



TEST PREP AND
ADMISSIONS

SAT^{®*} / ACT^{®**}

Combo Sample Test Answers & Explanations

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Section 1 (SAT Writing—Essay)

Grade 6 Essay

As humans, we can sometimes have an antagonistic relationship with the natural world. On too many occasions, we look at nature as something that must be overcome or improved upon. We have the tools and knowledge to alter our own environment, but we often do not have the foresight to see how those alterations might affect the natural world in the long run. In order to avoid damaging, or even destroying the natural world, we must be cautious and thoughtful about the way we interact with and use our natural resources.

Over the past ten years or so, there has been much discussion about pollution and global warming. Most scientific evidence shows that air pollutants produced in mass quantities by humans have been having a cumulative effect on the atmosphere. Air pollution has damaged the ozone layer, so more sunlight reaches the Earth's surface. The net effect of this is that the Earth's average temperature is slowly increasing because of the irresponsible way humans have allowed pollution to increase. Effects of global warming include raised sea levels (which can wipe out coastal areas), changing weather patterns (which can affect crop production), and warmer oceans (which contributes to the strength of tropical storms and hurricanes). Thus, by not respecting the delicate balance of the Earth's atmosphere, we have harmed ourselves.

Pollution is not the only area in which it becomes apparent that we must have respect for the natural world. Through years of study, environmentalists have found that ecosystems have very delicate balances. Changing any part of the ecosystem can cause disastrous changes that are magnified throughout the ecosystem. A famous example of this occurred in Australia. Originally, the country did not have any rabbits. But some people imported a small group of rabbits that was released into the countryside. Within a few years, the rabbit population was out of control. There was no natural predator of rabbits in Australia, so there was nothing to keep the population in check. As the rabbits reproduced exponentially, they ruined endless acres of vegetation by overgrazing; in addition, some other native species were wiped out. To this day, Australia has a serious problem controlling the rabbit population. A workable and longterm solution has not been achieved in over 100 years of dealing with the problem. If people had had more respect for the natural system, they might have thought that introducing a new species could cause serious problems.

All of this is not to suggest that we should step back from scientific and technological advancements and allow ourselves to be at the mercy of nature's whims. Instead, we must have respect for the power of nature and always remember that we are a part of the natural world. We must act responsibly as we progress and examine the potential effects of our advancement before we put things into motion. Indeed, we must respect the natural world and appreciate the earth.

Grader's Comments: This Essay provides a clear, direct answer to the Prompt question, and each paragraph provides support for this answer.

The Essay is well organized, with an introduction, body paragraphs, and conclusion, indicating that the writer took adequate time formulating a Plan. Strong transitions are used to connect ideas between and within paragraphs, making the Essay flow smoothly.

The two body paragraphs present specific details to support the writer's position. In addition, the reasoning in the conclusion shows a fair amount of critical thought.

The writer exhibits strong vocabulary—such as “foresight,” “cumulative,” and “exponentially”—throughout the Essay. In addition, the writer successfully uses a variety of sentence structures. Although there are a few minor errors, none of the errors affects readability.

Grade 4 Essay

Human progress cannot happen without our respect for the natural world. No matter how far we advance in science and technology we won't be able to change the rules of the natural world. This includes weather, earthquakes, and other natural disasters. How we treat the natural world will have a lot to do with how much progress the human race can make for the next generations.

To start with, there is no way that people can stop the weather. An example of this are hurricanes. Over the past few years there's been a lot of hurricanes that have caused serious damage and killed people. They have the technology to track the storms and evacuate people ahead of time, but they don't have anything that can stop or move a hurricane. And even when we do know a hurricane is coming it can be impossible to evacuate everyone in time. That's what happened in New Orleans with Katrina, and that storm left damage that will take years for them to recover from. So no matter how advanced we are, mother nature always can be more powerful than us. That's one reason that we need to respect the natural world. That means things like protecting wetlands and the rainforest and thinking about the way we use resources.

We also need to respect the world because we need it to survive. The oxygen we breathe comes from plants and trees, and the food that we eat comes from the earth. If we destroy too many trees and forests then the quality of our air decreases. The quality of the soil affects the quality of the food. So if there are pollutions in the soil, those pollutions get into the food that we eat and make people sick. We've got ways to go with technology before we aren't depending on the quality of the earth's soil, water, and air for our health and survival.

Finally, any kind of scientific progress needs to rely on the rules of the natural world. For example the rules of gravity are a part of the equation of how planes and rockets fly. That's just one natural rule that we need to respect and work with. The whole human set of chromosomes was recently mapped out. They will probably be able to make lots of cures for diseases based on this knowledge but they must respect the genetic structure of humans. It would get too out of hand if scientists started messing around with human genes, like with cloning or taking genes from other animals.

