1. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice C is the best answer because the underlined word is what goats "lack" or "do not have." The first half of the sentence indicates that the goats will eat "everything else" as well as "unwanted weeds." In other words, the goat does not care what it eats. **Choice C** refers to "judgment," or "refinement" about what it chooses, so fits the context of eating anything.

Distractor Explanation: Choices A and **B** are incorrect because they refer to unfairness or partiality towards one thing. However, the goats are not deliberately trying to treat one plant poorly; they eat all without preferences. **Choice D** is incorrect because it refers to an obstinate and unchanging belief about the superiority of one's group over others, but the goats do not feel they are superior to others.

2. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice C is the best answer because the underlined word describes how clients and investors view the proposal that the person with a career in business makes. **Choice C** refers to something that is desirable. The resulting sentence, therefore, indicates that the businessperson helps make the plan desirable to others.

Distractor Explanation: None of the other choices adequately shows how the clients and investors need to view the proposals. **Choice A** refers to a personal quality that inspires others. It does not refer to something inanimate like a proposal. **Choice B** refers to something that is impossible to avoid the effect of. The clients and investors, though, are not forced to accept the proposal. **Choice D** refers to something that is extremely interesting so that it is impossible to stop paying attention to it. Although a proposal might be fascinating, the key is to make it desirable enough that others buy into it.

3. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice A is the best answer because "critical" is the author's view of what "explaining such coexistence" is. The sentence continues to say that the explanation is needed to "truly understand the region's biodiversity." **Choice A** refers to something absolutely necessary, so fits the context in saying that explaining coexistence is necessary to understand biodiversity and therefore developing an appropriate plan for managing the area.

Distractor Explanation: None of the other choices accurately describes how essential "explaining such coexistence" really is. **Choice B** means "dangerous." **Choice C** refers to expressing criticism and disapproval. **Choice D** refers to using logic and reasoning.

4. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice B is the best answer because the blank portion needs to be a word that describes the "cultural and historical value of the building and its contents," which are described as being full of "splendid and unique details" from over the past 1,500 years. **Choice C** refers

to something that is too great to mathematically determine or count. It fits the context that the building's value is so great it cannot be replaced by any money.

Distractor Explanations: None of the other choices adequately describe the precious nature of the "value of the building and its contents." **Choice A** refers to a place or thing that is pleasant and agreeable, not an intangible thing such as "value." **Choices C** and **D** refer to something that is physically large or bulky, not something intangible.

5. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice C is the best answer because the main point of the paragraph is that "these results contrast with previous findings" and emphasize that more studies are needed, indicating that the Drake Passage study did not provide all the answers. Therefore, the paragraph shows how the results of the Drake Passage study fits into "the wider context" or "bigger picture" of other studies.

Distractor Explanation: Choice A is incorrect because the paragraph does not suggest that any of the data gathered so far is "inaccurate" or "not correct." Therefore, the paragraph is not being used to show how difficult it is to get correct data. **Choice B** is incorrect because the paragraph does not "illustrate" or "explain" why it is hard to "amass" or "gather" enough data. The paragraph mentions that the conditions are "challenging," but does not give any detail about why. **Choice D** is incorrect because, though the paragraph says that CO_2 absorption is important, it does not talk about "correcting" or "fixing" the problem. It only says that there needs to be more research done to understand the process better.

6. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice A is the best answer. The underlined sentence shows that the garden was large and "lovely" or "appealing," and the following sentence gives various reasons that the garden was appealing to all the senses.

Distractor Explanation: Choice B is incorrect because there is no contrast with the previous sentence; the garden was lovely, so that provides a reason for the children to want to play there. **Choice C** is incorrect because the underlined sentence does not refer to "characters" or "people," only to place. **Choice D** is incorrect because there is no "ominous undercurrent" or "scary implication" in the description of the garden. It could be that the giant is very nice and there is no problem with the children playing there.

7. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice B is the best answer because the phrase is used to describe the "fentanyl analogs" or "drugs comparable to fentanyl." The fact that they were "commonly confiscated" or "often seized" by law enforcement shows that the drugs are ones in common use, and therefore are likely to be illegal drugs that overdose patients had access to and used. If this is true, the research on the drugs is likely to "apply" or "be relevant" to "authentic cases" or "real situations" in which a patient overdoses on an illegal drug.

Distractor Explanation: Choice A is incorrect because the method of "obtaining" or "getting"

the drugs is not mentioned. The researchers could have gotten the drugs from a variety of sources. **Choice C** is incorrect because the fact that the drugs were the kind seized by officers does not show that the trials were "improperly" or "incorrectly" done. **Choice D** is incorrect because there is no indication that the research required special permits to use the drugs. Therefore, the quote is not included to "establish" or "provide a reason" for a point that is not even mentioned.

8. **Level:** Easy | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Cross-Text Connections

Key Explanation: Choice A is the best answer because when the author of passage 2 states that if "men but understand themselves . . . they will be ready enough to take gigantic measures to prevent [war]" he is expressing a belief in the ability of wisdom to overcome mankind's tendency towards warfare. This is very similar in intent and belief to the statement made by the author of passage 1 that, "We must have the telescope of philosophy to perceive distant ills." Both authors believe that the key to conquering our urge to ignore the suffering of others and make war is consideration and thoughtfulness.

Distractor Explanation: Choice B is incorrect because it has no relevance to the underlined concluding message in Text 2. The underlined section in Text 2 is expressing a belief in the ability of wisdom to overcome mankind's tendency towards warfare, whereas this choice emphasizes that people only concern themselves with opinions and beliefs that ensure their personal happiness. **Choice C** is incorrect because it doesn't include any information relating to the underlined concluding message in Text 2. The underlined section in Text 2 is expressing a belief in the ability of wisdom to overcome mankind's tendency towards warfare, whereas this choice emphasizes that there are people that would ignore the misery of others as long as they benefitted. **Choice D** is incorrect because it doesn't include any information relating to the underlined concluding message in Text 2. The underlined section in Text 2 is expressing a belief in the ability of wisdom to overcome mankind's tendency towards warfare, whereas this choice emphasizes that there are men that have no problem with the concept of killing or taking someone else's life.

9. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Central Ideas and Details

Key Explanation: Choice B is the best answer because "impetus" refers to a reason or motivation. The passage begins by explaining that the narrator will "take to the ship" whenever he is feeling morbid and needs a change.

Distractor Explanation: Choice A is incorrect because there is no indication that the narrator is a captain. He also does not appear to be a sailor as a steady career, but instead when he feels tired of being on land. **Choice C** is incorrect because the narrator says he had no money, and therefore felt like going sailing; there is no discussion of a sailor's salary. He could have had a large salary aboard ship but spent it all. **Choice D** is incorrect because, while the narrator indicates that he was "impoverished" with "little or no money in my purse," he does not say how he got to that condition

10. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Central Ideas and Details

Key Explanation: Choice B is the best answer because the passage says that "induced demand" is a phenomenon in which making more of a product will lead to more people wanting it; in this case, "if more roads are provided, more people are encouraged to drive." However, the passage says that the "common solution" is to build more roads, showing that in the average or common case of wanting to reduce traffic jams, the effect is not considered. If it were "taken into consideration" or "thought about," then planners would probably use a different solution than just building roads.

Distractor Explanation: Choice A is incorrect because, although the passage indicates that congestion continues as more roads are built, it does not say that induced demand "contradicts" or "goes against" that concept. There is also no hint that there is a "widespread belief" or "lots of people thinking" that building roads causes congestion; if so, the common solution would not be to build more. **Choice C** is incorrect because there is no hint that city planners are now incorporating the idea into their plans; if so, then there would not be situations like the example from Houston. **Choice D** is incorrect because there is no discussion in the passage about how to "mitigate" or "reduce" the effect. The effect is just defined.

11. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Command of Evidence (Textual)

Key Explanation: Choice B is the best answer. The claim is that "the poem uses the imagery of fire to delve into the question of who might have created such a dangerous creature." In choice B, the words "furnace" and "anvil" are "imagery" or "symbols" that evoke heat and fire; they are tools used to heat metal to the melting point and form it into a shape. **Choice B** refers to "delving" or "asking" the question of who might have created the "dangerous creature," which causes "deadly terrors: what furnace, anvil, and grasp could create a tiger? These questions are asking who would dare to forge and hold the tiger.

Distractor Explanation: Choice A is incorrect because it touches on the fire imagery in the "fire of thine eyes," but it does not refer to the question of who created such a creature. **Choice C** is incorrect because it only refers to the creator and the danger or fear caused by a tiger: tigers are scary enough that stars "throw down their spears" or "give up" and "water heaven with their tears" or "cry." **Choice C** does not use any fire imagery. **Choice D** also does not give any support to the claim that the poem uses fire imagery; it only wonders if someone who created a lamb could also create a tiger.

