. **Choice C** refers to forcing something rather than commenting on something, and **Choice D** refers to a physical attack rather than a verbal complaint.

3. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** **Choice A** is the best answer. The underlined word is an adjective which describes “the problem” as the problem exists in Southeast Asia. “Pronounced” refers to something which is conspicuous or noticeable. Therefore, it fits the context of saying that myopia is a more noticeable problem in Southeast Asia than in the US, as such a large percentage of students have it.

**Distractor Explanation:** None of the other choices adequately describe “the problem” in Southeast Asia. **Choice B** refers to supporting a particular policy, but there is no indication that people want myopia, as it is a “problem.” **Choice C** refers to something which is ordered to be done, such as taking a medical prescription. **Choice D** is incorrect because it refers to how clearly something is said.

4. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Text Structure and Purpose

**Key Explanation:** **Choice B** is the best answer because despite promising trips, “none of them ever materialized.” This shows that Ulysses was more interested in talking than in following

through with his word. That is the action of a “superficial” or “shallow” personality: saying one thing but not caring enough to do it.

**Distractor Explanation:** Choice A is incorrect because “foreshadowing” involves giving a clue of something that will happen in the future. However, the promised trips never happened, so they do not give any hint that Ulysses would take his son on a trip or that Ulysses would die. Choice C is incorrect because, if Ulysses really took an interest in his son, he would follow through on promises and spend time with the boy rather than getting the boy’s hopes up and breaking them. Choice D is incorrect because the trips would cost a lot of money if the father and son really took them all, but the trips never happened. Therefore, it is possible that the father had very little money and was just talking about places he could only dream of visiting.

5. **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Text Structure and Purpose

**Key Explanation:** Choice C is the best answer because the text describes when the Jiroft culture was first proposed and what evidence was available at the time. The text then describes a later finding—the excavations at Komar Sandal—which might strengthen the evidence for such a culture, but the link has not yet been decisively drawn, as the text says “might prove a vital link.”

**Distractor Explanations:** Choice A is incorrect because the text starts by showing that there was doubt about the culture because the artefacts were not studied where they were found, but the information from Komar Sandal implies that the culture may really have existed. Choice B is also incorrect because no “flaws” or “errors” are discussed about the theory; the text only says

that the 2001 artefacts are not strong proof that it existed. Choice D is incorrect because there are no “incompatible” or “conflicting” findings, only recent evidence that supplements less strong earlier evidence.

6. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Text Structure and Purpose

**Key Explanation:** Choice A is the best answer. Jacob was looking at the chess board, but uncertain about his moves, fingering his hair and lifting and replacing the same piece before making a few other moves which may or may not have been effective. The end sentence shows what he was actually waiting or hoping for: the sound of Fanny walking by.

**Distractor Explanations:** Choice B is incorrect because there is no indication of a desire to get better at chess, only to use time waiting. Though Jacob thinks about his moves, it is unclear whether they are effective or not. Choice C is incorrect because Jacob is not “intense” or “concentrating very hard.” Instead, he is vacillating over moves and noticing things outside the room. Choice D is incorrect because it is clear that Jacob is waiting for Fanny, but not why. There is no clue that there was a “quarrel” or “argument.”

7. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Cross-Text Connections

**Key Explanation:** Choice B is the best answer because it describes the most likely way that the author of Text 2 most likely respond to Lincoln’s behaviour as illustrated in Text 1. According to Text 1, Lincoln was someone who stayed true

to his personal convictions despite the concerns of those close to him. Text 2 portrays Lincoln as someone who “grew more steady and resolute, and his ideas were never confused.” In both cases, the authors are emphasizing Lincoln’s stability and equanimity. The author of Text 2 would agree that Lincoln did not often deviate from his ways.

**Distractor Explanation:** Choice A is incorrect because nothing in Text 2 suggests that author believed that protection was important. Text 2 is focused on how Lincoln was someone who “grew more steady and resolute, and his ideas were never confused”, not on the importance of protection or Lincoln’s assassination beliefs. Choice C is incorrect because Text 2 doesn’t include any information regarding the morbid nature of Lincoln’s dislike for personal protection. In fact, Text 2 indicates that the author believes Lincoln to be “steady and resolute, and his ideas were never confused”, which Text 1 mirrors by illustrating his constant refusal to be guarded or protected. Choice D is incorrect because there’s no information in Text 2 suggesting that the author would challenge the supposition that Lincoln consistently “exposed himself to the deadly aim of an assassin.” Although Text 1 does indicate that Lincoln regularly ventured out without protection, Text 2 says only that the author believes that Lincoln’s character was that of a self-possessed, steady and resolute man. Text 2 doesn’t imply that the author doubts that Lincoln consistently put himself at risk of being assassinated.

8. **Level:** Easy | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Central Ideas and Details

**Key Explanation:** Choice D is the best answer because “evolved” refers to the changes that the plant underwent over time. The text defines

capsaicin and says that it is mostly contained in the fruit. The speculation is “possibly to deter mammalian herbivores.” “Herbivores” are animals that eat plants, so the plants that contained capsaicin “stopped” or “deterring” predators from eating the chili. Over time, the plants with more capsaicin survived.

**Distractor Explanation:** Choices A and B are incorrect because they are uses that chilis have been adapted for by humans but are not why chili plants evolved with capsaicin in their fruit. Choice C is not mentioned anywhere in the text.

9. **Level:** Easy | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Central Ideas and Details

**Key Explanation:** Choice B is the best answer because “reimbursement” refers to payment, and he explains how much he enjoys getting paid for traveling aboard a ship, “I always go to sea as a sailor, because they make a point of paying me for my trouble.”

**Distractor Explanation:** Choice A is incorrect because there is no reference to “excessive” or “too much” responsibility for passengers; the narrator does not mention the amount of work. Choice C is incorrect because it only describes what happens to passengers, not to Ishmael. Choice D is incorrect because the narrator does not want “recognition” or “fame.” He indicates that he is happy to leave those “to those who like them.”

10. **Level:** Hard | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Central Ideas and Details

**Key Explanation:** Choice C is the best answer because Adam’s wife, Alicia Withers, is described

as “anemic” and “devitalized,” which refers to someone who lacks vitality or spirit. She spent her time raising her son out of sight of the general public: “she had thenceforth effaced herself within the shadowy dimensions of the nursery,” rather than take an active interest in society or her husband’s activities. **Choice C** means “withdrawn” or “not confident,” so it describes Alicia well.

**Distractor Explanation:** **Choice A** is incorrect because while Alicia had some valuable connections, the passage does not indicate that she used them to her advantage. Therefore, she was not “influential” or “dominant” in manipulating her connections for her own good. **Choice B** refers to being able to attract and hold attention and **Choice D** refers to being very lively, neither of which are consistent with the description of an “anemic” lady who does not leave the nursery.

11. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Command of Evidence (Textual)

**Key Explanation:** **Choice A** is the best answer because Clark bases his claim on the concept that there are few overall changes in the biodiversity of an area. He believes that the neutral model, which is the case if no stabilizing factors exist, would result in more variation because chance is the only thing that affects extinction and replacement of species. Therefore, Choice A gives the scenario in which chance takes a large part, weakening Clark’s claim that other forces than chance are at work.

**Distractor Explanation:** **Choice B** can be eliminated as strengthening rather than weakening Clark’s claim that stabilizing forces exist. Choice B offers a “stabilizing force” that controls the biodiversity; Clark did not name

the forces, but Choice B shows that at least one exists. **Choice C** does not greatly affect Clark’s data in any way. Even if early humans ate nuts, or one species went extinct, the overall biodiversity can remain the same. Clark’s theory accounts for contingencies such as extinction as it only shows that stabilizing forces ensure that biodiversity in the region remains approximately rather than exactly the same. **Choice D** does not disprove Clark’s theory. If one species is susceptible to heat, it could decrease in number or go extinct, but overall, the plants in a region will still remain in the same balance.

12. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Command of Evidence (Quantitative)

**Key Explanation:** **Choice B** is the best answer because the “alternate source” column on the right-hand side lists only taurine as requiring a “synthetic” or “man-made” supplement. The other nutrients can be at least partly replaced by other sources. The second column of the chart lists “function.” The functions of taurine are given as “muscle function, bile production.” Someone who does not have enough taurine would therefore, have problems with muscles and bile. **Choice B** refers to “insufficient levels” or “not enough” bile, which relates to problems with producing bile.

**Distractor Explanation:** None of the other choices are related to the function of taurine. **Choice A** could be caused by a lack of DHA, which could be replaced using microalgae. **Choices C and D** could both be caused by a lack of B12, but that can be replaced using nutritional yeast.