All in all, there is no way to escape from the fact that humans have to respect nature. It is something that in the end we can't control. We can just find ways to work with or work around nature, not conquer it. We should think of nature as our partner instead of like an enemy we need to outwit

Grader's Comments: The Essay addresses the question in the Prompt and generally remains focused on this issue. The introduction and conclusion employ Keywords from the Prompt. Organization in the Essay is good, with a clear introduction, body paragraphs, and conclusion, indicating a well-thought-out Plan. Simple transitions are used to connect the ideas between paragraphs.

Each body paragraph presents sound reasoning in support of the writer's position, with somewhat detailed examples.

In general, the writer uses simple words and sentence structures. There are several distracting errors, including mistakes in subject-verb agreement and pronoun use. In addition, some language (such as "messing around with") is too slangy for a formal Essay.

Grade 1 Essay

When I was in eighth grade (I think) we read a great story called To Build A Fire, it was about this guy who was out hiking in the wilderness. I think he was a part of the gold rush. It was like the dead of winter and he was all by himself but he kept on going and going through the snow. He could of stopped at any time to build a camp and a fire where he could safely spend the night, have something to eat, and make the part of his trip the next morning, but he didn't stop. He ignored all of the warning signs of cold and tired because he was so stubborn. He wanted to get to his place that night. I think to get money or make a deal or something. So by the time he finally stops and tries to make a fire because he realizes he can't make it there that night cuz it's too late. He can't get the fire going because his fingers are so numb from the cold. He doesn't have the energy left to keep walking so he dies from the cold.

This story has always stuck with me. The man in the story should of listened to what his instinct was telling him instead of to his pride. He should of stopped and build a fire much earlier. So everybody could learn a lot from this story about how to respect nature more and why its important.

Grader's Comments: This Essay only partially addresses the Prompt question, discussing the need for humans to respect nature but failing to discuss how this is related to human progress. The Essay focuses more on a plot summary of the short story than on a response to the question posed in the assignment.

Though the Essay has a conclusion, there is no introduction to help the reader connect the summary of the story to the question in the Prompt. The Essay provides several details about the short story, but these details act mostly as plot summary instead of as support for the author's position.

Although the errors in the Essay do not obscure the writer's meaning, several errors are distracting (including run-on sentences, verb tense shifts, and the incorrect constructions "could of" and "should of").

Section 2 (SAT Writing)

- 1. C** **Category:** Wordiness
Difficulty: Medium
Issues: run-ons and fragments
Strategic Advice: If you don't spot an error in grammar or usage, check for errors in style.
Getting to the Answer: This sentence is not grammatically incorrect, but it is unnecessarily wordy. (C) makes the sentence more concise without changing its meaning or introducing any additional errors.
(B) creates a sentence fragment.
(D) is still unnecessarily wordy.
(E) creates a run-on sentence.
- 2. B** **Category:** Subject–Verb
Difficulty: Medium
Issues: style problems, run-ons and fragments
Strategic Advice: Don't mistake the object of a preposition for the subject of a verb.
Getting to the Answer: This is a common SAT trap. While the plural "executives" is closer to the verb here, its subject is actually the singular "each." (B), (C), and (E) all change the verb to the singular "was," but (C) misuses the semicolon splice, which is only correct when used to combine independent clauses, and (E) creates a grammatically incorrect sentence.
(D) does not address the error; additionally, it creates a run-on sentence.
- 3. C** **Category:** Passives
Difficulty: Medium
Issues: ambiguity, idioms
Strategic Advice: You can recognize the passive voice because in a passive construction, the subject is being acted upon, rather than acting itself.
Getting to the Answer: The second clause of this sentence is in the passive voice; (C) makes it active.
The pronoun "it" in (B) has no antecedent.
(D) makes the second clause active, but its first clause is passive; it also uses the pronoun "it" without an antecedent.
The first clause in (E) is passive, and "be achieving of it" is idiomatically incorrect.
- 4. A** **Category:** Correct as Written
Difficulty: High
Issues: pronouns, wordiness, subject–verb
Strategic Advice: Not sure if a sentence is correct as written? Use elimination strategies to rule out answer choices.
Getting to the Answer: The best version of this sentence is as it is written.
In (B), the plural subject and verb do not agree with the pronoun "one."
(C) is unnecessarily wordy.
In (D), the verb "are" doesn't agree with its singular subject, "creating."
(E) changes the meaning of the sentence, suggesting that the piano itself creates the musical phrases.
- 5. C** **Category:** Verb Tenses
Difficulty: Medium
Issues: run-ons and fragments

Strategic Advice: The past perfect verb tense is only correct when it refers to an action that is completed prior to another stated past action.

Getting to the Answer: Since this sentence does not mention an action completed prior to the decision to order the tickets, the simple past tense “decided” is correct.

(B) creates a sentence fragment.

(D) and (E) introduce verb tenses that are inappropriate in context.

6. E **Category:** Subject–Verb

Difficulty: High

Issues: verb tenses, idioms

Strategic Advice: The test maker will frequently place descriptive phrases and clauses between verbs and their subjects; cross them out in your test booklet to determine subject–verb agreement easily.