12. **Level:** Hard | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Command of Evidence (Textual)

Key Explanation: Choice A is the best answer because a counterargument is an attack against the writer's main argument. The prompt is asking about a counterargument related to Mother Jones's "credibility" or "believability." Mother Jones "addresses" or "faces" the possible attack that she is not qualified to speak because she is not a miner by saying that she has undergone similar conditions that miners live in and suffer through: "I was with you nearly three years in this State. I went to jail. I went to the Federal courts."

Distractor Explanation: Choice B is incorrect because Mother Jones uses her experience

in jail as a reason that she can empathize with the miners. It supports her argument of understanding hard conditions rather than weakens her ability to speak for miners. **Choice C** is incorrect because there is no discussion about how many government contacts she has, so she does not "anticipate" a counter argument on that topic. **Choice D** is incorrect because Mother Jones does not say how she treats pets; she is discussing the behavior of the wives of the mine owners.

13. **Level:** Easy | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Command of Evidence (Quantitative)

Key Explanation: Choice C is the best answer because the figure lists "39.66" in the column of "average days to first flower" for 90nM of NaCl, and 23.66 days for 0 NaCl. Therefore, the difference is 16 days, which supports the claim that "increasing NaCl concentrations delayed significantly flowering" times.

Distractor Explanation: Choice A is incorrect because only the passage refers to capsaicinoids; the table does not. **Choice B** is incorrect because only the passage refers to vitamins and minerals. Nutritional value is impossible to determine from the table. **Choice D** is incorrect because for the "NaCl concentration of 30 mM" line, the table says 54 days until the first fruit appeared; that is not the total number of fruits.

14. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Inferences

Key Explanation: Choice D is the best answer because the passage says that Mann used personal interviews "to provide an insider's perspective." She was trying to get a clearer understanding of veganism from vegans themselves.

Distractor Explanation: Choice A is incorrect because there is no evidence that Mann expected to find a "conflict" or "opposing views" between the interviews and scientific research. She was trying to blend the two to get a more rounded view of the topic as a whole. **Choice B** is incorrect because the health benefits were analyzed through scientific studies found in the literature review; Mann was not trying to "resolve a debate" so much as "combat stereotypes" by sharing different views. **Choice C** is incorrect because there is no evidence that "most" or "the largest percentage" of literature is "biased against" or "opposing" veganism.

15. **Level:** Easy | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Inferences

Key Explanation: Choice D is the best answer. Since the tomb inscriptions say that the tomb belonged to Hinat, it is a logical assumption that she was buried there.

Distractor Explanations: Choice A is incorrect. There is no evidence that Hinat was royal; if anything, the act of buying a tomb indicates that the populace did not make one for their ruler. **Choice B** is incorrect because, though she bought her own tomb, she had "descendants," which indicates that she had children. **Choice C** is incorrect because "ancestors" are the people who came before someone, so are the opposite of "descendants." There is no indication that anyone before Hinat was buried with her.

16. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice C is the best answer. "Called off" is a phrasal verb that means "canceled."

Distractor Explanation: All of the other choices can be eliminated because they are phrasal verbs with meanings that do not fit the context of saying that the Olympics were not held. **Choice A** refers to visiting someone. **Choice B** refers to telephoning someone. **Choice D** refers to asking various people questions, often when organizing something or trying to find information.

17. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice C is the best answer. The present perfect verb form using "has/have" is used to show that something started in the past and continues now. It fits the time context of the question that Harari poses, "from the stone age to the present."

Distractor Explanation: Choices A and **B** are incorrect because they are present tenses, so do not include the idea of change from the distant past. **Choice D** is incorrect because it refers to something which has not yet occurred in the future, so does not describe "from the stone age to the present."

18. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice C is the best answer. The subject of the sentence is long, "the transformative effect on women of access to affordable, reliable, and sustainable modern energy." However, it can be reduced to the singular "the effect." **Choice C** is a singular verb that shows that the studies were done in the past and still continue today.

Distractor Explanation: All of the other choices can be eliminated because they are plural verbs, so cannot be used with the singular subject "the effect."

19. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation:Choice A is the best answer. "Which" is a relative pronoun used after a comma to add more description to the noun that precedes the comma. In this case, "occur deep underwater where continental plates diverge" adds more information about the "hydrothermal vents."

Distractor Explanation: Choices B and **D** are incorrect because "they" and "these" are pronouns that are used in place of a noun at the start of a sentence. They create independent clauses that can stand on their own, so the resulting sentence is a comma splice. **Choice C** is incorrect because when "that" is used as the start of a relative clause after a noun, it is not preceded by a comma.

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

Key Explanation: Choice B is the best answer. When three or more items are included in a list joined by "and," the items are followed by commas, but the "and" is not.

Distractor Explanation: Choice A is incorrect because there should be no comma after "and." **Choices C** and **D** are incorrect because both

semicolons and a single dash should be preceded by a complete idea, but the two items before the punctuation would need to be joined by "and" for the idea to be complete.

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

Key Explanation: Choice B is the best answer. "In a 2022 paper written by Kyle Rupp and associates" modifies the main clause, "the researchers explore…" by giving the context of when and where the sentence occurs. Such a modifier at the start of the sentence should be divided from the main clause with a comma.

Distractor Explanation:Choice A is incorrect because with no punctuation, the reader does not know where the main clause begins. **Choices C** and **D** are incorrect because a single dash or a colon should follow an independent clause, but the first person has no active verb ("written" modifies the noun "paper.")

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

Key Explanation: Choice D is the best answer. The main clause starts, "a lyric soprano has…." The other words at the start of the sentence modify the main clause, so need to be divided with commas. "For example" is one separate idea that qualifies that the sentence is an illustration of the previous claim. "Among operatic voices" restricts the discussion to voices that are used in the opera.

Distractor Explanation: Choice A is incorrect because it has no punctuation separating the different elements of the sentence from each other, so it is hard for the reader to determine how the ideas relate to each other. **Choices B** and **C** are incorrect because a colon should follow a complete clause, but the preceding portion has no verb.

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

Key Explanation: Choice D is the best answer. "The wind cannot be turned up or down" is a contrast with the previous discussion, which explains that oil-powered plants can control output like adjusting the flow of gas to a car. **Choice D** is used to indicate that the following information is different from what has preceded, so it effectively warns the reader of the contrast to come.

Distractor Explanation: Choices A and **B** are incorrect because they show that even though one thing happens, another also happens. They do not establish that the discussion is highlighting a difference between two things which might happen even if the other did not. **Choice C** is incorrect because it is used to add more information along the same idea to the preceding argument, not change to a contrasting thought.

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

Key Explanation: Choice B is the best answer. There is a contrast in the sentence between "some administrative roles" and the rest of people who do social work. **Choice B** is used at the start of a dependent clause to show a contrast between the clause it introduces and the main clause of the sentence.

Distractor Explanation: All of the other choices can be eliminated because they do not make the clause that they introduce dependent on a main clause; the clause can still stand on its own as a sentence. As a result, the sentence is left with two main clauses joined by a comma, a type of run-on sentence called a comma splice.

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

Key Explanation: Choice C is the best answer. The passage is structured with the first sentence defining the diet and the second sentence giving a reason to doubt that it is effective, a reason not to follow it. The final sentence gives another reason to question whether the diet should be used. **Choice C** is used to introduce an additional argument for the same topic, so fits the context well.

Distractor Explanation: The other choices can be eliminated because they are not used to add more detail on the same topic. **Choice A** is used for a time series, but there is no indication that the lack of research was followed in time by scientists being concerned. **Choice B** is used to stress that the previous point may be true, but that the following, opposing argument is more reasonable. Therefore, it does not fit the context of two concordant ideas. **Choice D** is used to introduce a logical conclusion based on what information is already given, not to bring up new ideas.

26. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Inference

Key Explanation: Choice A is correct because to commemorate something means to remember the event and by doing so, to honor it. Here, the memorial commemorates the employees of LMWR killed in the First World War.

Distractor Explanations: Choice B is incorrect because to idolize is to respect or admire someone extensively. Here, the memorial has been built to remember martyrs and not only to show respect. **Choice C** is incorrect because "celebrate" is not a word used to describe the purpose of a memorial. **Choice D** is incorrect because the memorial has been built for the fallen LNWR employees and hence, cannot overlook or ignore them.

27. **Level:** Medium | **Domain:** EXPRESSION OF IDEAS
Skill/Knowledge: Rhetorical Synthesis

Key Explanation: Choice C is the best answer. The author wants to emphasize "rarity" or the fact that there are very few of the saola. The idea that they have been seen only four times in thirty years indicates that they are hard to find. In other words, there are probably not many because presumably scientists have been wanting to look for and study them.