13. **Level:** Hard | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Inferences

**Key Explanation:** **Choice B** is the best answer. The text states that the end of October had “about the middle of the values” at 90. Since the highest values were 30 points greater at 120—in March, the lowest values were probably about 30 points lower. Since 90 was the median the lowest values would be around 60.

**Distractor Explanation:** **Choice A** is incorrect because the amount of trading did not increase over the year if March had a greater index, which shows more trading than September or October. **Choice C** is incorrect because the cause of the index change is only mentioned as changes in supply and demand; there is no discussion of any changes at the New York Mercantile Exchange. **Choice D** is incorrect because if the middle index was 90 and the highest was 120, then it is unlikely that the index dropped below 20 many times; that would greatly change the averages.

14. **Level:** Easy | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Inferences

**Key Explanation:** **Choice C** is the best answer. The passage says that the vote was “notable” or “important” because the Speaker “typically remains silent” or “usually does not vote.” In other words, Colfax went against the normal protocol by voting. His decision shows that he was “committed” or “felt strongly” about the amendment to the point of breaking tradition to show his support of it.

**Distractor Explanation:** **Choice A** is incorrect because the passage says that a vote is usually only cast “in the case of a tie.” Since Colfax’s vote was notable, it probably was not cast under those conditions or it would be considered average or not worth noticing. **Choice B** is incorrect because the passage says that the Speaker usually does not vote, but can if there is a tie. Therefore, it is possible to vote, though it may have been “not valid” or “not acceptable” for other reasons. **Choice D** is impossible to determine because there is not enough information in the passage to determine Grant’s views on the subject.

15. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice C** is the best answer. “Longer than” is a comparison which needs to refer to two things that are similar. In the sentence, the thing being compared is “the eyes of baby rabbits.” Choice C accurately uses “than” and the comparative form with –er. It also correctly compares the eyes of the baby rabbits with “those”—meaning “the eyes”—of baby hares.

**Distractor Explanation:** **Choices A and D** are incorrect because they illogically compare the “the eyes of baby rabbits” with baby hares, not the eyes of baby hares. Furthermore, **Choice D** is incorrect because it shows the same length of time rather than establishing that one event takes ten days more than the other. **Choice B** is incorrect because it uses “as” instead of “than” to make a comparison with –er.

16. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice A** is the best answer. “Had” is used to show that something happened in the past before another action in the sentence; in this case, it shows that the design was made before the opening of the new section. “Been” makes the verb passive, showing that the design of the section was made by someone not mentioned in the passage; the section did not do the designing itself.

**Distractor Explanation:** **Choices B and C** are incorrect because they are active verbs which erroneously show that the section did the act of designing. **Choice C** is also incorrect because it is the simple past, so does not show that one action occurred before another. **Choice D** is a present-tense verb, so does not fit the context of an action which occurred in the past.

17. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice C** is the best answer. The beginning of the sentence, “growing to about one inch long,” refers to the size of the crab. A modifier like this phrase needs to be followed directly by the noun it modifies. Since **Choice C** starts with “these crabs,” it offers the correct order for the modifier and words that follow. In addition, “they” in the second half (“but they... predatory fish”) properly refers to the subject of the sentence, “these crabs.”

**Distractor Explanation:** All of the other choices can be eliminated because the preceding modifier, “growing to about one inch long,” is not followed

by a logical noun. Since “growing” indicates an animate object, it does not refer to the “large tank” in **Choice A.** **Choice B** starts with the placeholder “it,” and **Choice D** illogically makes the modifier refer to “the requirements.”

18. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice A** is the best answer. The subject is the singular “earthenware,” as indicated by the singular verb “is.” **Choice A** is the singular possessive form showing that the durability and water-holding capacity belongs to the earthenware.

**Distractor Explanation:** **Choice B** is incorrect because it is a contraction for “it is” rather than a word showing possession. **Choice C** is incorrect because it is a plural possessive form, but “is” shows that “earthenware” is singular. **Choice D** is incorrect because it is a contraction for “they are.”

19. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice D** is the best answer. The underlined portion connects the modifier “despite its size” with the main clause, “it is not a threat...” A comma needs to follow a modifier at the beginning of the sentence.

**Distractor Explanation:** **Choice A** is incorrect because “despite its size” is not a complete sentence; there is no active verb. **Choice B** is incorrect because there should be punctuation separating the main clause “it is not a threat...” from the phrases that modify it. Otherwise, the reader is unsure where one part of the sentence

ends and the next begins. **Choice C** is incorrect because a single dash should follow a complete sentence, but the preceding portion cannot stand on its own.

20. **Level:** Medium | **Domain:** STANDARD

ENGLISH CONVENTIONS

**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice C** is the best answer. “such …Nothing” adds more information to describe the previous noun, “many beloved children’s stories.” A comma correctly separates the noun from extra information that describes it but which is not essential for understanding the main part of the sentence.

**Distractor Explanation:** **Choice A** is incorrect because a colon should only follow a complete clause, but “such as” leaves the preceding idea unfinished. **Choice C** is incorrect because there should be no comma dividing “such as” from its object, the title of the book. **Choice D** is incorrect because the portion after the period is not a complete idea because there is no verb, so it cannot stand on its own as a sentence.

21. **Level:** Easy | **Domain:** STANDARD ENGLISH

CONVENTIONS

**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice C** is the best answer. Parenthetical information should be treated as if it is part of the noun it describes, so in this case, “*Der Kuss* in German” should follow the same punctuation as “*The Kiss*.” “When...Kiss” is a long modifier explaining the time of the main clause, “it was...platinum.” A comma should come at the end of a modifier at the start of a sentence. Since the parenthetical information is included as part of the clause, the comma comes after it.

**Distractor Explanation:** **Choice A** is incorrect because there is no comma separating the modifier of time from the main clause. **Choices B** and **D** are incorrect because the comma after “Kiss” divides the parenthetical information from the title it describes.

22. **Level:** Medium | **Domain:** STANDARD

ENGLISH CONVENTIONS

**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice A** is the best answer. “Simon Sinek” is necessary in the sentence to know which “American author and inspirational speaker” the sentence is writing about. Therefore, there should be no punctuation dividing the name from the rest of the main clause.

**Distractor Explanation:** **Choice B** is incorrect because “Simon Sinek” is not an aside but an essential part clarifying the subject of the sentence. Therefore, it should not be set aside from the main clause. **Choice C** is incorrect because “American author and inspirational speaker” is a subject, not a modifier. If it began with “an” or “the,” then it is possible that the description could be used in that way at the start of the sentence. **Choice D** is incorrect because it divides the subject from its verb “has shared.”

23. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS

**Skill/Knowledge:** Transitions

**Key Explanation:** **Choice A** is the best answer. The sentence has two parts, one which says that Blacks were granted various rights, but the second part says that conditions grew worse for Blacks and other people of color. **Choice A** is used to show that the main clause occurs in spite of the clause modified by “although.” Therefore, it fits the context of showing that conditions were bad in spite of slavery being abolished.

**Distractor Explanation: Choices B and D** can be eliminated because they are used to offer a logical reason for the main clause of the sentence. They do not establish the relationship between the parts of the sentence, because it is not logical that people who are given rights have those rights taken away again. **Choice C** is grammatically incorrect because it is not used to subordinate a clause.

24. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Transitions

**Key Explanation:** **Choice C** is the best answer. It is used to add information that emphasizes a previous claim, so fits the context of expanding on the claim that coffee is served many ways by giving examples of different ways it is served.

**Distractor Explanation: Choices A and B** are both used to show that something happens despite something else, so do not fit the context of adding examples to a claim. **Choice D** is used to add more information on a topic, but it does not fit this context because the information should be a new point that is related rather than more details like examples that expand on the original point.

25. **Level:** Medium | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Transitions

**Key Explanation:** **Choice D** is the best answer. The previous sentence describes how a story was viewed in 1841. The present tense in the following sentence shows that the sentence refers to the current time. **Choice D** correctly warns the reader that the time changes from the past to the present “now.”

**Distractor Explanation:** **Choice A** is incorrect because it is used to show two things that happen at the same time, but the preceding and following sentences are in the past and present tense, respectively. Therefore, they do not occur simultaneously. **Choice B** is used to show that something happens despite something else. It does not fit the context because it is logical rather than unexpected that a very unusual piece of writing was the beginning of a genre. **Choice C** is used to show an alternative, so is not used to introduce two things that are both true.

26. **Level:** Hard | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Rhetorical Synthesis

**Key Explanation:** **Choice D** is the best answer. A “common concern” is a worry that people who know about geothermal energy might have. In this case, the worry is the “foul” or “bad” smell, and **Choice D** shows that the smell can be reduced with filters. In addition, **Choice D** highlights another benefit that might be a concern: the plants will also not emit carbon dioxide or other gasses and particles that lead to climate change.