Getting to the Answer: The subject in this sentence is the plural “pieces,” so “dupes” should be “dupe.” (C), (D), and (E) all correct this error, but (C) makes an unwarranted verb tense change and the idiom “referring to” in (D) changes the meaning of the sentence.

(B) does not address the error and introduces an illogical verb tense change as well.

7. D **Category:** Ambiguity

Difficulty: High

Issues: wordiness, style problems

Strategic Advice: Pronouns without clear antecedents are often acceptable in everyday speech, but will be incorrect on the SAT.

Getting to the Answer: There is no logical antecedent in this sentence for the singular pronoun “it.” (D) eliminates the ambiguous pronoun.

(B) and (C) are unnecessarily wordy, and the antecedent for “they” in (B) is unclear. (E) creates a grammatically incorrect sentence.

8. E **Category:** Transitions

Difficulty: Medium

Issues: wordiness, passives, style problems

Strategic Advice: Make sure transition words create sentences that are logically, as well as grammatically, correct.

Getting to the Answer: “To the extent that” means “insofar as,” or “to the degree that.” A transition indicating causality is needed here. “Since,” in (E), creates the best transition.

(B), (C), and (D) are all wordy and introduce the passive voice unnecessarily; additionally, (C) creates a grammatically incorrect sentence, and the singular verb “was” in (D) does not agree with “small parts.”

9. C **Category:** Parallelism

Difficulty: Medium

Issues: wordiness, style problems

Strategic Advice: Items in a series, list, or compound must be parallel in structure.

Getting to the Answer: Only (C) makes this compound verb structure parallel without introducing additional errors.

(B) introduces a parallelism error, and “if” is redundant with “whether.”

(D) and (E) leave the meaning of the second clause incomplete.

10. **B** **Category:** Run-ons and Fragments
Difficulty: Medium
Issues: style problems
Strategic Advice: The *-ing* verb form can never be the predicate verb in a sentence.
Getting to the Answer: The sentence as written is a fragment. (B) adds the necessary predicate verb.
(C) and (E) do not address the error.
(D) creates a grammatically incorrect sentence.
11. **B** **Category:** Pronouns
Difficulty: High
Issues: style problems, wordiness
Strategic Advice: Most SAT sentences will have multiple nouns; make sure any underlined pronouns agree with the appropriate antecedents.
Getting to the Answer: This sentence uses the plural pronoun “them” to refer to the singular noun “person.” (B) replaces the plural pronoun with the singular “him or her.”
(C) uses a singular pronoun with the plural antecedent “people” and leaves the meaning of the second clause incomplete.
(D) is unnecessarily wordy and uses the pronoun “them” with no antecedent.
(E) leaves the meaning of the second clause incomplete.
12. **E** **Category:** Wordiness
Difficulty: Medium
Issues: none
Strategic Advice: The shortest answer choice will not always be correct, but it’s a good place to start.
Getting to the Answer: All of the choices here but (E) are unnecessarily wordy.
13. **A** **Category:** Correct as Written
Difficulty: Medium
Issues: wordiness
Strategic Advice: If all of the answer choices are longer than the original, make sure any additions are logically and grammatically correct.
Getting to the Answer: This sentence is correct as written. All of the other choices are unnecessarily wordy.
14. **E** **Category:** Wordiness
Difficulty: Medium
Issues: run-ons and fragments, style problems
Strategic Advice: Not all long constructions will be incorrect on the SAT, but always look for a more concise version of wordy phrases.
Getting to the Answer: (E) creates a more concise sentence without introducing any new errors.
(B) and (C) create run-on sentences.
(D) misuses the semicolon splice, which is only correct when used to combine independent clauses.
15. **B** **Category:** Pronouns
Difficulty: Medium
Issues: fragments and run-ons, idioms

Strategic Advice: Pronoun use must be consistent in person.

Getting to the Answer: This sentence starts out using the second-person pronoun “you,” then switches to the third-person “one.” Both (B) and (E) correct the pronoun error, but “awed with” is not idiomatically correct.

(C) creates a sentence fragment.

(D) does not address the error and uses the idiomatically incorrect “awed with.”

16. **D** **Category:** Modifiers

Difficulty: Medium

Issues: idioms, fragments and run-ons

Strategic Advice: An introductory modifying phrase will generally modify the first noun that follows it.

Getting to the Answer: As written, the opening phrase of this sentence modifies “attempt,” rather than “Franklin Roosevelt.” Both (C) and (D) place the proper noun after the modifying clause, but (C) creates a sentence fragment.

(B) does not address the error and uses the idiomatically incorrect “damaging of.”

In (E), it is Roosevelt’s “standing” that was “regarded by many historians as the greatest president of the twentieth century.”