Distractor Explanation:Choice A is incorrect because it does not emphasize the "rarity" or "unusual nature" of the animal. It is possible that many hunters have such skulls in their homes and the scientists only recently realized some were unusual. **Choice B** is incorrect because it could just mean saola are hard to raise in captivity. There could be a huge number living in the mountains in that region. **Choice D** is incorrect because it does not say anything about how common the saola are; it only describes their name

1. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice D is the best answer because "broader" is a comparative adjective that shows the difference between the tourism business and the destination. The paragraph shows that the tourism business contains many different aspects than just the sites: it also includes "transportation, hotels and guest accommodations, and services that link the various components of a trip." Choice D refers to something that covers a wide range of topics or deals with many elements of something, so accurately shows that tourism deals with many more elements than just the destination.

Distractor Explanation: None of the other choices effectively establishes the relationship between the tourism business and the destination. **Choice A** refers to something that is more noticeable or clear. **Choice B** refers to something that is not detailed or only covers the main points. **Choice C** refers to something that is wide in physical space.

2. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice C is the best answer because "insensible" is a verb that shows what the trees do to the "any change in those who walk" under them. **Choice C** means "not notice," so it correctly shows that the trees do not notice that different people are present.

Distractor Explanation: Choice A refers to an unconscious state, especially when someone is sick or injured. Therefore, it does not apply to trees that do not notice anything. **Choice B** means "trivial" or "unimportant," so does not describe what the trees do to a change in the people under them. **Choice D** is incorrect because it refers to a lack of thinking or perception of the environment around something. Although trees do not think, Marianne is talking to them as if they were animate creatures that might perceive things if they wanted to.

3. **Level:** Hard | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Words in Context

Key Explanation: Choice D is the best answer because "fume" refers to one of the things relating to the way that Adam amassed millions of dollars in Wall Street. The other things are "fuss" or "commotion," "applause" or "praise," and "ill will" or "hard feelings." **Choice D** refers to anger that is often related to a conflict, so aptly shows that he was very aggressive or hurt others as he "charged in" and made money.

Distractor Explanation: None of the other choices fits the list of emotional qualities reflecting what happened to Adam on Wall Street. **Choice A** refers to waste gasses, **Choice B** to an unpleasant smell, and **Choice C** to waste products.

4. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice D is the best answer. The topic sentence points out that "sometimes behaviors have underlying reasons that are not initially apparent," and then gives Mischel's experiment as an example. The differing results of Watt's experiment show that a fuller analysis might reveal previously unconsidered explanations

for a behavior such as deciding to wait to eat a marshmallow.

Distractor Explanation: Choice A is incorrect because, while Watt's experiment revealed a flaw in Mischel's experiment, there is no indication that "most" experiments are flawed. **Choice B** is incorrect because the passage does not say that all experiments should be performed more than once; it only gives an example of a situation where a second experiment revealed more information about a topic. **Choice C** is incorrect because the passage does not say there is a "significant problem" in the way we understand willpower now; the passage points out that a previous problem in understanding was rectified.

5. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice D is the best answer because the cup of liberty is something that "your old masters" hold for the slaves. The imagery shows that the cup can be "dash[ed] from you" so that it is unclear when the "scattered contents" or "freedoms" will be given back. In other words, the imagery emphasizes the "precarious" or "unstable" nature of the freedoms. It is very easy to throw aside or break the gains that have been made.

Distractor Explanation: Choice A is incorrect because Lincoln is not saying that the Union is "generous" or "willing to give a lot." He is saying that a poor decision will remove everything that has been given so far. **Choice B** is incorrect because the cup of liberty is what "your old masters," who are slave-owners in Louisiana, hold for slaves. The cup of liberty is not the advances of the Union, only of Louisiana. **Choice C** is incorrect because the imagery does not include the reaction of people accepting the cup; it says the cup is easy to break.

6. **Level:** Easy | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Text Structure and Purpose

Key Explanation: Choice A is the best answer because the definition explains what a median wage is. This definition clarifies that not all planners earned the median figure of $73,050. It also explains why a total of 20% of the planners earned less than $45,180 or more than $114,170. If the reader did not know the definition of median wage, then the reason for the wide range in salaries might not make much sense.

Distractor Explanation: Choice B is incorrect because the author does not imply that the median wage is "insufficient" or "not good enough." The median wage does not give all the necessary details to know the range of salaries, but offers a valid middle point to use as a point of reference. The definition shows how the data can be used to better understand the salary that could be earned as a planner. **Choice C** is incorrect because there is no "reason" or "cause" given to explain why planners earn different amounts of money. **Choice D** is incorrect because there is no link between salary earned and number of jobs. Therefore, a definition of how the salary in the passage was calculated does not support or prove that there will be more jobs in the future.

7. **Level:** Medium | **Domain:** CRAFT AND STRUCTURE
Skill/Knowledge: Cross-Text Connections

Key Explanation: Choice B is the best answer because the conclusion of Text 2 is that researchers need to develop a new drug to treat depression.

The author of Text 1 would probably respond with "reservation" or "some doubt" because she promotes behavioral activation, a non-invasive method that does not use any medications at all, to retrain the brain into positive patterns. She probably would encourage avoiding invasive methods like introducing drugs into the body if possible.

Distractor Explanation: Choice A is incorrect because the author of Text 1 indicates that behavioral activation is successful. She does not discuss any other method of treatment, so it is impossible to tell if she would say that "most" treatments do not work. **Choice C** is incorrect because the author of Text 1 does not refer to drug performance at all. **Choice D** is incorrect because there is not enough information to tell whether the author of Text 1 "contends" or "argues" that drugs are "unacceptable" or "not allowable." She may agree that drug therapies should be attempted when other methods fail.

8. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Central Ideas and Details

Key Explanation: Choice A is the best answer because Keel describes the "vision" or "dream" of the Indian's "predecessors" or "earlier people," then states that "This vision was shared by the U.S. Congress in 1934 when it passed…the Indian Reorganization Act." In other words, Keel feels that the vision was "shared" or "in keeping"—both mean "the same"—with each other.

Distractor Explanation: Choice B is incorrect because Keel indicates that the IRA was written by the government, not by the predecessors, even though the goals were the same. **Choice C** is incorrect because the policy matched the desires of the Indians to "protect and restore our tribal homelands and the Indian way of life." The policy did not "deny" or "remove" rights from the Indians. **Choice D** is incorrect because there is no indication of how well the policy has upheld its goals.

9. **Level:** Easy | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Central Ideas and Details

Key Explanation: Choice C is the best answer because the passage says that the narrator's "way lay along the canal embankment," which shows that he was on the embankment because it was the "route" or "way" he needed to go. The first line says the reason he was taking that route was, "I was going towards my lodgings." "Quarters" and "lodgings" both refer to the place where one lives, so he was headed towards his quarters.

Distractor Explanation: None of the other choices are supported by evidence from the passage. **Choice A** is incorrect because, although the embankment was usually deserted, "at that hour you never meet a soul," there is no proof that he was trying to avoid other people. **Choice B** is incorrect because he went on his walk to escape the pressures of the city, but the embankment was on his return trip as he was going home to his lodgings. **Choice D** is incorrect because the embankment was usually deserted, so that is not a place that he would have looked for excitement or adventure.

10. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Central Ideas and Details

Key Explanation: Choice A is the best answer because "placement" refers to "location." The

passage directly states that "environmental impacts will very much depend on… the location selected"

Distractor Explanation: None of the other choices are supported by evidence from the passage. **Choice B** is incorrect because, although the passage does say that moving parts can kill wildlife, it does not say that is the most important factor when determining environmental change. **Choice C** is incorrect because the studies revealed how the system affects the environment, but do not change the effects. There is no discussion at all of **Choice D,** the total energy generated.

11. **Level:** Hard | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Command of Evidence (Textual)

Key Explanation: Choice B is the best answer. The scientists' conclusion is that "the carnivore probably appeared very much like the unrelated *Tyrannosaurus rex.*" **Choice B** gives a detail about the "appearance" or "how it looks" that show that there is a similarity: both species had a head that was "oversized" or "very large" when compared to the rest of the body. Therefore, they both looked like they had big heads.

Distractor Explanation: Choice A is incorrect because a long separation of time could mean that the dinosaurs had evolved in different ways and looked very different. **Choice C** is incorrect because it shows a way that the dinosaurs looked different rather than a way that they are similar. Both dinosaurs were large, but *T. rex* would have, in general, been much larger. **Choice D** is incorrect because it only shows a similarity in diet. It is possible that two carnivores have very different physical characteristics or appearances while still eating the same food.