**Distractor Explanation:** **Choice A** is incorrect because the notes do not say how easy it is to select the proper location; the notes only say that some locations are not suitable. **Choice B** is incorrect because the audience already knows what geothermal energy is, so presumably, the information is not new. Furthermore, **Choice B** does not “address” or “answer” a concern or worry; it just explains how the power is generated. **Choice C** is incorrect because the notes do not say how long other power plants last; it is possible that the life cycles of geothermal plants are average or even shorter than other types of energy-producing plants.

27. **Level:** Medium | **Domain:** EXPRESSION OF

IDEAS

**Skill/Knowledge:** Rhetorical Synthesis

**Key Explanation:** **Choice B** is the best answer because the question asks about the first ruler of Egypt. **Choice B** provides the most information about Narmer, including saying that he was the first ruler. **Choice B** includes relevant details about his unification of Upper and Lower Egypt and the approximate time the unification and his rule began.

**Distractor Explanation:** **Choice A** is incorrect because it describes the first dynasty more than the first ruler of the dynasty; it provides extra information at the expense of details that would add more about Narmer. **Choice C** is incorrect because the notes do not directly state that Narmer's tomb was made of these materials, only that the materials were common for the time. It is possible that Narmer's was one of the exceptions made from stone. **Choice D** is incorrect because it does not explain whether Narmer actually became the first ruler, so it is unclear who the first ruler was.

1. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** Choice C is the best answer because it is a strong word that means “disreputable” or “offensive.” “Obtrusive” refers to the “gentleman” that was following the girl, and Choice C clearly shows that the gentleman was not behaving properly as a gentleman should. Choice C conveys distinct contempt for the man’s actions.

**Distractor Explanation:** None of the other choices shows that the narrator took great offense at the gentleman’s behavior. Choice A means “clear” or “apparent.” Choice B refers to something that is easy to see or that calls attention to itself. Choice D refers to something that is certain to happen.

2. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** Choice C is the best answer because in the context, the blank describes the understanding that governments and society need before ocean energy deployment takes place. Choice C refers to something that is solid and able to withstand outside pressures. It shows that the understanding needs to be complete and not easy to crumble when the pressure of arguments is brought against it.

**Distractor Explanation:** None of the other choices describe the understanding that governments and society need. Choice A refers to a living thing that is healthy and full of energy. Choice B refers to something that is physically able to withstand rough treatment. When used to describe something intangible, Choice D refers

to something that is strict or uncompromising. It refers to things such as rules rather than the way something is understood.

3. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Words in Context

**Key Explanation:** Choice D is the best answer. In this context, “abstraction” refers to the “state” or “mood” that the donkey was in. The passage shows that he did not notice “the word of command” but instead “jogged onward” or “continued” because he was wondering whether he would get a cabbage stalk or not. Choice D refers to having one’s attention focused on something, so fits the context of saying the donkey was paying attention to whether he would get food or not rather than listening to commands.

**Distractor Explanation:** Choice A is incorrect because it refers to making a judgment based on specific cases, but the donkey is not judging, nor is it making a final decision. Choice B refers to a working idea used as the basis for an experiment, but a “state” or “mood” is not a hypothesis. Choice C refers to a specific decision, but the donkey has not resolved to do anything, it is just wondering and jogging along.

4. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Text Structure and Purpose

**Key Explanation:** Choice A is the best answer because “I shall not live in vain” can be paraphrased as “I would have fulfilled a useful purpose before dying.” The repetition of this phrase shows that the author feels very strongly or seriously that she should do something useful before she dies, such as helping prevent a person

from getting a broken heart or aiding a bird that has fallen from its nest.

**Distractor Explanations:** **Choice B** is incorrect because the author is not saying she is about to die, she is saying what she wants to accomplish before dying. **Choice C** is incorrect because the phrase highlights the importance of the tasks, but “futile” means “useless.” **Choice D** is incorrect because there is no clue as to whether the author has “accomplished” or “completed” the things she mentions in the poem; she just stresses that they are important things to do.

5. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Text Structure and Purpose

**Key Explanation:** **Choice C** is the best answer because the author expands on the quote by saying that veganism “has developed into a lifestyle” that incorporates other beliefs, such as animal or environmental activism and concern for physical activity. Therefore, the author is trying to say that the vegan diet includes factors or beliefs that are not solely related to a “diet” or “food.”

**Distractor Explanations:** **Choices A and B** are incorrect because, while concern for animals and environmental advocacy are often aspects of veganism, on their own, they are not the only reason for including a remark about becoming a vegan. **Choice D** is incorrect because the quote is not comparing vegans and non-vegans. It is broadening the scope of veganism to include aspects that create a lifestyle, not just the food a person eats.

6. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE

**Skill/Knowledge:** Cross-Text Connections

**Key Explanation:** **Choice A** is the best answer. The author of Text 2 refers to the difficulty of identifying objects that are not covered with ice because such objects do not reflect light. Therefore, the objects that have not been found might not have ice, and therefore, they are harder to see.

**Distractor Explanation:** **Choice B** is incorrect because the author of Text 2 does not refer to the size of the object in relation to how easy it is to isolate; it is possible that many large objects that are not covered with ice still have not been found. **Choice C** is incorrect because there is no discussion in Text 2 about the distance from the sun affecting whether it is easy to see objects or not. **Choice D** is incorrect because Text 2 implies that there are objects which have not been located, though there is no clue about how many objects there might be.

7. **Level:** Hard | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Cross-Text Connections

**Key Explanation:** **Choice C** is the best answer because it describes the most likely way that Jane Addams (Text 2) would respond to Dix’s actions to improve the conditions for the imprisoned and insane presented in Text 1. According to Text 1, Dix visited every public and private mental illness and prison facility she could to research and document in graphic detail the inhumane conditions, she then took political action and presented the information to legislature of Massachusetts which led to reform. Text 2 indicates that Addams was an advocate for social reform and dedicated her life to political action and social science research that would improve the lives of lower-class slums residents. This suggests that Addams would corroborate or support the methodology and actions used by Dix to achieve social reform.

**Distractor Explanation:** Choice A is incorrect because nothing in Text 2 suggests that Addams would dispute the effectiveness of research and documentation in achieving social reform. Text 2 confirms that Addams would support this type of action and she practiced it herself. Choice B is incorrect because Text 2 doesn't include any information suggesting that Addams placed greater significance on a personal lifetime commitment to social cause than using political action to achieve social reform. Choice D is incorrect because there's no information in Text 2 suggesting that Addams would contest or question the effectiveness of Dix's reports in achieving reform. Although Text 2 describes Addams's methodology more scientifically, it doesn't imply that Addams would be against shocking society into reformation using dramatic and emotional information.

8. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Central Ideas and Details

**Key Explanation:** Choice A is the best answer because a “controversy” is a “dispute.” One point that clouds the debate of whether the state should be invited into the Union is that there are only twelve thousand residents within the state. If there were more, the proper decision might be easier. In Lincoln’s words, “The amount of constituency, so to speak, on which the new Louisiana government rests, would be more satisfactory to all, if it contained fifty, thirty, or even twenty thousand, instead of only about twelve thousand, as it does.”

**Distractor Explanation:** None of the other choices are supported by evidence from the passage. Choice B is incorrect because the physical size of the state is not mentioned. As for population, the state is presumably smaller than others in the Union. Choice C is incorrect because

it is only established that freed slaves live in the state; no number or percentage is given. Choice D is incorrect because there is not enough evidence to determine what policies or laws the state uses.

9. **Level:** Hard | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Central Ideas and Details

**Key Explanation:** Choice C is the best answer because the text says that “researchers had yet to sample vast areas, especially during stormy autumn and winter seasons,” indicating that the results from the saildrone would fill in the missing information by taking samples during the winter.

**Distractor Explanation:** Choice A is incorrect because the saildrone was not launched to prove a point about CO<sub>2</sub> absorption. It was to collect data in order to determine patterns in the times or places that had not previously been studied much. Choice B is incorrect because the saildrone was sent to collect data, not to “test limitations.” Of course, researchers hoped that it would survive the harsh conditions and did not know if it would, but the main point of the journey was not to see if the saildrone would make it. Choice D is incorrect because the passage implies that it was already known that the Southern Ocean played a vital role. The details of that role were not known, so the winter launch was to determine certain details, not to see if it had a role at all.

10. **Level:** Easy | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Command of Evidence (Textual)

**Key Explanation:** Choice A is the best answer because the unfinished sentence says that people who eat peanut butter “may have other health benefits.” Choice A gives a very specific health

benefit that might result: less chance of heart disease.