17. **B** **Category:** Verb Tenses

Difficulty: Medium

Issues: transitions, wordiness

Strategic Advice: Use logic to determine proper verb tense usage.

Getting to the Answer: Since context tells us that the brownies have already been baked, the future perfect tense in this sentence is incorrect. (B), (D), and (E) all correct the verb tense error, but (D) uses an inappropriate transition word in context, and (E) is unnecessarily wordy.

(C) does not address the error.

18. **B** **Category:** Run-ons and Fragments

Difficulty: Medium

Issues: wordiness

Strategic Advice: The correct answer choice may not address an error in the way you expect.

Getting to the Answer: The sentence as written is a run-on. Since the comma isn’t underlined, adding a semicolon isn’t an option. (B) uses a FANBOYS conjunction to combine the independent clauses.

(C) and (E) do not address the error.

(D) is unnecessarily wordy.

19. **D** **Category:** Comparison

Difficulty: Medium

Issues: idioms, subject–verb

Strategic Advice: When a sentence presents a comparison, make sure that logical items are being compared.

Getting to the Answer: As written, this sentence compares “residents of India” to “any other country.” (D) should read “residents of any other country” or “those of any other country.”

(A) is correct idiomatic usage.

(B) agrees with its plural subject, “residents.”

(C) correctly completes the idiomatic comparison “more...than.”

20. **C** **Category:** Modifiers
Difficulty: Low
Issues: pronouns, transitions
Strategic Advice: Make sure underlined adjectives and adverbs are modifying the correct parts of speech.
Getting to the Answer: The adjective “deliberate” in this sentence is modifying the verb form “developed.” Verbs and verb forms are modified by adverbs; (C) should be “deliberately.”
The pronouns in (A) agree with the singular antecedent “author.”
(B) correctly establishes the cause-and-effect relationship between the clauses.
(D) provides the appropriate contrast between the final clause and those that came before.
21. **C** **Category:** Verb Tenses
Difficulty: Medium
Issues: transitions, idioms
Strategic Advice: The past perfect is only correct when you denote an action that occurred prior to another stated past action.
Getting to the Answer: The verb in (C) is incorrectly in the past perfect tense. Franklin “aided” at the same time that he “was still a major intellectual force,” so the two verbs should be in the same tense.
(A) and (B) appropriately combine and relate the sentence’s clauses.
(D) is correct idiomatic usage.
22. **D** **Category:** Diction
Difficulty: Medium
Issues: idioms, pronouns, transitions
Strategic Advice: Learn the participle forms of common irregular verbs; you may see one or two questions on the SAT that deal with this issue.
Getting to the Answer: The past participle of the verb “to tear” is “torn,” not “tore”; the error is in (D).
(A) is idiomatically correct in context, and “us” agrees with its plural antecedent, “my brother and I.”
(B) uses the proper pronoun case.
(C) is an appropriate transition word in context.
23. **A** **Category:** Subject–Verb
Difficulty: Low
Issues: verb tenses, idioms, parallelism
Strategic Advice: “There” can be used with either singular or plural verbs; use context to determine which is correct.
Getting to the Answer: “Buildings” is plural, so “there is” in (A) should be “there are.”
(B) is appropriate use of “where” to refer to a location.
(C) is correct idiomatic usage.
(D) is correctly plural, since it refers to “every village.”
24. **E** **Category:** Correct as Written
Difficulty: High
Issues: transitions, idioms, subject–verb, modifiers
Strategic Advice: “Correct as written” sentences can only be determined using your elimination strategies.

Getting to the Answer: This sentence does not contain any errors.

- (A) properly relates the two clauses in the sentence.
- (B) is correct idiomatic usage.
- (C) agrees with its singular subject, “series.”
- (D) appropriately uses an adjective to modify a noun.

25. **B Category:** Verb Tenses
Difficulty: Mediums
Issues: idioms
Strategic Advice: Make sure verb tenses logically sequence events in a sentence.
Getting to the Answer: This sentence indicates the past in the opening phrase; the present tense verb in (B) should be “achieved” or “had achieved.”
(A) and (D) are correct idiomatic usage.
(C) properly uses an adverb to modify a verb phrase.
26. **B Category:** Idioms
Difficulty: High
Issues: subject–verb
Strategic Advice: The verb form “considered” in this context requires the infinitive.
Getting to the Answer: (B) should read “to be.”
(A) agrees with its singular subject; although the title is plural, only one book is mentioned.
(C) and (D) are idiomatically correct in contest.
27. **B Difficulty:** Medium
Category: Diction
Issues: transitions, idioms, pronouns, verb tenses
Strategic Advice: Be wary of the differences between similar sounding words.
Getting to the Answer: “Effect” when used as a verb, means “to come.” The correct verb here is “affect” which means “to have an effect.”
(A) appropriately indicates the cause-and-effect relationship between the ideas in the sentence.
(C) uses the idiom “both...and” correctly, and the pronoun is properly in the subjective case.
(D) is the correct verb tense for an action that will occur in the future.
28. **A Category:** Modifiers
Difficulty: Low
Issues: subject–verb, idioms, parallelism
Strategic Advice: Use the comparative (—*er* or “more”) adjective form when comparing two things; use the superlative (—*est* or “most”) to compare three or more items.
Getting to the Answer: Since this sentence concerns all parts of the trip, the adjective in (A) should be “scariest.”
(B) agrees with its singular subject.
(C) is idiomatically correct and properly uses a plural noun, since multiple customs officials would have more than one accent.
(D) is also idiomatically correct usage.
29. **C Category:** Idioms
Difficulty: High