12. **Level:** Easy | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Command of Evidence (Quantitative)

Key Explanation: Choice A is the best answer because the claim is that there "is huge variability within tree populations over time." In other words, Clark is stressing how much of a change there is. **Choice A** accurately uses information from the graph to explain that one species increased greatly, thus supporting the claim.

Distractor Explanation: Choice B is incorrect because it shows stability rather than variability or change. **Choice C** is incorrect because it is extremely vague and does not show change within the species' composition. It only shows that there is more of one species than another, and those percentages could have remained constant. **Choice D** is incorrect because it incorrectly says there was a "decrease" rather than an "increase" in the number of oak trees. There were more 5,000 years ago…which is a more recent time than 10,000 years ago.

13. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Inferences

Key Explanation: Choice A is the best answer because the fact that "any information about those people that may differ from you – for example, the part of the country where they live" must be included implies that the information is essential for interpreting the data. Since the data is related to earnings claims and the percentage of people who actually reached the earnings, then it can be reasonably inferred that differences in environment affects the earnings. Since

"demographic factors" are differences between parts of the population, those are important to estimate if one person will earn the same amount as other investors.

Distractor Explanation: Choice B is not supported by the passage. The earnings claims must include the dates that earnings were achieved, but there is no evidence regarding how often the document is "updated" or "rewritten." It is possible that the same document could be used for many years. **Choice C** is incorrect because, while some sellers may be happy to provide evidence about their claims, there is no indication that "most" do not want to give the document to the buyer. **Choice D** is incorrect because the paragraph says that any sellers of a franchise must provide the document, not every building for sale.

14. **Level:** Medium | **Domain:** INFORMATION AND IDEAS
Skill/Knowledge: Inferences

Key Explanation: Choice D is the best answer because the passage says that one problem of tourism is that there could be "divisions and social friction," meaning conflicts, as a result of the "disparity" or "difference" between tourists and the workers who get lower pay. In other words, the local workers could become "resentful" or "dissatisfied" because of the difference in wages.

Distractor Explanation: None of the other choices are supported by evidence from the passage. **Choice A** is incorrect because there is no indication about which members of the community are employed. **Choice B** is incorrect because, while some regions might not benefit immediately from tourism because development money is spent on "schools or clinics," the passage implies that tourism is a good choice for Africa because it creates jobs. **Choice C** is incorrect because there is no discussion of replacing local cultures and traditions with new ones; if anything, "cultural stereotypes will be exploited" implies that some cultural details will be preserved to share with tourists.

15. **Level:** Easy | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice A is the best answer. It is a singular word which refers to "one more," which in the context refers to "one artist other than yourself." It fits the idea of sampling music from someone who is not yourself.

Distractor Explanation: Choice B is incorrect because, while it can be used to refer to different artists that are not yourself, it needs a plural noun, "artists" as there is no "the" in front of it. **Choice C** is used to describe all other artists, but the context is referring to taking work from one, as seen in the singular "copyright to that work." **Choice D** is incorrect because it is used as an object on its own, not with another noun like "artist."

16. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice C is the best answer. The underline modifies the following word, "guilty," which is an adjective describing "person." **Choice C** is an adverb, so is properly used with an adjective.

Distractor Explanation: Choices A and **D** are

incorrect because they are adjectives, so should not be used to describe another adjective. They are used when referring to nouns. **Choice B** is a noun, so should not be used to modify another part of speech.

17. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice D is the best answer. An apostrophe and s are used to show possession for one person; in this case, the death of J.R.R. Tolkien.

Distractor Explanation: Choice A is incorrect because it is too ambiguous; it could refer to either Tolkien or his son. **Choice B** is incorrect because an s forms a plural noun, but does not indicate possession. **Choice C** is used to show the possession of more than one person, but the context implies that Tolkien died and his son was still alive to publish the manuscript.

18. **Level:** Medium | **Domain:** STANDARD ENGLISH CONVENTIONS
Skill/Knowledge: Form, Structure, and Sense

Key Explanation: Choice D is the best answer. "Smaller than our sun" is a modifier that should be followed by the noun it refers to, in this case, "the red dwarf star HD260655."

Distractor Explanation: All of the other choices are incorrect because the modifier at the start of the sentence illogically describes the incorrect noun. In **Choice A**, "smaller than our Sun" refers to the generic "there." In **Choice B**, it refers to "only 33 light years," and in **Choice C** it refers to "our solar system."

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

Key Explanation: Choice A is the best answer. In this text, "and" joins two verb phrases, "worked…" and "published…." Two verbs should not be divided by commas if they share the same subject; in this case, "Kenyan writer Ngugi wa Thiong'o" does both actions. There should also not be a comma between the verb "published" and its object, "A Grain of Wheat in July."

Distractor Explanation: Choices B and **D** are incorrect because there should be no comma after "Nairobi" because the "and" joins two verbs with the same subject. **Choices C** and **D** are incorrect because there should be no comma after "published." A comma is needed between a verb and a quote only when the quoted information is a complete sentence, not when the marks are indicating the title of a book.

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

Key Explanation: Choice B is the best answer. When additional information is included in a sentence using two dashes, then the main part of the sentence should remain grammatically correct. By removing the aside, it is easier to determine that the proper sentence structure uses the idiom "cite XX as YY." **Choice B** completes this structure.

Distractor Explanation: All of the other choices are incorrect because they create a grammatically incorrect main clause. **Choice A** places two nouns

in a row without any particle or preposition showing how they relate to each other. **Choices C** and **D** add an additional subject (which or they) and verb.

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

Key Explanation: Choice D is the best answer. The idiom "as XX as YY" should have no punctuation dividing the elements from each other; they are part of the same idea.

Distractor Explanation: All of the other choices can be eliminated because they divide the standard idiom "as XX as YY" with punctuation. **Choices A** and **C** are incorrect because a colon and a single dash in a sentence should follow a complete clause, but the idea in front of the punctuation is incomplete. **Choice B** is incorrect because commas are used to divide separate ideas from the main clause.

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

Key Explanation: Choice D is the best answer. "Both" refers to the two ideas "during his lifetime" and "after his lifetime." No punctuation should separate the parts of an idea joined by "both," especially as the shared idea of "lifetime" is included at the end.

Distractor Explanation: All of the other choices include unnecessary punctuation. **Choice A** makes the preposition "during" stand on its own without a noun to clarify it; there needs to be something specifying "during what." **Choice B** divides "his lifetime" from the two prepositions that refer to it. is incorrect because a single dash should follow a complete sentence, but "during" is dangling.

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

Key Explanation: Choice B is the best answer because the passage is discussing two kinds of dogs that track people in different ways. **Choice B** sets up the idea that the following information is going to be very different from what precedes, so it effectively shows that the two dogs work under two methods that are distinct.

Distractor Explanation: Choices A and **C** are incorrect because they are used to show the result of an argument. However, the fact that air-scent dogs sniff an area is not the result of the discussion that trailing dogs follow a specific scent. **Choice D** is used to introduce more information on the same topic, so erroneously makes the reader think the discussion will continue with more details about trailing dogs.

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

Key Explanation: Choice C is the best answer. **Choice C** is used to provide emphasis for a preceding claim by adding details that support that claim. **Choice C** therefore fits the context of adding the detail that males are physically not capable of drinking blood to the more general preceding claim that they do not drink blood.

Distractor Explanation: Choice A is used to show a logical conclusion of an argument that is being developed, but the fact that males do not have a

special mouth is not necessarily the logical result of not drinking blood; it is more of a cause. It is possible for the males to have the special mouth but not use it. **Choice B** is used to summarize items in a list or conclude a section in a passage, but in this case, there is an additional idea which follows: mosquitos get energy from plants. **Choice D** is incorrect because it is used to add the specific example that illustrates a claim. However, the passage implies that there are more reasons for not drinking blood than the mouth shape. Rather, the reason is that they don't need the protein.

25. **Level:** Easy | **Domain:** EXPRESSION OF IDEAS
Skill/Knowledge: Rhetorical Synthesis

Key Explanation: : **Choice D** is the best answer. The writer wants a strong word that shows a strong need to do something, and **Choice D** emphasizes the idea of obligation or necessity.

Distractor Explanation: Choice A is incorrect because it only shows that something is possible, not that it is necessary to do. **Choice B** indicates that there is no doubt that the act will occur in the future, as opposed to stressing the fact that it needs to be done. **Choice C** is much milder than **Choice D,** giving the indication that making changes is a possibility or option, but not imperative.

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

Key Explanation: Choice B is the best answer. "Accelerating" includes the idea of getting increasingly fast or greater over time, so no additional words are needed.

Distractor Explanation: All of the other choices can be eliminated as redundant. They include words with the same meaning as "accelerating," distracting the reader from the point of the sentence.