**Distractor Explanations:** None of the other choices gives a specific example to show a health benefit of peanut butter. **Choice B** shows a potential problem: consuming too many calories. **Choice C** explains which types are better than others, but not why. **Choice D** offers serving suggestions but does not explain how nutritious the recipes are.

11. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Command of Evidence (Quantitative)

**Key Explanation:** The unfinished sentence is giving an example to illustrate the claim in the previous sentence that “it is incorrect to judge the number of dangerous encounters just by looking at deaths.” Therefore, the mission portion should emphasize a point that extends beyond deaths caused by sharks. **Choice C** effectively stresses the point because it shows that there were many more dangerous encounters in the same year, so to estimate the number of attacks, **Choice C** shows that it is better to look at all attacks rather than just fatal ones.

**Distractor Explanations:** None of the other choices offer a good example to show that “it is incorrect to judge the number of dangerous encounters just by looking at deaths.” **Choice A** is very vague and the reader does not know if the number of non-fatal attacks is high or not. It could be almost identical to the number of deaths. **Choices B** and **D** only offer more detail about deaths, so they do not emphasize how looking at deaths gives an inaccurate idea of the number of dangerous encounters.

12. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Command of Evidence (Quantitative)

**Key Explanation:** **Choice C** is the best answer because the number of tourists in Togo in 2016 was 65,000. That number is lower than the one for Nigeria, 634,000, but higher than the number for Eritrea, 28,000.

**Distractor Explanation:** **Choice A** is incorrect because, although Togo is the top row on the graph, it does not have the greatest number of tourists. That country is Nigeria in the bottom row, which had almost ten times as many visitors. **Choice B** is incorrect because the number for Togo is greater than that for Burundi, 56,000, but lower than that for Nigeria. **Choice D** is impossible to determine because the graph does not give the number of tourists for the previous year.

13. **Level:** Easy | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Inferences

**Key Explanation:** **Choice A** is the best answer because the comment that “an opportunity... kept it” explain that Elinor, the oldest daughter, convinces Mrs. Dashwood to sell the carriage despite the fact that Mrs. Dashwood herself wanted to keep it. In addition, Elinor suggests that Mrs. Dashwood limit their household to three servants. Mrs. Dashwood “defers” or “agrees” to the opinions of her daughter despite some apparent reluctance.

**Distractor Explanation:** **Choice B** is opposite of the relationship portrayed in the passage. **Choices C** and **D** are not supported by any evidence in the text.

14. **Level:** Medium | **Domain:** INFORMATION AND IDEAS

**Skill/Knowledge:** Inferences

**Key Explanation:** **Choice B** is the best answer because the author warns the buyer to do research and be cautious about any purchase, since sales pitches are by definition, “trying to sell you something.” For example, the sales claims may be higher than what an average person is able to earn. Therefore, the sellers are trying to “highlight” or “emphasize” the best possible aspects of the franchise so that you buy into the scheme.

**Distractor Explanation:** **Choice A** is incorrect because the author only warns that some claims may be elevated; there is no evidence that “most” are not realistic or tell the truth. **Choice C** is impossible to determine from the text because there is no discussion about laws that protect the seller. **Choice D** is incorrect because the author does not delve into the success or failure of a franchise. The author only indicates that an investor needs to do proper research.

15. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice B** is the best answer because it is used to introduce a clause that describes the previous person. In this case, it correctly shows that “Ernest Hemingway” was the person that “received the 1954 Nobel Prize for Literature.”

**Distractor Explanation:** **Choice A** is incorrect because it creates a complete clause that is not subordinated in any way. An idea separated by commas in the middle of another clause must have a word showing how it relates to the other idea. **Choice C** is incorrect because it is used with

objects, not people. In addition, “that” is not used following a comma. **Choice D** is incorrect because it is a pronoun used to show the object of a verb, but the following clause needs a subject. That relationship can be clearly shown by substituting the proper noun into the blank: “Hemingway received the prize.”

16. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice B** is the best answer. The underlined portion is part of a list joined by “and.” Each part of such a list needs to have the same grammatical structure. In this case, the first two items are -ing verbs that show the method of the reduction following “by”: “limiting... emissions,” and “encouraging...innovation.” **Choice B** is another -ing verb, so fits the same structure.

**Distractor Explanation:** All of the other choices can be eliminated because they do not maintain the same structure as the other two items in the list joined by “and.” **Choice A** is a complete clause, “it is....” **Choices C** and **D** are noun phrases, “the right...” and “increased competition....”

17. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice C** is the best answer because it acts as a noun and is used to introduce a clause that describes the previous noun. In this case, **Choice C** shows that body temperature is what peaks in the early evening.

**Distractor Explanation:** **Choice A** is incorrect because it forms a comma splice between two

ideas that can stand on their own as sentences. **Choice B** is incorrect because, though it is used to identify time, it does not act as a noun. In this sentence, “peaks” needs a subject. **Choice D** is incorrect because it is not used following a comma; “that” is used to make a general noun more specific, not add more information regarding the noun as it is given.

18. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Form, Structure, and Sense

**Key Explanation:** **Choice D** is the best answer because the -ing form of a verb is used to create a noun phrase out of an action, and “known for” is a phrasal verb that needs to be followed by a noun.

**Distractor Explanation:** **Choices A** and **B** are incorrect because they are verb forms that are not used with “known for.” **Choice C** is a noun, but in the sentence, the blank is followed by another noun, “classic Spanish forms.” A noun should not be directly followed by another noun without some method of indicating how they are related to each other.

19. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS

**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice A** is the best answer. The information before and after the underlined portion form complete ideas, and can also stand as two complete sentences.

**Distractor Explanation:** **Choice B** is incorrect because it creates a comma splice between two independent clauses. One of the clauses needs to be subordinated with a transition word for a comma to be used. **Choice C** is incorrect because

both the portion before and the portion after a semicolon should be an independent clause. However, in this case, “and” subordinates the second half so that it cannot stand on its own. **Choice D** is incorrect because a single dash needs to follow a complete sentence, but the “and” in front of the dash is left hanging.

20. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS  
**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice B** is the best answer. When three or more nouns are joined in a list using “and,” there should be a comma after all the nouns that precede “and.”

**Distractor Explanation:** All of the other choices can be eliminated because they are not standard punctuation for a list joined by “and.” **Choice A** is incorrect because there is no punctuation at all to show where one noun ends and the other begins. **Choice C** is incorrect because there should be a comma after the noun “emotions” but none after “and.” **Choice D** is incorrect because semicolons are only used to join items in a list if there are commas within the ideas, but each noun is a single word.

21. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS  
**Skill/Knowledge:** Boundaries

**Key Explanation:** **Choice A** is the best answer. “a ring of massive stones erected around 2,500 B.C.” is added information that describes “Stonehenge.” Added information needs to be separated from the main clause “Stonehenge is one of...” using the same punctuation at both ends. In this case, the end punctuation after “2,500 B.C.” is a dash, so the added information should also be preceded with a dash.

**Distractor Explanation:** Choice B is incorrect because the dash divides “of” from its object. The resulting main clause is illogical: Stonehenge, a ring of is one of....” Choice B is incorrect because the punctuation needs to be the same at the start and end of information inserted into a sentence’s main clause. It is possible to use commas, but there should also be one after “2,500 B.C.” In addition, a single dash needs to follow a complete clause, but there is no active verb in the first section. Choice D is incorrect because a colon needs to follow an independent clause, but the preceding portion is only a noun.

22. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Transitions

**Key Explanation:** Choice D is the best answer. The previous information says that Joel did not care about finishing a high school degree, but the following says that he later went to the effort of obtaining it. Choice D fits that context because it is used to show that the following information happened despite the previous claim. In other words, he finished a degree despite saying he did not care about getting one.

**Distractor Explanation:** Choices A and C are incorrect because they refer to the following happening as a certain or logical result of the previous claim. However, this text refers to something that happens unexpectedly; Joel got a degree although he said he did not want one. Choice B is incorrect because it signifies that the previous and following claims happen at the same time, but in this case, the events occur 25 years apart.

23. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Transitions

**Key Explanation:** Choice B is the best answer because it is used to show that something happens even though something else happens. In this case, Choice B accurately shows that the main idea of the sentence, not finding the cause of the shipwreck, occurred even though the first idea in the sentence, the fame of the ship, existed. In other words, even though the shipwreck was famous, no one knows why it sank.

**Distractor Explanation:** Choice A is incorrect because it offers the first idea as a reason for the second, but it is not necessarily reasonable that something very famous is still a mystery. Choices C and D are incorrect because they do not grammatically fit in the context. They act as separate linking words, so the result is that “its fame” becomes an appositive, but “its fame” is not another way of saying “the exact cause.”

24. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS  
**Skill/Knowledge:** Transitions

**Key Explanation:** Choice A is the best answer. The previous portion points out the actions that certain organizations are taking for safety, and the following portion says those actions are “not sufficient” or “not good enough.” Choice A is used to show a contrast of ideas, so accurately cues the reader that the following idea casts doubt on the first claim.

**Distractor Explanation:** Choice B is incorrect because it is used to highlight a similarity, but the preceding and following ideas are opposite as far as ensuring safety for travel in space. Choice C is used to show a logical result of the preceding argument, but in this case, the idea that smaller items can cause damage is not a logical result of the previous discussion that steps are taken for safety reasons. Choice D is used to show another possibility or choice, so does not fit the context

of describing the current situation and a problem with the current situation.

25. **Level:** Medium | **Domain:** EXPRESSION OF IDEAS

**Skill/Knowledge:** Rhetorical Synthesis

**Key Explanation:** **Choice C** is the best answer because the notes say that saltwater tanks can only have a 2-degree Celsius variation, but freshwater tanks can have 8 degrees in variation. Therefore, the range for saltwater tanks is much lower than for freshwater tanks.

**Distractor Explanation:** **Choice A** is incorrect because it highlights a similarity rather than a “key difference” between the care of the two types of fish. **Choice B** is incorrect because the passage does not say that freshwater fish “need” or “must” be kept in tanks with plants; it only says that they are frequently kept in such tanks. Furthermore, there is no discussion whether saltwater fish can be kept with plants or not. **Choice D** is incorrect because it only mentions two things from the passage which are not necessarily related to each other and are not opposite in any way; therefore, it does not highlight a crucial difference.

26. **Level:** Medium | **Domain:** EXPRESSION OF IDEAS

**Skill/Knowledge:** Rhetorical Synthesis

**Key Explanation:** **Choice C** is the best answer. The audience is concerned about improving innovation, and **Choice C** directly “addresses” or “responds to” that question by offering a solution based on Mayo’s theory: giving workers more freedom.

**Distractor Explanation:** **Choice A** is incorrect because it only discusses why innovation does not occur; it does not offer any solutions for increasing

innovation or solving the problem of boredom.

**Choice B** is incorrect because it does not show how Mayo’s theory affects innovation; it points out a way to get tasks done, but not necessarily in a creative way. Furthermore, it points out a problem that could negate any benefits of the theory. **Choice D** is extremely vague; it says that there are positive points regarding innovation, but the audience does not know what these positive points are. The negative aspect of stress may not outweigh the benefits as far as the audience is concerned; the audience does not have enough information to make a clear judgment.

27. **Level:** Medium | **Domain:** EXPRESSION OF IDEAS

**Skill/Knowledge:** Rhetorical Synthesis

**Key Explanation:** **Choice D** is the best answer because the temperature highs are compared so the reader can see that there is at least a 12-degree difference between the high extremes, which implies a generally large difference between average temperatures at the two poles.

**Distractor Explanation:** **Choice A** is incorrect because the temperatures of the North Pole are not given in the notes, so it is possible that the temperatures are just as extreme, though at a higher overall range if the highs are above freezing. **Choice A** does not offer the reader any idea of what the temperatures at the North Pole really are for comparison. For a hypothetical example based on **Choice A**, temperatures at the North Pole could be of a less extreme range, but colder, from  $-90$  to  $-85$  C. **Choice B** is incorrect because it emphasizes a similarity rather than a difference between the places. **Choice C** is incorrect because it does not show how the places are different; the scientists could have studied continental drift from a boat and both locations are in the ocean.

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1. **Level:** Medium | **Domain:** ADVANCED MATH  
**Skill/Knowledge:** Nonlinear functions | **Testing point:** Determining the equation of a parabola from its graph

**Key Explanation:** Choice C is correct. The general equation of a parabola is given by  $y = a(x - h)^2 + k$  where  $(h, k)$  is the vertex. Based on the graph, the vertex of the parabola is at  $(-1, -6)$ . Substituting the coordinate of the vertex to the general equation yields  $y = a(x + 1)^2 - 6$ . Since the graph opens upward, the leading coefficient is greater than zero. This means that  $a$  is positive and based on the choices,  $a$  is equal to 3. Substituting 3 to the equation of the parabola yields  $y = 3(x + 1)^2 - 6$ . Expanding the right side of the equation yields  $y = 3x^2 + 6x - 3$ .

**Distractor Explanations:** Choice A is incorrect and may result from an error in expanding the equation of the parabola. Choices B and D are incorrect because  $a$  is negative, which means that the graph opens downward.

2. **Level:** Easy | **Domain:** ADVANCED MATH  
**Skill/Knowledge:** Nonlinear functions | **Testing point:** Determining the products of the solutions to a quadratic equation

**Key Explanation:** To find the product of the solutions, use the formula  $\left(\frac{c}{a}\right)$ , where  $a$  is the coefficient of  $x^2$  and  $c$  is the constant. From the given equation  $a = 3$  and  $c = 15$ . Therefore, the product of the solutions is  $\left(\frac{15}{3}\right)$ , which is equal to 5.

3. **Level:** Medium | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS  
**Skill/Knowledge:** Probability and conditional probability | **Testing point:** Calculating probability of simple events

**Key Explanation:** Choice C is correct. The probability of a simple event occurring can be calculated using the formula

$$p = \frac{\text{no. of favorable outcomes}}{\text{total no. of possible outcomes}}$$
. Since a heart is picked at first and is not put back in the deck, there are only 12 hearts left in a deck of now 51 cards. The probability of picking a heart card for the second time would then, therefore, be  $\frac{12}{51}$ , which is 12 heart cards out of the 51 cards on the deck.

**Distractor Explanations:** Choice A is incorrect. This would be the probability of picking the first heart from the deck of 52 cards. Choice B is incorrect and may result from not subtracting the first card picked from the initial total number of cards. Choice D is incorrect because it represents the probability of not picking a second heart.

4. **Level:** Easy | **Domain:** ADVANCED MATH  
**Skill/Knowledge:** Equivalent expressions | **Testing point:** Matching coefficients

**Key Explanation:** Choice B is correct. To solve this, use the distributive property which yields  $6xy^2 + 18x^2y - 6x^2y - 2xy^2$ . Combining like terms yields  $4xy^2 + 12x^2y$ .

**Distractor Explanations:** Choices A, C, and D are incorrect and may result from a conceptual or calculation error.

5. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS

**Skill/Knowledge:** Percentages | **Testing point:** Using discounts and percentage increase

**Key Explanation:** Since the price of the dress first increases by 15%, then it becomes  $115\% \times 200 = 230$ . Therefore, the price after 15<sup>th</sup> May is \$230. However, she bought it at a discounted price. Applying the discount, the amount that she paid for the dress is  $70\% \times 230 = \$161$ .

6. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Using the difference of two squares to solve a system of equations

**Key Explanation:** Choice A is correct. The first equation contains the difference of two squares which is in the form of  $a^2 - b$ . This can be factored into  $(a + b)(a - b)$ .

Therefore,

$$(x - y)(x + y) = x^2 - y^2.$$

The first equation then becomes

$(x - y)(x + y) = 12$ . Substituting the value of  $(x - y)$  from the second equation into the first equation yields  $2(x + y) = 12$ .

Dividing both sides of the equation by 2 yields  $(x + y) = 6$ .

**Distractor Explanations:** Choice B is incorrect and may result from solving the value of  $x$ . Choice C is incorrect and may result from solving the value of  $y$ . Choice D is incorrect and may result from solving the value of  $y - x$ .

7. **Level:** Medium | **Domain:** ALGEBRA

**Skill/Knowledge:** Systems of two linear equations in two variables | **Testing point:** Solving system of linear equations for  $x$  and  $y$

**Key Explanation:** Choice A is correct. Solve for the value of  $x$  and  $y$  by using the elimination method.

Multiplying the first equation yields

$$3(2x + y) = 2 \text{ or } 6x + 3y = 6.$$

Subtracting the second equation from the first equation yields  $6x + 3y - 3y + x = 6 - 20$ . Combining like terms yields  $7x = -14$ . Dividing both sides of the equation by 7 yields  $x = -2$ . To find  $y$ , replace  $x$  with the value  $-2$  in the first equation.

$$\text{This yields } 6(-2) + 3y = 6 \text{ or } -12 + 3y = 6.$$

Adding 12 to both sides of the equation yields  $3y = 18$ .