Issues: verb tenses

Strategic Advice: Use “either” with “or” and “between” with “and.”

Getting to the Answer: (C) contains an idiomatic error; “between...and” would be correct here.

(A) and (B) are correct idiomatic usage.

(D) is an appropriate verb tense in context.

30. **C** **Category:** Parallelism

Difficulty: Medium

Issues: subject–verb, pronouns, verb tenses

Strategic Advice: Comparisons must be presented in parallel form.

Getting to the Answer: Here, “Drawing” and “to play” are not parallel; (C) should be *playing*.

(A) agrees with its subject “Drawing.” (Verb forms functioning as nouns are grammatically singular.)

(B) uses the appropriate pronoun case in context.

(D) is an appropriate verb tense in context.

31. **D** **Category:** Pronouns

Difficulty: Medium

Issues: transitions, idioms

Strategic Advice: Check underlined pronouns for case as well as antecedent.

Getting to the Answer: The pronoun in (D) is incorrectly in the subjective case; the objective “me” would be correct here.

(A) appropriately relates the ideas in the sentence.

(B) is correct idiomatic usage.

(C) properly uses “few” to refer to a countable item, “movies.” (Use *less* for things that can’t be counted.)

32. **D** **Category:** Ambiguity

Difficulty: Medium

Issues: reading comprehension, run-ons and fragments, verb tenses

Strategic Advice: If a pronoun could logically refer to more than one antecedent noun, the pronoun is ambiguous.

Getting to the Answer: Here, “this” could refer to “the harpsichord,” “the clavichord,” or “the piano,” all of which are mentioned in the previous sentence. Changing “this” to “the harpsichord” eliminates the ambiguity. None of the other answer choices addresses the ambiguity error. Additionally, switching sentences 3 and 4 interrupts the chronological flow of the essay; changing “However,” to “Even though” creates a sentence fragment; and the verb form suggested in (E) is incorrect without a helping verb.

33. **C** **Category:** Run-ons and Fragments

Difficulty: Medium

Issues: transitions, style problems

Strategic Advice: A “sentence” may have multiple nouns and verbs and still be a fragment.

Getting to the Answer: Sentence 6, as written, is actually a fragment. (C) combines the sentences to both eliminate the sentence fragment and properly relate the two ideas.

- (A) reverses the cause-and-effect relationship between the two sentences.
- (B) misuses the semicolon splice, which is only correct when used to combine two independent clauses.
- (D) is awkward.
- (E) loses the cause-and-effect relationship present in the original sentences.

34. **A** **Category:** Reading Comprehension

Difficulty: Medium

Issues: none

Strategic Advice: About one-half of Improving Paragraphs questions will require you to use your Reading Comp skills.

Getting to the Answer: You're looking for the first sentence of a paragraph, which should transition smoothly from the previous paragraph into the new one. (A) continues the chronological history of the piano from paragraph 1 and sets up sentence 8 and the rest of paragraph 2.

While (B) follows logically from sentence 7, it does not introduce the topic of the new paragraph, which is what the question stem is asking for.

(C) is Out of Scope; the new paragraph concerns later modifications to and uses of the piano.

(D) is also Out of Scope; current piano usage is touched on briefly, but current piano design is not.

(E) fails to make a smooth transition between the paragraphs.

35. **D** **Category:** Reading Comprehension

Difficulty: Medium

Issues: none

Strategic Advice: When asked to delete a sentence, use context clues to determine the relevance of each answer choice.

Getting to the Answer: Sentence 11 presents information that is Out of Scope for the topic of this passage, which is the development of the piano.

(A), Sentence 3, explains Cristofori's reasons for inventing the piano.

(B), Sentence 5, continues the chronological development of the instrument.

(C), Sentence 10, provides the result of the event described in sentence 9.

Eliminating sentence 13, (E), would leave the passage without a conclusion.