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

Key Explanation: Choice B is the best answer. The student emphasizes the second bullet that Cher explored different styles by highlighting the point that the two songs are of different styles.

Distractor Explanation: None of the other choices highlights a common feature. **Choice A** only says that the songs were performed at different times. **Choice C** refers to a song and a television series, but there is no unifying theme about why those are notable. **Choice D** also refers to two unrelated facts: the reader does not know how or why they are significant.

1. **Level:** Easy | **Domain:** ALGEBRA
Skill/Knowledge: Linear equations in one variable
Testing point: Solving equations with one variable

Key Explanation: Choice B is correct. This question can be solved in two ways. The most efficient way to solve the equation is to factor out the 4 from the left side of the equation yielding $4(x+4)=24$. Dividing both sides of the equation by 4 yields $(x+4)=\frac{24}{4}$, which equates to $(x+4)=6$, which is **Choice B.**

The second way to solve this equation is to subtract 16 from both sides of the equation. The result is $4x+16-16=24-16$ which in turn translates to $4x=8$. Dividing both sides of the equation by 4 gets $x=2$. However, the question asks for the value of $x+4$, and not x, which will then be 2 + 4, or 6.

Distractor Explanation: Choice A is incorrect as this is the value of $4x$ when 16 is subtracted from both sides of the equation. **Choice C** is incorrect as this is the value of x. **Choice D** is incorrect as this answer may be the result of a conceptual error or miscalculation.

2. **Level:** Medium | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Probability and conditional probability | **Testing point:** Conditional probability

Key Explanation: Choice A is correct. Given that there are 35 teachers in the school, according to the table, there are 16 female teachers. Thus, the number of male teachers in the school is 35 – 16 = 19. The number of people in the school is found by adding the number of teachers to the number of students as follows: 245 + 35 = 280. Therefore, of the 280 people in the school, 19 are male teachers and the probability of selecting a male teacher is $\frac{19}{280}$.

Distractor Explanation: Choice B is incorrect since it is the probability of choosing a teacher given that he is already male. **Choice C** is incorrect, since it's the probability of choosing a male given that he is already a teacher. **Choice D** is incorrect as it is conceptually incorrect because it mixes students and teachers.

3. **Level:** Easy | **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: Absolute value equations usually have two solutions. The first step would be to remove the parentheses and set up two linear equations as follows:

$2x - 3 = 11$ and $2x - 3 = -11$

To solve for x in the first equation, add 3 to both sides of the equation as follows:

$2x - 3 + 3 = 11 + 3$

$2x = 14$

$x = 7$

To find the second solution solve for x in the second equation by adding 3 to both sides of the equation as follows:

$2x - 3 + 3 = -11 + 3$

$2x = -8$

$x = -4$

Thus, the positive solution for x is 7.

4. **Level:** Easy | **Domain:** ALGEBRA
Skill/Knowledge: Linear functions | **Testing point:** Perpendicular lines

Key Explanation: Choice C is correct. Perpendicular lines meet at 90-degree angles and have opposite sign reciprocal slopes. Putting the given equation into slope-intercept form $y = mx + b$ by dividing all terms by 5, yields $y = \frac{4}{5}y + 3$. The m in the slope-intercept form of the equation represents the slope of the line. Therefore, the slope of the line is $\frac{4}{5}$ and the opposite reciprocal slope is $\frac{-5}{4}$, which is the slope of the perpendicular line.This makes **Choice C** the only correct answer.

Distractor Explanation: Choice A is incorrect as the line would be parallel to m rather than perpendicular as the lines have the same slope. **Choices B** and **D** are incorrect as they are the negative of the perpendicular slope.

5. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Circles | **Testing point:** Standard form of the equation of a circle and completing the square

Key Explanation: Choice C is correct. To find the center of the circle, first transform the equation to its standard form $(x-h)^2 + (y-k)^2 = r^2$, where (h, k) is the center of the circle and r is its radius. To get the equation in standard form, complete the square. To do this, first, rearrange the terms in the equation to have all the x's and y's near each other as follows: $x^2 - 6x + y^2 + 4y = 36$. The standard form of a quadratic equation is $ax^2 + bx + c$ Next, working with just $x^2 - 6x$, with $a = 1$ and $b = -6$, add $\left(\frac{b}{2}\right)^2$ or $\left(\frac{-6}{2}\right)^2$ to both sides of the equation to get $x^2 - 6x + 9 + y^2 + 4y = 36 + 9$. Next, working with just $y^2 + 4y$, with $a = 1$ and $b = 4$, add $\left(\frac{b}{2}\right)^2$ or $\left(\frac{4}{2}\right)^2$ to both sides of the equation to get $x^2 - 6x + 9 + y^2 + 4y + 4 = 36 + 9 + 4$ or 49. Next, factoring $x^2 - 6x + 9$ yields $(x-3)^2$, and factoring $y^2 + 4y + 4$ yields $(y+2)^2$, to get $(x-3)^2 + (y+2)^2 = 49$

Therefore, the center of the circle will be (3, −2).

Distractor Explanation: Choice A is incorrect because if the standard form of a circle equation is read incorrectly then $(-h, -k)$ would be incorrectly determined to be the center of the circle. **Choice D** is incorrect as the x and y coordinates have been reversed. **Choice B** is incorrect as this is the negative of incorrect **Choice D**.

6. **Level:** Hard | **Domain:** ADVANCED MATH
Skill/Knowledge: Equivalent expressions | **Testing point:** Exponents and matching coefficients

Key Explanation:
$(8^x)^x \times 4^{2x} = ((2^3)^x)^x \times (2^2)^{2x} = 2^{3x^2} \times 2^{4x}$

This yields 2^{3x^2+4x} using exponent rules.

$\frac{2^{ax^2}}{2^{-bx}} = 2^{ax^2+bx}$ using exponent rules.

Therefore,
$3x^2 + 4x = ax^2 + bx$

$a = 3$

7. **Level:** Medium | **Domain:** ALGEBRA
Skill/Knowledge: Linear inequalities in one or two variables | **Testing point:** Solving systems of linear inequalities

Key Explanation: Choice B is correct. The most

efficient way to solve the problem is to substitute the given answer choices into the system of inequalities and see which answer makes both inequalities valid. Plugging in **Choice A** into the first inequality yields

$-6(-2)+3<-4$

$12+3<-4$

$15<-4$, which is false. Plugging in **Choice B** into the first inequality yields $-6(4)+3<7$

$-24+3<7$

$-21<7$, which is true. Next, plug **Choice B** into the second inequality which yields

$7<4+6$

$7<10$. This is true, making **Choice B** the correct option.

Distractor Explanation: Choice A does not work as shown above. Plugging **Choice C** into the first inequality yields

$-6(-2)+3<1$

$12+3<1$

$15<1$, which is not true. Plugging **Choice D** into the first inequality yields

$-6(-2)+3<-4$

$12+3<-4$

$15<-4$, which is not true.

8. **Level:** Hard | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear functions | **Testing point:** Transformations of quadratic equations

Key Explanation: Choice A is correct. The vertex form of the equation of a parabola is $y=(x-h)^2+k$, where (h, k) is the vertex of the parabola. Thus, the vertex of the $f(x)$ equation is (3, 8) and the vertex of the $g(x)$ equation is (5 , 5). Therefore, the x coordinate moves to the right 2 units from $f(x)$ to $g(x)$, and the y coordinate moves down 3 units.

Distractor Explanation: Choice B is incorrect as the x coordinate is moving to the right, not the left. A student may pick this option if he or she assumes that since h has reduced by 2 units it is moving to the left. **Choice C** is incorrect because the y coordinate is moving down not up. **Choice D** is incorrect. This incorrect answer may be selected if the student transformed $g(x)$ onto $f(x)$ instead of the other way around.

9. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear functions | **Testing point:** Identifying the equation of an exponential function from a graph

Key Explanation: Choice D is correct. The graph depicts an exponential growth equation, which has its standard equation $y=ab^x$, where if in an exponential growth equation $b>1$, then the equation represents exponential growth. The value of a in the equation represents the initial value of the equation when $x=0$. Using the process of elimination, choices A and C can be ruled out as their b values are less than 1 and thus represent exponential decay, not growth. **Choice A** can also be ruled out as it gives an initial value of 5 whereas the graph shows a smaller initial value. **Choice D** is correct as it is the only equation that shows that the graph is increasing exponentially and has a *y-intercept* of less than 5.

Distractor Explanation: See the process of elimination answer explanations above.

10. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Right triangles and trigonometry | **Testing point:** Similar triangles and use of SOHCAHTOA

Key Explanation: Since triangle *DEF* and triangle *PQR* are similar, angles *F* and *R* are congruent. Therefore, *sin R* = *sin F*. Therefore using *SOHCAHTOA* the *sin* of an angle is equal to the length of the opposite side to the angle divided by the length of the hypotenuse of the triangle. Thus, the *Sin* of *F* is $\frac{5}{13}$.

11. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: One-variable data: distributions and measures of center and spread | **Testing point:** Finding the mean

Key Explanation: Choice B is correct. To find the average of a set of data, divide the total sum of the values of the data by the number of items. The average of the SAT scores of the 7 students is 1,320. Therefore, the sum of their scores would be $1{,}320 \times 7 = 9{,}240$. Adding in the SAT score of the 8th student, the new sum of the SAT scores will be $9{,}240 + 1{,}460 = 10{,}700$. The new average SAT score will be $\frac{10{,}700}{8} = 1{,}337.5$, which is 1,340 rounded to the nearest tens place.

Distractor Explanation: Choice A is incorrect as this is the average of the average SAT scores of the 7 students and the score of the new student $\frac{(1{,}320+1{,}460)}{2}$. **Choice C** is incorrect as this is the mean score if the new higher score is subtracted from the sum of the current sum of scores and divided by 6. **Choice D** is incorrect as this answer incorrectly assumes that the new score will be the new average SAT score.

12. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Two-variable data: models and scatterplots | **Testing point:** Exponential function interpretation

Key Explanation: Choice B is correct. The 3 in the exponential equation above represents the growth factor. It indicates a tripling of the bacteria. When $t = 14$ the growth factor in the equation becomes $3^{\frac{14}{14}}$, which is 3, and therefore at $t = 14$ days the amount of bacteria triples. There are 14 days in two weeks which makes Choice B the correct answer.

Distractor Explanation: The equation for an exponential model is $y = ab^x$, where a represents the initial amount of the data. **Choice A** is incorrect because a=2,034 would represent the amount of bacteria at the beginning of the study and not the given term. **Choice C** is incorrect because it assumes that the model is linear, however, the model is exponential. **Choice D** is incorrect as this answer gives $rp(t)$ and not the given term in the equation.

13. **Level:** Easy | **Domain:** ALGEBRA
Skill/Knowledge: Linear equations in one variable
Testing point: Linear equation with no solutions

Key Explanation: The first step is to use the distributive property to expand out the terms on the left side of the equation as follows:

$5(x + 3) - 3(2 - x)$

$5x + 15 - 6 + 3x$

Combining like terms on the left side of the equation yields $8x + 9$

Therefore, for the equation below to have no solutions, the lines represented by both sides of the equation need to be parallel, and thus have the same slope and different *y-intercepts*. Since the

equations are in slope–intercept form $y = mx + b$, with different *y-intercepts*, the slope of the line represented by $8x + 9$ is 8 and thus $p = 8$.

14. **Level:** Hard | **Domain:** ALGEBRA
Skill/Knowledge: Systems of two linear equations in two variables | **Testing point:** Finding the number of solutions in a system of equations

Key Explanation: Choice D is correct. To compare the equations, do math operations to get the equations in the slope–intercept form $y = mx + b$, where m is the slope of the line and b is the *y–intercept*. First, simplify the second equation by dividing out a 2 from all terms to get: $-3x = -4y + 16$. Adding $4y$ to both sides of the equation and adding $3x$ to both sides of the equation yields $4y = 3x + 16$. Dividing all terms in the equation by 4 to get it into slope–intercept form yields $y = \frac{3}{4}x + 4$. Adding $-3x$ to both sides of the first equation yields $-4y = -3x + 16$. Dividing all terms in the equation by – 4 yields $y = \frac{3}{4}x - 4$. Looking at the revised equations the lines have the same slope but different *y–intercepts*, making the lines parallel. Parallel lines do not intersect, and therefore there is no solution to the system of equations.

Distractor Explanation: Choice A is incorrect because to have one solution, the slopes of both equations should not be equal, and they are. **Choice B** is incorrect because linear systems cannot have 2 solutions. **Choice C** is incorrect because to have infinitely many solutions the equations would need to represent the same line and thus be the same (the slopes and *y–intercepts* of the two lines would be the same); they are not.

15. **Level:** Medium | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Circles | **Testing point:** Finding the length of a minor arc

Key Explanation: Choice A is correct. The length of the minor arc is found by using the formula $\frac{\theta}{360}\pi d$, where theta is the measure of the central angle and d is the diameter of the circle. Therefore, the length of minor arc AB is $\frac{72}{360}\pi(12) = 2.4\pi$ which is **Choice A.**

Distractor Explanation: Choice B is incorrect as it gives the area of the minor sector AOB. **Choice C** is incorrect as it is the circumference of the whole circle. **Choice D** is incorrect as it is $\frac{12\pi}{360} = \frac{\pi}{6}$ and may be due to a calculation error.

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

Key Explanation: $(x + 3)^2$ is equal to $(x+3)\times(x+3)$. Using the foiling method to multiply out the terms, yields $x^2 + 3x + 3x + 9$, or $x^2 + 6x + 9$. Using the distributive property, $-2(x^2 + 6x + 9) + 6 = -2x^2 - 12x - 18 + 6$, which is equivalent to $-2x^2 - 12x - 12 = ax^2 + bx + c$. Therefore, $c = -12$.

17. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Lines, angles, and triangles | **Testing point:** Midpoint between two points on a line

Key Explanation: Choice C is correct. To find the midpoint between two points on a line (x_1, y_1)

and (x_2, y_2), use the midpoint coordinates formula $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

Therefore the coordinates of the midpoint of line segment AB can be found from the following equations: $\frac{6+x_2}{2}=8$ and $\frac{11+y_2}{2}=10$. Using cross products, solve $x_2 + 6 = 16$, or $x_2=10$, and $y_2 + 11 = 20$, or $y_2 =9$. Therefore, the coordinates of point B are $(10, 9)$.

Distractor Explanation: Choice A is incorrect and is found when the midpoint formula is used incorrectly with (8, 10) and (6, 11) as the points. **Choice B** is incorrect and is found by subtracting in the midpoint formula instead of adding. **Choice D** is incorrect and may be arrived at through a conceptual error.

18. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear functions | **Testing point:** Finding the number of solutions to an absolute value equation

Key Explanation: Choice A is correct. Since the absolute value is equal to zero, the only value that makes the absolute value equation equal to zero is $x = -3$. Thus, there is only one solution.

Distractor Explanation: Choice B is incorrect as to have two solutions the absolute value must be equal to a positive number. Zero is not a positive number. **Choice C** is incorrect because for an absolute value to have 0 solutions, it must be equal to a negative number and zero is not a negative number. **Choice D** is incorrect as there is enough information to answer the question.

19. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear functions | **Testing point:** Absolute value and value of a function

Key Explanation: Choice A is correct. To find $f(2)$, substitute 2 for all values of x in the equation as follows:

$(2)^2 - 20(2) + 9 = -27$.

To find $|f(2)|$ take the absolute value of −27 which is 27, or **Choice A**.

Distractor Explanation: Choice B is incorrect as the question requires the absolute value of the function value and not the function value itself. **Choices C** and **D** are incorrect and can be arrived at through miscalculations.

20. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Percentages | **Testing point:** Percentage increase and decrease

Key Explanation: Assume that the initial price of the oil was x. The price of oil after the 20% increase would be $1.2x$. This price is then decreased by 14%. Thus, 86% of the oil price remains and thus $0.86 \times 1.2x = 1.032x$. This shows that after the two changes, the price of oil has increased overall by 3.2%.

21. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Circles | **Testing point:** Area of a circle inscribed in a square

Key Explanation: Choice C is correct. The length of a side of the square is equal to the diameter of the circle. The area of a circle can be found using the formula πr^2, where r is the radius of the circle.

The radius of a circle is half of its diameter, so the radius of the circle is $\frac{4\sqrt{2}}{2}$ or $2\sqrt{2}$. Therefore, the

area of the circle is $\left(2\sqrt{2}\right)^2 \times \pi$ or 8π.

Therefore, $p = 8$.

Distractor Explanation: Choice A is incorrect. This is the value of the area of the square and not the circle. **Choice B** is incorrect. This is the value of two times the diameter of the circle. **Choice D** is incorrect. This is the value of the area of the circle if the radius is equal to 8.

22. **Level:** Medium | **Domain:** ALGEBRA
Skill/Knowledge: Linear inequalities in one or two variables | **Testing point:** Solving a linear inequality

Key Explanation: Choice B is correct. To solve, first add x to both sides of the equation to get: $-2x + 6 \leq 2$. Next, subtract 6 from both sides of the equation to get:
$-2x \leq -4$ Finally, divide both sides by -2 which flips the inequality sign yielding:
$x \geq 2$ x is, therefore, greater than or equal to 2. Only Choice B is not in the domain of the equation.