Dividing both sides of the equation by 3 yields  $y = 6$ .

$$\text{The value of } xy = (-2)(6) = -12.$$

**Distractor Explanations:** Choices B and C are incorrect because these are the values of  $x$  and  $y$  respectively. Choice D is incorrect because it would be the value of  $(y/x)$ .

8. **Level:** Medium | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Solving absolute value equations

**Key Explanation:** Isolate the absolute value by dividing both sides of the equation by 2.

$$\text{This yields } \frac{2|x + 4|}{2} = \frac{12}{2} \text{ or } |x + 4| = 6.$$

Solve the values of  $x$  by equating the content of the absolute value to the positive and negative values of the constant.

Determine the first value of  $x$  using  $x + 4 = 6$ .

Subtracting 4 from both sides of the equation yields  $x = 2$ .

Determine the second value of  $x$  using  $x + 4 = -6$ .

Subtracting 4 from both sides of the equation yields  $x = -10$ .

Since the problem only requires the positive value of  $x$ , the answer is 2.

9. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS

**Skill/Knowledge:** One-variable data: distributions and measures of center and spread  
**Testing point:** Evaluating and comparing measures of center and spread

**Key Explanation:** Choice B is correct. The data being added would be an outlier on the higher end of the data set. The add-on changes the maximum of the data set and this would mean that the range would increase. The outlier would also increase the mean. The median will remain the same and will still be 1.39 because it is the 7<sup>th</sup> number in the new set of data. The standard deviation will increase as the data point is an outlier.

**Distractor Explanations:** Choices A, C, and D are incorrect. They are false statements.

10. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Area and volume | **Testing point:** Area of a circle in an inscribed polygon

**Key Explanation:** Choice B is correct. Since the circle is inscribed in a square, the side length of the square is equivalent to the diameter of the circle. Therefore, if the diameter is 14cm, the radius would be half, which is 7cm. The area would therefore be  $7^2\pi$  or  $49\pi$ .

**Distractor Explanations:** Choice A is incorrect. It is the area of a circle if the radius is 14cm. Choice C is incorrect because this is the circumference of the circle. Choice D is incorrect because this is twice the value of the circle's area.

11. **Level:** Hard | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear functions | **Testing point:** Using linear transformations

**Key Explanation:** The function  $f(x)$  translated 2 units to the left will become  $f(x + 2)$ .

This yields  $y = 3(x + 2) + 5$  or  $y = 3x + 11$ .

The function  $f(x)$  translated 1 unit up will become  $f(x) + 1$ .

This yields  $y = 3x + 11 + 1$  or  $y = 3x + 12$ .

Therefore, the new  $y$ -intercept is 12.

12. **Level:** Medium | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear inequalities in one or two variables | **Testing point:** Finding the solutions to an inequality

**Key Explanation:** Choice D is correct. To find the solution, substitute the choices for each inequality and verify if the statements are true or false.

Plugging in Choice D (3, 1) to the first inequality yields  $(-2)(1) > -4$  or  $2 > -4$  which is true.

Plugging (3, 1) into the second inequality yields  $3(3) - 1 > 3$  or  $5 > 3$  which is also true.

Since both statements are true when the point (3, 1) is plugged into both inequalities, then the correct answer is Choice D.

**Distractor Explanations:** Choice A is incorrect.

Plugging in (1, 2) to both inequalities yields  $-4 > -4$  and  $1 > 3$  which are both false statements.

Choice B is incorrect. Plugging in (1, 3) to both inequalities yields  $-6 > -4$  and  $0 > 3$  which are both false statements.

Choice C is incorrect. Plugging in (2, 4) to both inequalities yields  $-8 > -4$  and  $2 > 3$  which are both false statements.

13. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Circles | **Testing point:** Using the midpoint formula and the equation of a circle

**Key Explanation:** Choice B is correct.

The standard equation of a circle is given by  $(x - h)^2 + (y - k)^2 = r^2$  where  $(h, k)$  is the center and  $r$  is the radius. The endpoints of the circle are  $(-6, 10)$  and  $(2, 10)$ . The midpoint of these two points would be  $\left(\frac{-6+2}{2}, \frac{10+10}{2}\right) = (-2, 10)$ , which is also the coordinates of the center of the circle. The radius of the circle can be solved by calculating the distance between the center and one of the endpoints of the diameter. Substituting  $(2, 10)$  and  $(-2, 10)$  to

the formula  $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$  yields

$$\sqrt{(10 - 10)^2 + (-2 - 2)^2} = 4$$

4 would therefore be the radius.

Plugging in the coordinates of the center and the radius to the standard equation yields  $(x + 2)^2 + (y - 10)^2 = 16$ .

**Distractor Explanations:** Choices A, C, and D are incorrect and may result due to conceptual errors such as identifying the center from the equation of the circle.

14. **Level:** Medium | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear functions | **Testing point:** Finding the value of a composite function

**Key Explanation:** Choice C is correct. To solve this, calculate for  $g(2)$  first.

Substituting 2 to  $g(x)$  yields  $g(2) = 2(2) + 3$  or  $g(2) = 4 + 3$ .

Combining like terms yields  $g(2) = 7$ .

Since  $g(2) = 7$ , then  $f(g(2)) = f(7)$ .

Substituting 7 yields  $f(7) = 7 + 2$  or  $f(7) = 9$ .

**Distractor Explanations:** Choice A is incorrect because this is the value of  $g(2)$ . Choice B is incorrect because this is the value of  $f(2)$ . Choice D is incorrect because this would be the value of  $g(f(2))$ .

15. **Level:** Medium | **Domain:** ADVANCED MATH  
**Skill/Knowledge:** Nonlinear functions | **Testing point:** Solving for the  $y$ -intercept in a nonlinear function

**Key Explanation:** The  $y$ -intercept is when  $x = 0$ . Substituting 0 for  $x$  in the given equation yields  $y = 300^0 + 5$ .

Any number raised to the power of 0 is equal to 1. The equation becomes,  $y = 1 + 5$  or  $y = 6$ . Therefore, the  $y$ -intercept is 6.

16. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear inequalities in one or two variables | **Testing point:** Finding the equation of an inequality from its graph

**Key Explanation:** Choice B is correct. The solutions to the inequality are above the line which would mean that the  $y$  values are greater. This means that the equation will be in the form of  $y > mx + b$ . Hence, the possible answer is either choice A or B. Since the dash line falls down from left to right, the value of the  $slope(m)$  is negative. Between Choices A and B, only Choice A has a negative slope. Therefore, the graph represents the inequality  $y > -2x + 3$ .

**Distractor Explanations:** Choice A is incorrect because it has a positive slope. Choices C and D are incorrect because they both use less than symbols for the inequalities.

17. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear functions | **Testing point:** Finding exponential functions from graphs

**Key Explanation:** Choice C is correct. Since the graph rises from left to right, it is an exponential growth function in the form of  $f(x) = a(1 + r)^x$  where  $a$  is the initial amount,  $r$  is the growth rate,

and  $x$  is the number of time intervals. Since the graph represents an exponential growth function,  $(1 + r) > 1$ . Hence, the possible answers are **Choices A or C** because  $1.03 > 1$ . To determine the correct answer between **Choice A** and **C**, find the value of  $a$ . Looking at the graph, it intersects at  $(0, 180)$  which means that the  $y$ -*intercept* is 180. Thus, the initial amount is 180 or  $a = 180$ . Therefore, the correct answer is **Choice C**.

**Distractor Explanations:** **Choices A and D** are incorrect. They both have  $y$ -*intercepts* greater than 180. **Choice B** is incorrect. It represents a decaying exponential function.

18. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear equations in two variables | **Testing point:** Matching coefficients

**Key Explanation:** **Choice D** is correct. To solve this, use the distributive property to simplify the left side of the equation.

This yields  $3x + 2x + 8y = ax + by$ .

Combining like terms yields  $5x + 8y = ax + by$ .

Matching the coefficients yields  $a = 5$ .

**Distractor Explanations:** **Choices A, B, and C** are incorrect and may result from a conceptual or calculation error.

19. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear inequalities in one or two variables | **Testing point:** Writing the solution of an inequality in interval notation

**Key Explanation:** To solve for this inequality, divide both sides by  $-3$  which yields  $\frac{-3y}{-3} > \frac{-15}{-3}$  or  $y < 5$ . Since  $y$  can be any number less than 5, its value approaches negative infinity. Therefore, the interval notation is  $(-\infty, 5)$ .

20. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Right triangles and trigonometry | **Testing point:** Using trigonometric identities

**Key Explanation:** **Choice B** is correct. Since  $\sin(3x) = \cos(x + 10)$ , the two angles  $(3x)$  and  $(x + 10)$  are complementary and add up to  $90^\circ$ . Therefore,  $(3x) + (x + 10) = 90$ .