Section 3 (SAT Math)

1. **E** **Category:** Equations
Difficulty: Low
Strategic Advice: The first step in solving an equation is to get all the terms with the variable on one side. Sometimes that's already been done for you.
Getting to the Answer: Combine like terms and solve for the variable.

$$4y - 7y + 6y = 27$$

$$3y = 27$$

$$y = 9$$

2. **C** **Category:** Ratios
Difficulty: Medium
Strategic Advice: Translate the English in the question stem into a mathematical expression.
Getting to the Answer: The \$50 is for the group as a whole, and the individual \$8 and \$7 must be multiplied by the number of skiers and the number of snowboarders, respectively.
 Total cost = group charge + (\$8)(# of skiers) + (\$7)(# of snowboarders)
 Total cost = \$50 + (\$8)(12) + (\$7)(10)
 Total cost = \$50 + \$96 + \$70
 Total cost = \$216

3. **E** **Category:** Data Analysis
Difficulty: Low
Strategic Advice: Use a calculator to determine percentages easily. Remember to make the percentage into a decimal by dividing the percentage by 100.
Getting to the Answer: To determine the number of German Shepherds owned by college students, you must multiply the total number of dogs owned by college students by the percentage that are German Shepherds.
 $12,000(0.14) = 1,680$
 The correct answer choice is (E).

4. **E** **Category:** Angles
Difficulty: Medium
Strategic Advice: Whenever you see intersecting lines, look for vertical and supplementary angles.
Getting to the Answer: Find the measure of each angle marked in the figure. The angles marked b° and 110° form a straight line, so they are supplementary and $b = 180 - 110 = 70$. The measure of angle a° can be found from the triangle in the figure: $a + b + 50 = 180$, so $a = 180 - b - 50 = 180 - 70 - 50 = 60$. Angles a° and c° are supplementary, so $c = 180 - a = 180 - 60 = 120$. Angles d° and 50° are vertical, so $d = 50$. Angles e° and 50° are supplementary, so $e = 180 - 50 = 130$. Therefore, angle e° is the greatest of these five angles.

5. **C** **Category:** Averages
Difficulty: Medium
Strategic Advice: Whenever you see an average, you'll need the three-part formula

$$\text{average} = \frac{\text{sum of terms}}{\text{number of terms}}$$
 If you know any two parts of the three-part formula, you can find the third.

Getting to the Answer: First, solve for r :

$$5 = \frac{3 + r}{2}$$

$$10 = 3 + r$$

$$7 = r$$

Next, solve for s :

$$9 = \frac{7 + s}{2}$$

$$18 = 7 + s$$

$$11 = s$$

Finally, find the average of r and s :

$$\frac{7 + 11}{2} = 9$$

6. **C** **Category:** Logic

Difficulty: Medium

Strategic Advice: Charts can help you arrange complicated information.

Getting to the Answer: Set up a chart and fill in all the information given in the question stem.

	cargo	no cargo	total
wide-leg			35
not wide-leg	≥ 5		
total	20	30	50

Since there are 50 pairs of pants, 35 of which have the wide-leg design, there are $50 - 35 = 15$ pairs which do not have the wide-leg design. You know that at least 5 of these non-wide-legged pants have cargo pockets, so at most $15 - 5 = 10$ of them cannot have cargo pockets. That's exactly what you're looking for, so (C) is correct.

	cargo	no cargo	total
wide-leg			35
not wide-leg	≥ 5	≤ 10	15
total	20	30	50

7. **A** **Category:** Non-Linear Graphs

Difficulty: Medium

Strategic Advice: When you need to match a graph on the coordinate plane with an equation, test the equations by plugging in (x, y) points from the graph.

Getting to the Answer: Eliminate the equations that are not satisfied by the coordinates of the points on the graph. Start with points that are easy to work with, like $(0, 4)$. For $x = 0$:

(A) $y = 4 - 0^2 = 4$. Keep it.

(B) $y = 4 + 0^2 = 4$. Keep it.

(C) $y = (4 - 0)^2 = 4^2 = 16 \neq 4$. Eliminate.

(D) $y = (4 + 0)^2 = 4^2 = 16 \neq 4$. Eliminate.

(E) $y = -4(0^2) = 0 \neq 4$. Eliminate.

To choose between (A) and (B), consider the point $(2, 0)$. For $x = 2$:

(A) $y = 4 - 2^2 = 4 - 4 = 0$. Keep it.

(B) $y = 4 + 2^2 = 4 + 4 = 8$. Eliminate.

The only answer choice that works for all the points on the graph is (A).

8. **B** **Category:** Percents

Difficulty: High

Strategic Advice: The first step in any word problem is to translate English into math.

Getting to the Answer: First, translate the question into an equation. Then solve

for $\frac{c}{b}$.

$$\left(\frac{20}{100}\right)b = \left(\frac{c}{100}\right)80$$

$$20b = 80c$$

$$b = 4c$$

$$\frac{b}{4} = c$$

$$\frac{1}{4} = \frac{c}{b}$$

9. **105** **Category:** Equations

Difficulty: Medium

Strategic Advice: To avoid confusion, make sure you work systematically when you translate a word problem from English to math.