Distractor Explanation: Choices A, C, and **D** are incorrect. These answer choices are solutions to the inequality and answer the opposite of what the question is asking.

1. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear functions | **Testing point:** Sum of the solutions

Key Explanation: Choice C is correct. The equation represents a quadratic in the form $ax^2 + bx + c$, where a=3, b=9, and c=−27. The sum of the solutions to a quadratic equation is given by the formula $\left(\frac{-b}{a}\right)$,Therefore, the sum of the solutions of the quadratic equation would be $\left(\frac{-9}{3}\right)$, or −3.

Distractor Explanation: Choice A is incorrect as it is $\left(\frac{b}{a}\right)$, not $-\left(\frac{b}{a}\right)$. **Choice B** is incorrect because it is the product of the solutions to the quadratic equation and not the sum of them. The product of the solutions of a quadratic equation is given by the formula $\left(\frac{c}{a}\right)$, which is $\left(\frac{-27}{3}\right)$ or −9.

Choice D is incorrect as it is the negative of the product of the solutions.

2. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Equivalent expressions | **Testing point:** Combining like terms

Key Explanation: Choice D is correct. First, distribute the negative to the terms in the parentheses as follows:

$3x^2y + 5x - 3x^2y^2 + 2x^2y$. Combining like terms yields $5x^2y + 5x - 3x^2y^2$ which is **Choice D** when the terms are arranged in standard form.

Distractor Explanation: Choices A and **C** are incorrect due to miscalculation or lack of concept knowledge. **Choice B** is incorrect. The sign changes of the terms in the parentheses when the negative sign is distributed to these terms and the parenthesis is removed.

3. **Level:** Medium | **Domain:** ALGEBRA
Skill/Knowledge: Linear inequalities in one or two variables | **Testing point:** Solving for a linear inequality

Key Explanation: To solve the inequality, first subtract 2 from both sides to get: $-2y + 2 - 2 < 6 - 2$

Next, divide both sides by −2 to get: $y > -2$
Note that multiplying or dividing by a negative number in an inequality flips the inequality sign. −1 is the least possible integer value of y which satisfies the inequality $y > -2$.

4. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear equations in one variable and systems of equations in two variables
Testing point: Discriminant and solving for linear and quadratic equations

Key Explanation: Choice A is correct. Using the substitution method, substitute the first equation for y in the second equation yielding: $2x - 5 = 2x^2 - 18x + 45$

Next, subtract the $2x$ from both sides to get $-5 = 2x^2 - 20x + 45$. Add 5 to both sides of the equation to get $0 - 2x^2 - 18x + 50$. The discriminant of a quadratic equation is $b^2 - 4ac$, when the quadratic equation is in the form $ax^2 + bx + c$. In the quadratic equation a = 2, b = −20, and c = 50. The value of the discriminant determines the number of solutions for a quadratic equation. Therefore, plugging in the values of a, b, and c into the discriminant, yields: $(-20)^2 - 4(2)(50)$ which yields 400 − 400 = 0
Therefore, the system will have one solution as the discriminant = 0.

Distractor Explanation: Choices A and **C** are incorrect, most likely due to a miscalculation.

Choice D is incorrect. Quadratic equations can't have an infinite number of solutions.

5. **Level:** Easy | **Domain:** ALGEBRA
Skill/Knowledge: Systems of two linear equations in two variables | **Testing point:** Solving linear systems using elimination or substitution

Key Explanation: Choice A is correct. The most efficient way to solve the system of equations is to subtract the two equations resulting in $x + y = 9$.

The system of equations can also be solved using the elimination or substitution methods to find x and y individually and then adding the values of x and y to find the answer.

Distractor Explanation: Choice B is incorrect as it is the value of x only and not $x + y$. **Choice D** is incorrect as it is found by the sum of the two equations which instead yields $5x - 3y = 13$, which does not give the value of $x + y$. **Choice C** is incorrect as it is due to a miscalculation or a conceptual error.

6. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Right triangles and trigonometry | **Testing point:** Trigonometric identities

Key Explanation: There is a trigonometric identity which states that $\sin x = \cos(90° - x)$

Therefore, $\sin 32° = \cos 58°$ and thus $\cos 58° = 0.551$.

7. **Level:** Hard | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Lines, angles, and triangles | **Testing point:** Conversion of measurements and area of triangles

Key Explanation: Choice D is correct. The area of a triangle is found by the formula $A = \frac{1}{2} \times$ base $\times$ height. Since the answer is required in *ft squared*, we will need to convert any lengths of the sides of the triangle that are in *inches* to *feet*.

Therefore, 10 *inches* can be converted to *feet* by multiplying it by $\frac{1}{12}$, which gives $\frac{10}{12}$ feet. This reduces to $\frac{5}{6}$ ft

Using the area of a triangle formula, the area is

$$\frac{1}{2} \times \frac{5}{6} \times 24 = 10$$

Distractor Explanation: Choice A is incorrect as this is the area of the triangle without having converted any of the side *lengths* to *feet*. **Choice B** is incorrect as even though the measurements have been converted to feet, the formula for the area used was *base* $\times$ *height* which is not the correct formula. **Choice C** is incorrect as this is the area if all the side lengths were in inches instead of *feet*.

8. **Level:** Hard | **Domain:** ADVANCED MATH
Skill/Knowledge: Equivalent expressions | **Testing point:** Subtracting fractions with variable denominators

Key Explanation: Choice C is correct. All the given answer choices have one term, and not two like the original expression. Thus, the two fractional expressions need to be combined into one fraction by getting them both over the least common denominator. The least common denominator of the two terms is $x(x - 4)$. To get both terms over the least common denominator the first term needs to be multiplied by $\frac{(x-4)}{(x-4)}$ and the second term needs to be multiplied by $\frac{x}{x}$, yielding

$$\frac{-5(x-4)}{x(x-4)} = \frac{x(x)}{x(x-4)}$$

Since the denominators of the fractions are equal, the numerators can be combined over a single fraction as follows:

$$\frac{-5(x-4)-x(x)}{x(x-4)} = \frac{-5x+20-x^2}{x^2-4x},$$

which is **Choice C.**

Distractor Explanation: Choice A is incorrect as the question asked to simplify the terms and not solve for anything. **Choices B** and **D** are incorrect and may be due to a conceptual error or miscalculation.

9. **Level:** Easy | **Domain:** ALGEBRA **Skill/Knowledge:** Linear equations in two variables | **Testing point:** Identifying linear equations from graphs

Key Explanation: Choice B is correct. The slope–intercept equation of a line is $y = mx + b$, where m is the slope and b is the *y–intercept* of the equation. The slope m of a line can be found using the equation $m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$, where (x_1, y_1) and (x_2, y_2) represent any two points on the line.

Pick two points on the line that are easy to find on the graph. The x and y intercepts of the line are two good points to use. Using points (2, 0) and (0, 6), the slope of the line can be found by plugging these points into the slope formula, yielding $\frac{(6-0)}{(0-2)}$, or $\frac{6}{-2} = -3$. The *y–intercept* of the line is 6. Therefore $y = -3x + 6$. All of the answer choices are written in an offset of the standard equation of a line $ax + by = c$. Adding $3x$ to both sides of the slope–intercept form of the equation gives the standard equation of the line as $3x + y = 6$. Multiplying all terms of the equation by 3 to better match the form of the answer choices yields $9x + 3y = 18$, which matches **Choice B.**

Distractor Explanation: Choice A is incorrect as this equation represents a line with a positive slope. From the graph the slope of the line is negative. **Choice C** is incorrect because the slope of the line is –3 and not 2. **Choice D** is incorrect because the slope of the line is –3 and not –4 .

10. **Level:** Easy | **Domain:** ADVANCED MATH **Skill/Knowledge:** Nonlinear functions | **Testing point:** Finding *y–intercept*

Key Explanation: The *y–intercept* occurs where $x = 0$, $y - 7 = 3^0 - 5$. Anything to the power of zero = 1, so $y - 7 = 1 - 5$. Adding 7 to both sides of the equation to solve for y yields $y - 7 + 7 = 1 - 5 + 7$, $y = 3$.

11. **Level:** Medium | **Domain:** ADVANCED MATH **Skill/Knowledge:** Nonlinear functions | **Testing point:** Finding the value that makes a function undefined

Key Explanation: Choice C is correct. A function is undefined when the denominator is equal to 0. To find what values of x make this occur, solve the equation $x^2 - 2x - 15 = 0$ for x. Use the grouping method of factoring to determine what two numbers multiply to –15 but add up to –2. The two numbers would be –5 and 3. Thus, the middle term of the quadratic equation can be written as $-5x + 3x$, instead of $-2x$ as follows: $2 - 5x + 3x - 15 = 0$. Grouping the terms and factoring out the greatest common factor of each group, yields $x(x - 5) + 3(x - 5) = 0$ $(x+3)(x-5) = 0$, $x = -3$, and $x = 5$. Only the solution to the quadratic equation $x = -3$ meets the question condition that x be less than zero. Thus, C is the correct answer.