Combining like terms yields  $4x + 10 = 90$ .

Subtracting 10 from both sides of the equation yields  $4x = 80$ .

Dividing both sides of the equation by 4 yields  $x = 20^\circ$ .

**Distractor Explanations:** **Choice A** is incorrect and may result from a conceptual or calculation error. **Choice C** is incorrect and may result from solving the value of  $(x + 10)$ . **Choice D** is incorrect and may result from solving the value of  $3x$ .

21. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear functions | **Testing point:** Determining the type of equation from data given

**Key Explanation:** **Choice A** is correct. Since Amanda doubles the amount of money she will save every week, the amount that she puts in every week grows exponentially. This exponential growth can be represented by the model  $s = \$10(2)^t$ , where  $t$  is time in weeks and  $s$  is the amount that she will save in the given week.

**Distractor Explanations:** **Choices B and D** are incorrect. The function is exponential and not linear. **Choice C** is incorrect. The amount she saves per week increases exponentially and does not decrease.

22. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear equations in one variable

**Testing point:** Solving for  $x$  in a linear equation

**Key Explanation:** Choice B is correct. The value of  $x$  can be solved by subtracting 8 from both sides which yields  $4x + 8 - 8 = 24 - 8$  or  $4x = 16$ .

Dividing both sides of the equation by 4 yields

$$x = 4.$$

**Distractor Explanations:** Choices A, C, and D are incorrect and may result from a conceptual or calculation error.

## 1. Level: Easy | Domain: ALGEBRA

**Skill/Knowledge:** Linear equations in one variable

**Testing point:** Solving for  $x$  in a linear equation

**Key Explanation:** Choice B is correct. To solve for this, start by factoring out the 7 which yields  $7(x + 4) = 112$ . Then divide both sides of the

equation by 7 which yields  $(x + 4) = \frac{112}{7}$  or

$$x + 4 = 16.$$

**Distractor Explanations:** Choice A is incorrect and may result from solving the value of  $x$  when  $x + 4 = 0$ . Choice C is incorrect and may result from a miscalculation or conceptual error. Choice D is incorrect and may result from only solving for the value of  $x$ .

## 2. Level: Medium | Domain: GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Area and volume | Testing point: Using ratios similar figures

**Key Explanation:** The ratio of the radius of the ball to that of the prototype is  $3 : 1$ . Since the volume of a sphere is directly proportional to the cube of its radius ( $V \propto r^3$ ), the ratio of their volumes should be  $3^3 : 1^3$  or  $27 : 1$ . And given that the volume of the prototype is  $10\text{cm}^3$ , the volume of the ball will be  $27 \times 10 = 270\text{cm}^3$ .

## 3. Level: Easy | Domain: ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Using the discriminant to find the number of solutions of a quadratic equation

**Key Explanation:** Choice A is correct. A quadratic with one solution has a discriminant equal to 0 which means  $b^2 - 4ac = 0$ .

To get the values of  $a$ ,  $b$ , and  $c$ , equate the two equations which yield  $2x + k = x^2 - 10x + 30$ . Subtracting  $2x$  and  $k$  from both sides of the equation yields  $0 = x^2 - 12x + 30 - k$ . This means that  $a = 1$ ,  $b = -12$ , and  $c = 30 - k$ .

Substituting the values of  $a$ ,  $b$ , and  $c$  to the discriminant yields  $(-12)^2 - 4(1)(30 - k) = 0$ .

Using the distributive property yields  $144 - 120 + 4k = 0$ .

Combining like terms yields  $24 + 4k = 0$ .

Subtracting 24 from both sides of the equation yields  $4k = -24$ .

Dividing both sides of the equation by 4 yields  $k = -6$ .

**Distractor Explanations:** Choices B and D are incorrect and could be a result of miscalculation or conceptual error. Choice C is incorrect because this is the negative value of  $k$ .

## 4. Level: Hard | Domain: ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Using exponent rules

**Key Explanation:** Choice D is correct.

To solve for this, equate the exponents by making the bases the same. Since 9, 27 and 81 are multiples of 3, then every base will be converted to 3. This yields  $9 = 3^2$ ,  $27 = 3^3$ , and  $81 = 3^4$ . Hence

the equation will now become  $\frac{3^{3(x-1)}}{3^{4y}} = 3^2$  or

$$\frac{3^{3x-3}}{3^{4y}} = 3^2.$$

Since the terms on the left side of the equation are being divided, the exponents will be subtracted.

This yields  $3^{3x-3-4y} = 3^2$ . Equating the exponents yields  $3x - 3 - 4y = 2$ . Adding 3 to both sides of the equation yields  $3x - 4y = 5$ . To find the value of  $6x - 8y$ , multiply both sides of the equation by

2 which yields  $2(3x - 4y) = 2(5)$ .

Using the distributive property yields  $6x - 8y = 10$ .

**Distractor Explanations:** Choice A is incorrect and may result from solving the value of  $\frac{6x - 8y}{5}$ .

Choice B is incorrect and may result from solving the value of  $3x - 4y$ . Choice C is incorrect and may result from solving the value of  $\frac{2(6x - 8y)}{5}$ .

5. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Right triangles and trigonometry | **Testing point:** Using the pythagorean theorem

**Key Explanation:** The sides of a square are equal. Therefore, if the sides are  $s$ , then the diagonal will be  $s\sqrt{2}$ , which can be proven using the Pythagorean theorem  $a^2 + b^2 = c^2$ . Since  $s\sqrt{2} = 16\sqrt{2}$ , then  $s = 16$ . The perimeter of a square can be found by  $4s$  which is  $4(16) = 64$ .

6. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear functions | **Testing point:** Matching a linear equation to its graph

**Key Explanation:** Choice C is correct. Rewrite the given equation into slope–intercept form of  $y = mx + b$  where  $m$  is the slope of the line and  $b$  is the  $y$ –intercept.

Subtracting  $12x$  from both sides of the equation yields  $4y = -12x + 8$ .

Dividing both sides of the equation by 4 yields  $y = -3x + 2$ . Thus, the slope of the line is  $-3$  and a  $y$ –intercept of 2. Since the slope is negative, the graph goes down from left to right. Hence, the answer can only be choice C or D. To determine the correct answer between the two choices, solve for the  $x$ –intercept by substituting 0 to  $y$  in the

equation. This yields  $0 = -3x + 2$ . Adding  $3x$  to both sides of the equation yields  $3x = 2$ . Dividing 3 from both sides of the equation yields  $x = \frac{2}{3}$ . Since choice C is the only graph that has a  $y$ –intercept of 2, an  $x$ –intercept of  $\frac{2}{3}$ , and a negative slope, it is the correct answer.

**Distractor Explanations:** Choices A and B are incorrect because they both represent a linear equation with a positive slope. Choice D is incorrect because it has an  $x$ –intercept of 6.

7. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Systems of two linear equations in two variables | **Testing point:** Working with parallel lines and linear systems with no solution

**Key Explanation:** To have no solutions means that the lines are parallel and have the same slope.

The slope of the first linear equation is  $\frac{3}{2}$ . Since  $p$  represents the slope of the second equation, then  $p = \frac{3}{2}$  which makes both lines parallel.

8. **Level:** Hard | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear functions | **Testing point:** Using exponential growth equation

**Key Explanation:** Choice C is correct. The original equation requires  $t$  in years. Since a year has 12 months, then  $\frac{m}{12} = t$ . This can be best represented by the model in C.

**Distractor Explanations:** Choices A, B, and D are incorrect and may result from a conceptual error.

9. **Level:** Medium | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Equivalent expressions

**Testing point:** Rewriting the equation and solving for the variable

**Key Explanation:** Choice A is correct. Solve for  $A$  by isolating it and then simplifying the

equation. Subtracting  $\frac{7}{x-3}$  from both sides of

the equation yields  $\frac{-2x^2 + 5x + 10}{x-3} - \frac{7}{x-3} = A$

or  $\frac{-2x^2 + 5x + 3}{x-3} = A$ . Factoring the numerator

on the left side of the equation yields

$\frac{(-2x-1)(x-3)}{x-3} = A$ . Canceling out  $(x-3)$  yields

$-2x-1 = A$  or  $A = -2x-1$ .

**Distractor Explanations:** Choice B is incorrect and may result due to calculation errors. Choice C is incorrect and may result from solving the value of  $-A$ . Choice D is incorrect. This would be the difference between  $-2x^2 + 5x + 10$  and  $x-3$ .

10. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Systems of two linear equations in two variables | **Testing point:** Solving the system of linear equations

**Key Explanation:** Choice B is correct. Solve the system of equations by solving for  $y$  in the first equation and substituting it to the second equation.