Getting to the Answer: In 1990, Tom took out 20 books, and in 1991 he took out 45 books, so the number of books he took out increased by 25 from one year to the next. The increase in the number of books Mary took out is three times that, or $25 \times 3 = 75$. In 1990, Mary took out 30 books, so in 1991 she took out $30 + 75 = 105$ books.

10. **7.5** or $\frac{15}{2}$

Category: Ratios

Difficulty: Medium

Strategic Advice: Create and solve a proportion. Be sure that matching parts of the proportion are in matching positions (i.e., the width is in the numerator of both fractions).

Getting to the Answer: You know the length and width of the original box, as well as the width of the smaller box. Since the proportions are the same, the ratio of the original width to the original length is the same as the ratio of the new width to the new length. Say l is the new length.

$$\frac{8}{12} = \frac{5}{l}$$

$$8l = 12(5)$$

$$8l = 60$$

$$l = \frac{60}{8} = \frac{15}{2} = 7.5$$

11. **8** **Category:** Equations

Difficulty: Low

Strategic Advice: Work methodically and follow PEMDAS.

Getting to the Answer: Begin by simplifying the expression in parentheses and substituting 5 for x . Then, do the same thing to both sides of the equation until you have isolated k .

$$\frac{(7-2)k+x}{3} = 3x$$

$$\frac{5k+5}{3} = 15$$

$$5k+5 = 45$$

$$5k = 40$$

$$k = 8$$

12. **30 or 54 or 102**

Category: Polygons

Difficulty: Medium

Strategic Advice: Some geometry problems require setting up and solving an equation.

Getting to the Answer: Let l and w be length and width of the garden. The area of the garden is $lw = 50$. You need to find the perimeter, or $2(l + w)$. You know that l and w are integers, so they must be factors of 50. Any pair of factors will let you find one possible perimeter. Here are the three pairs of factors you could have used:

$$l = 1, w = 50 \text{ or } l = 50, w = 1: 2(l + w) = 2(51) = 102$$

$$l = 2, w = 25 \text{ or } l = 25, w = 2: 2(l + w) = 2(27) = 54$$

$$l = 5, w = 10 \text{ or } l = 10, w = 5: 2(l + w) = 2(15) = 30$$

13. **2.33 or $\frac{7}{3}$**

Category: Logic

Difficulty: Medium

Strategic Advice: A prime number has only itself and 1 as factors. The only even prime number is 2.

Getting to the Answer: The number 4 is not a prime number, so follow the right branch of the flowchart and add 3 to the number to obtain 7. Dividing this value by 3 gives you

$$\frac{7}{3} \approx 2.33.$$

14. **33** **Category:** Divisibility

Difficulty: High

Strategic Advice: If it takes too long to list all of the numbers, the test maker must have a shortcut in mind.

Getting to the Answer: The lowest common multiple of 3 and 5 is $3 \times 5 = 15$. You need to find the number of multiples of 15 that are less than 500. The fastest way to do this is to divide 500 by 15.

$$\frac{500}{15} = 33.\overline{33}$$

Drop everything after the decimal to find that there are 33 positive multiples of 15 that are less than 500.

15. **$\frac{98}{3}$ or 32.6 or 32.7**

Category: Triangles

Difficulty: High

Strategic Advice: In similar triangles, the ratios of the lengths of corresponding sides are equal.

Getting to the Answer: Triangles $\triangle PQR$ and $\triangle STU$ are similar, so the measures of their corresponding angles are equal. Since the figure is drawn to scale, you can tell

that $\angle STU = \angle PQR$ and $\angle SUT = \angle PRQ$. You can tell that \overline{SU} corresponds to \overline{PR} and \overline{ST} corresponds to \overline{PQ} . The ratios of the lengths of these sides are equal.

$$\frac{SU}{PR} = \frac{ST}{PQ}$$

$$\frac{18}{42} = \frac{14}{PQ}$$

$$18PQ = 14(42)$$

$$18PQ = 588$$

$$PQ = \frac{588}{18} = \frac{98}{3} = 32.\overline{6} \approx 32.7$$

16. 1225 **Category:** Exponents

Difficulty: High

Strategic Advice: When a question expresses an equation in English, simply translate methodically from English into math, and then solve the resulting equation.

Getting to the Answer: Translating the problem into math, you get:

$$\sqrt{x} = \frac{x}{35}$$

Because $x > 0$, you can square both sides:

$$x = \frac{x^2}{1,225}$$

$$1,225x = x^2$$

Since you know x is not equal to zero, you can divide both sides by x :

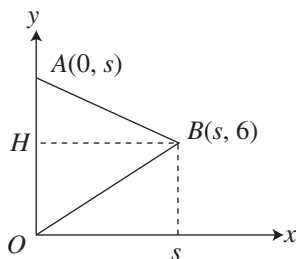
$$1,225 = x$$

17. 6 **Category:** Coordinate Planes

Difficulty: High

Strategic Advice: Use your knowledge of the coordinate plane to find information about the triangle.