Distractor Explanation: Choice A is incorrect since this is the positive x value of the solution and the value needs to be less than zero. **Choice B** is incorrect as it gives the negative value 5, which could be the result of factoring incorrectly. **Choice D** is incorrect. It may be due to a miscalculation.

12. **Level:** Medium | **Domain:** ALGEBRA
Skill/Knowledge: Linear functions | **Testing point:** Finding the *x-intercept* given two points

Key Explanation: Choice A is correct. $f(3) = -1$ and $f(4) = -3$ represent the x and y values of two points on a line. The points are (3, –1) and (4, –3). To find the x-intercept of the line represented, the equation of the line first needs to be determined. The slope-intercept form of the equation of the line, $y = mx + b$ is easiest to use. In this equation, m represents the slope of the line and b its *y-intercept*. The slope of a line can be found using the slope formula $m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$. Plugging in the two points into the slope formula yields

$m = \frac{-3-(-1)}{4-3} = -2$.

Therefore the equation of the line is:, $y = -2x + b$.

To find b, plug either point into the equation and solve for b. Using the point (3, –1) yields

$-1 = -2(3) + b$, $-1 = -6 + b$, $b = 5$.

Therefore the equation of the line is $y = -2x + 5$. The *x-intercept* of a line occurs where $y = 0$. Plugging in zero for y into the equation and solving for x gives the following *x-intercept*:

$0 = -2x + 5$, $2x = 5$, $x = 2.5$ *or* $\frac{5}{2}$.

Distractor Explanation: Choice B is incorrect as this is the *y-intercept*. **Choice C** is incorrect as this is the slope of the line. **Choice D** is incorrect and is the result of a miscalculation in solving for the *x-intercept*.

13. **Level:** Hard | **Domain:** ALGEBRA
Skill/Knowledge: Linear functions | **Testing point:** Transformations and Solving for function values

Key Explanation: The function $f(x + 3)$ is moved to the left by 3 units, therefore we should also move the x value in $f(x)$ to the left by 3 units to get 2 – 3 or $f(-1)$

Therefore $f(-1)$ is found by substituting –1 into the equation for x as follows:
$5(-1) - 17 = -22$.

14. **Level:** Hard | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Ratios, rates, proportional relationships, and units | **Testing point:** Calculating average speed with unknown variable

Key Explanation: Choice B is correct. Average speed is calculated by taking the total distance traveled divided by the total time to travel that distance.

The total distance traveled would be $x + x = 2x$

The total time taken would be 2.5 *hrs* + 1.5 *hrs* = 4 *hrs*

Therefore, the average. speed = $\frac{2x}{4} = \frac{x}{2}$

Distractor Explanation: Choice A is incorrect as it does not account for the fact that there is a return trip. **Choice C** is incorrect as it incorrectly accounts for the time it took Amber to do her errands. **Choice D** is incorrect as it may be due to a conceptual error or the student incorrectly found the total distance traveled.

15. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Area and volume | **Testing point:** Perimeter of a rectangle

Key Explanation: Choice B is correct. If the width of the rectangle is w, the length would be $w+3$. The area of a rectangle can be found by multiplying the width of the rectangle by its length.

Therefore the area of the rectangle would be $w(w+3)=28$. Using the distributive property, the equation can be expanded out to:

$$w^2+3w=28$$

$$w^2+3w-28=0$$

Factoring the equation yields $(w+7)(w-4)=0$

Setting both factors of the equation equal to 0 results in $w=-7$ and $w=4$. Since the width of a rectangle cannot be negative, -7 is not a valid width for the rectangle. Therefore the width of the rectangle would be 4 and the length would be $4+3$ or 7. The perimeter of a rectangle is found by the formula $P=2(l+w)$. Plugging in the determined values for w and l yields

$2(7+4)=22$ or **Choice B.**

Distractor Explanation: Choice A is incorrect as this value is the sum of the length and the width and not two times the sum. **Choice C** is incorrect as this is half the area. **Choice D** is incorrect and may be due to conceptual error.

16. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Inference from sample statistics and margin of error | **Testing point:** Inference from sample statistics

Key Explanation: The students surveyed who do not practice sanitary routines are (48 – 23) = 25. It can therefore be extrapolated that $\frac{25}{48}$ of all the students in the school donot practice sanitary routines. Therefore $\left(\frac{25}{48}\right)\times 2{,}280$ or 1,187.5 students. This rounds up to 1,188 students.

17. **Level:** Medium | **Domain:** ALGEBRA
Skill/Knowledge: Linear functions | **Testing point:** Linear transformations

Key Explanation: Choice D is correct. To move one unit up, 1 is added to the equation. To move 1 unit to the left, 1 is added to the x term in the equation as follows

$y = 2(x+1) + 1$

$y = 2x + 2 + 1$

$y = 2x + 3$

Distractor Explanation: Choice A is incorrect as this is moving the line to the right 1 unit and up by 1 unit. **Choice B** is incorrect as this is moving the line only up by one unit and not moving it to the left. **Choice C** is incorrect as this answer may be due to a conceptual issue.

18. **Level:** Medium | **Domain:** ADVANCED MATH
Skill/Knowledge: Nonlinear equation in one variable and systems of equations in two variables
Testing point: Finding the vertex of a parabola

Key Explanation: Choice D is correct. The standard form of a parabola is represented by the equation $y = ax^2 + bx + c$. In the equation given, $a = 2$, $b = 8$, and $c = 12$. The x coordinate of the vertex is found using the formula $\left(\frac{-b}{2a}\right)$. Thus, $\left(\frac{-8}{2(2)}\right)=-2$

Distractor Explanation: Choice A is incorrect as this is the product of the solutions to the quadratic equation. **Choice B** is incorrect as this is the sum of the solutions to the quadratic equation. **Choice C** is incorrect and is found by incorrectly using $\left(\frac{b}{a}\right)$.

19. **Level:** Easy | **Domain:** ADVANCED MATH
Skill/Knowledge: Equivalent expressions | **Testing point:** Long division and remainder theorem

Key Explanation: B is the remainder when $x^2 - 6x + 10$ is divided by $x + 2$. When the divisor is equated to 0, we find $x = -2$, we can then find the remainder by substitute -2 in place of x $\left(-2^2 - 6(-2) + 10\right)$ which yields 26, this is the value of B.

20. **Level:** Easy | **Domain:** GEOMETRY AND TRIGONOMETRY
Skill/Knowledge: Lines, angles, and triangles | **Testing point:** The pythagorean theorem

Key Explanation: Choice B is correct. The Pythagorean theorem states that the sum of the squares of the lengths of the sides of a right triangle is equal to the square of the length of the hypotenuse of the triangle, or $a^2 + b^2 = c$. Plugging in 11 for a and 61 for c yields $11^2 + b^2 = 61^2$

$b^2 = 61^2 - 11^2$

$b^2 = 3{,}721 - 121$

$b^2 = 3{,}600$

Therefore, $b = 60$.

Distractor Explanation: Choices A and **D** are incorrect and may be due to conceptual or calculation errors. **Choice C** is incorrect and can be found by adding $61^2 + 11^2$ and finding the square root instead of subtracting the two numbers.

21. **Level:** Easy | **Domain:** PROBLEM-SOLVING AND DATA ANALYSIS
Skill/Knowledge: Evaluating statistical claims: observational studies, and experiments | **Testing point:** Observational experiments

Key Explanation: Choice D is correct. This statement is true because it is not certain that taking supplements would directly equate to an improvement in student performance. It is not known if all other variables were kept constant. Therefore, a direct cause-and-effect relationship cannot be determined. Also, the sample size is too small to generalize to a larger population.

Distractor Explanation: Choices A, **B**, and **C** are incorrect. These statements are false and imply that there is a relationship between student performance and taking supplements.

22. **Level:** Easy | **Domain:** ALGEBRA
Skill/Knowledge: Systems of two linear equations in two variables | **Testing point:** Solving for system of linear equations

Key Explanation: Choice A is correct. The most efficient way to answer this question is to not solve the system of equations for x and y individually, but rather to subtract the second equation from the first, yielding $-x + y = -5$. Therefore $y - x = -5$.

Distractor Explanation: Choice B is incorrect. This is the negative value of option A and is due to a calculation mistake. **Choice C** is incorrect. This is the value of y. **Choice D** is incorrect. This is the value of x.

This page is intentionally left blank