Dividing both sides of the first equation by  $-5$

yields  $-\frac{3}{5}x = y$ .

Substituting  $y$  to the second equation yields

$$2x + 3\left(-\frac{3}{5}x\right) = -1 \text{ or } 2x - \frac{9}{5}x = -1.$$

Combining like terms yields  $\frac{1}{5}x = -1$ .

Multiplying 5 to both sides of the equation yields  $x = -5$ .

**Distractor Explanations:** Choice A is incorrect.

This is the value of  $y$ . Choices C and D are incorrect and may result due to a calculation or conceptual error.

11. **Level:** Hard | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Using the discriminant to find the number of solutions to a quadratic equation.

**Key Explanation:** For a quadratic equation to have two distinct solutions, the discriminant  $b^2 - 4ac$  must be positive. In the given equation,  $a = 4$ ,  $b = -12$ , and  $c = k$ .

Substituting the values of  $a$ ,  $b$  and  $c$  to get the discriminant yields  $(-12)^2 - 4(4)(k)$  or  $144 - 16k$ . Since the discriminant must be positive, it must be greater than zero which is represented by

$$144 - 16k > 0.$$

Adding 16k to both sides of the inequality yields  $144 > 16k$ .

Dividing 16 from both sides of the inequality yields  $9 > k$  or  $k < 9$ .

The next integer number lower than 9 is 8.

Therefore, the correct answer is 8.

12. **Level:** Easy | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear equations in one variable

**Testing point:** Finding the solutions to a linear equation

**Key Explanation:** Choice A is correct. Using the distributive property to simplify the equation yields  $3x + 18 + x = 4x + 5$  or  $4x + 18 = 4x + 5$ .

Subtracting  $4x$  from both sides of the equation yields  $18 = 5$  or  $13 = 0$  which is a false statement.

This implies that there is no solution.

**Distractor Explanations:** Choice B is incorrect. For a linear equation to have one solution, the value of the variable can be solved.

Choice C is incorrect. Linear systems do not have 2 solutions.

Choice D is incorrect. For a linear system to have infinite solutions, the simplified equation must be a true statement.

13. **Level:** Hard | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Equivalent expressions

**Testing point:** Adding rational expressions with fractions

**Key Explanation:** Choice A is correct.

Simplify the denominator first.

$$\text{This yields } \frac{1}{x-2} + \frac{1}{x+2} = \frac{x+2+x-2}{x^2-4} = \frac{2x}{x^2-4}$$

Simplifying the whole fraction yields

$$\frac{\frac{1}{2x}}{x^2-4} = \frac{x^2-4}{2x}$$

**Distractor Explanations:** Choice B is incorrect and may result from an error in adding the contents in the denominator  $x$ . Choice C is incorrect because it is only the simplified denominator, not the whole fraction. Choice D is incorrect and may result from miscalculation or conceptual errors.

14. **Level:** Hard | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Circles

**Testing point:** Using circle theorems and converting degrees to radians

**Key Explanation:** Choice C is correct. The measure of a circumscribed angle and its corresponding central angle are supplementary. Hence,  $\angle \text{PSR} + \angle \text{PQR} = 180^\circ$ .

Substituting the value of the central angle  $\angle \text{PSR}$  yields  $80^\circ + \angle \text{PQR} = 180^\circ$ .

Subtracting  $80^\circ$  from both sides of the equation yields  $\angle \text{PQR} = 100^\circ$ .

Converting the value of  $\angle \text{PQR}$  to radians yields

$$100^\circ \times \frac{\pi}{180^\circ} = \frac{5}{9}\pi. \text{ Since } \angle \text{PQR} = a\pi, \text{ then } a = \frac{5}{9}.$$

**Distractor Explanations:** Choices A, B, and D are incorrect and may result from a conceptual or calculation error.

15. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Circles | **Testing point:** Finding the area of a circle given its circumference

**Key Explanation:** The circumference of a circle is found by the formula  $\pi D$  where  $D$  is the diameter of the circle. Since the circumference is  $12\pi$  then  $D = 12$ . The radius is therefore 6, and the area of the circle is  $\pi r^2 = \pi(6)^2 = 36\pi$ .

16. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Equivalent expressions

**Testing point:** Converting from exponents to radicals

**Key Explanation:** Choice D is correct. Expressing the radical as exponent yields  $3\sqrt[3]{p^3 p^2}$ . Since the same variables are being multiplied, their exponents will be added.

$$\text{Hence, } \frac{1}{3} + \frac{1}{2} = \frac{5}{6}.$$

The expression now becomes  $3p^{\frac{5}{6}}$ . Converting the exponent back to radical yields  $3\sqrt[6]{p^5}$ .

**Distractor Explanations:** Choices A, B, and C are incorrect and may result from a conceptual or calculation error.

17. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY

**Skill/Knowledge:** Area and volume | **Testing point:** Finding the volume of a cylinder

**Key Explanation:** Choice B is correct. The volume of a cylinder is found using the formula  $V = \pi r^2 h$  where  $r$  is the radius and  $h$  is the height. Substituting the given radius and height to the formula yields  $V = \pi 9^2 6 = 486\pi$ .

**Distractor Explanations:** Choice A is incorrect and may result from solving the surface area of the cylinder. Choice C is incorrect and may result from solving the area of one base of the cylinder. Choice D is incorrect and may result from solving the lateral area of the cylinder.

18. **Level:** Hard | **Domain:** ALGEBRA

**Skill/Knowledge:** Linear equations in two variables | **Testing point:** Working with parallel lines and their equations

**Key Explanation:** Choice A is correct. For lines to be parallel, they must have proportional coefficients of  $x$  and  $y$ . To make the coefficients of  $x$  to be the same, multiply the first equation by  $-2$ . This yields  $-2(3x + 5y = 6)$  or  $-6x - 10y = -12$ . Matching the coefficients of  $y$  in  $-6x - 10y = -12$  and  $-6x + py = 18$  yields  $p = -10$ .

**Distractor Explanations:** Choices B and D are incorrect and may result from a conceptual or calculation error. Choice C is incorrect. It is the negative of option A.

19. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Equivalent expressions

**Testing point:** Matching coefficients

**Key Explanation:** Using the distributive property, the left side of the equation becomes  $15x^2y + 6xy + 6xy - 2y$ . Combining like terms yields  $15x^2y + 12xy - 2y = ax^2y + bxy + cy$ . Matching the coefficients yields  $a = 15$ ,  $b = 12$ , and  $c = -2$ . Therefore,  $b$  is equal to 12.

20. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Finding the number of solutions of an absolute value equation

**Key Explanation:** Choice C is correct. Isolating the absolute value and simplifying the equation yields  $|x + 4| = \frac{-8}{-2}$  or  $|x + 4| = 4$ . Since the absolute value is being compared with a positive number, it has two solutions.

**Distractor Explanations:** Choice A is incorrect. For an absolute value to have 0 or no solution, the absolute value should be less than or equal to a negative number. Choice B is incorrect. For an absolute value to have 1 solution, it should be equal to zero. Choice D is incorrect. For an absolute value to have infinite solutions, it should be greater than a negative number.

21. **Level:** Easy | **Domain:** ADVANCED MATH

**Skill/Knowledge:** Nonlinear equations in one variable and systems of equations in two variables

**Testing point:** Using exponent rules and FOILing method to find value of quadratic expression

**Key Explanation:** Choice B is correct. Expanding the expression  $(x + y)^2$  yields  $x^2 + 2xy + y^2$ . Since  $x^2 + y^2 = 45$ , the expression becomes  $45 + 2xy$ . Since  $xy = 5$ , the expression becomes  $45 + 2(5)$  or 55. Therefore,  $(x + y)^2 = 55$ .

**Distractor Explanations:** Choice A is incorrect

and may result from solving the value of  $\frac{x^2 + y^2}{xy}$ .

Choice C is incorrect and may result from solving the value of  $2(x + y)^2$ .

Choice D is incorrect and may result from solving the value of  $(x - y)^2$ .

22. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYTICS

**Skills/Knowledge:** Inference from sample statistics and margin of error | **Testing Point:** Inferring from a sample to a population

**Key Explanation:** Choice C is correct. From the data surveyed,  $1,200 - 950 = 250$  residents own a different type of pet. We can infer that

$\frac{250}{1,200} \times 62,500 = 13,020$  residents in the town own a different type of pet.

**Distractor Explanations:** Choice A is incorrect.

This option is the total number of residents in the town. Choice B is incorrect. This is the approximate number of residents in the town that own either a dog or a cat. Choice D is incorrect. This is the difference between the number of residents in the survey that owned a cat or a dog and the total number of residents in the town ( $62,500 - 950$ ).