Getting to the Answer: The area of a triangle is $\frac{1}{2}(\text{base})(\text{height})$. Start by finding the base and height of $\triangle OAB$.



Think of \overline{OA} as the base of the triangle. Draw line segment \overline{BH} perpendicular to \overline{OA} .

BH is the height of $\triangle OAB$ and the area of $\triangle OAB$ is $\frac{1}{2}OA \times BH$. OA is the vertical distance between A and the origin, or the y -coordinate of A , s . Similarly, BH is the x -coordinate of B , which is also s .

$$\frac{1}{2}OA \times BH = \frac{1}{2}s \times s$$

$$18 = \frac{1}{2}s^2$$

$$36 = s^2$$

$$6 = s$$

18. **801 Category:** Inequalities

Difficulty: High

Strategic Advice: When you have two unknowns, try to get one in terms of the other to simplify the situation.

Getting to the Answer: Solve the equation for y in terms of x .

$$\frac{y}{x} = 0.375$$

$$y = 0.375x$$

Substitute this value into the inequality and simplify.

$$x - y > 500$$

$$x - 0.375x > 500$$

$$0.625x > 500$$

$$x > 800$$

The least possible integer value of x is 801.

Section 4 (SAT Critical Reading)

1. **C** **Category:** Cause-and-Effect

Difficulty: Low

Strategic Advice: Keywords and sentence structure point out cause-and-effect in the sentence. Ask yourself how the blanks play out this relationship.

Getting to the Answer: Roberta did not go through the normal method of *creating* her company, so the I.R.S. might consider her tax status a *debatable* matter.

(A) “Determined” does not make sense for the first blank, and “confirmed” is the opposite of your prediction.

(B) “Verified” might work for the first blank, but “contradictory” doesn’t adequately describe a *debatable* matter.

(C) This is correct; “established” works in context, and “disputable” nicely matches your prediction.

(D) These words both have very negative meanings that do not make sense in the sentence.

(E) While “quantified” might seem to go along with your prediction, a “specialized matter” doesn’t necessarily relate to Roberta’s avoiding “the usual legal pathways.”

contradictory: opposing

disputable: questionable; debatable

undermined: damaged; destabilized

2. **E** **Category:** Definition

Difficulty: Low

Strategic Advice: Keywords point out a definition structure here, in which the second part of the sentence defines the blank.

Getting to the Answer: The student is attempting to *stop* himself from falling behind in his homework, so the steps outlined are *preventative*.

(A) Although it has a sense of looking forward, it would not make sense to call these measures “presumptive.”

(B) The measures are not “predictive”; they are meant to stop the event from happening, not to predict whether or not it will.

(C) The steps might be “preliminary,” but you need a word that also captures the sense of foresight, of being proactive.

(D) Although taking measures ahead of time could be “premeditated,” this doesn’t show that they are meant to perform a specific function.

(E) Correct; “preventative” has exactly the meaning you’re looking for.

presumptive: founded on probability or presumption

predictive: of or relating to prediction or foresight

premeditated: characterized by some degree of planning

3. **B** **Category:** Contrast

Difficulty: Medium

Strategic Advice: Keywords and sentence structure set up a contrast between the first part of the sentence and the blank. Don’t be intimidated by tough vocab in the sentence itself; you can often make a prediction without being able to define every single word.

Getting to the Answer: Other students could not *explain* the difference, but Heather was able to *describe* it.

(A) “Derogate” is very negative and does not make sense in the sentence.

(B) “Articulate” is correct; Heather found the words to explain the terms in a way that the others could understand.

(C) This is very negative, and it does not make sense to say that she “invalidated” the difference.

(D) “Iterate” does not convey a sense of expressing a difference.

(E) “Epitomize” does not reflect the required sense of explaining the difference between the terms.

derogate: to take away; to detract from

articulate: to express in coherent verbal form

iterate: to repeat

epitomize: to make an ideal example of

4. **C** **Category:** Cause-and-Effect

Difficulty: High

Strategic Advice: Keywords and sentence structure indicate cause-and-effect; you need to avoid negative words for the blank.

Getting to the Answer: The nursery has new, comfortable decorations, indicating that it has been thoughtfully *furnished* to accommodate the new babies and their mothers.

(A) “Conflated” does not make sense in the sentence.

(B) “Endowed” implies a gift of some sort, which is not supported by the sentence.

(C) “Outfitted” is perfect; it matches your prediction nicely.

(D) “Designated” does not fit the context of the sentence.

(E) Nothing in the sentence supports the idea that the new furnishings were “bequeathed,” which implies handing down from one to another.

conflated: brought together; melded; fused

endowed: provided with, as an inherent talent or a gift of some sort

bequeathed: passed on to another

5. **D** **Category:** Cause-and-Effect

Difficulty: High

Strategic Advice: Keywords can often provide a strong sense of charge for the missing word.

Getting to the Answer: Your prediction should account for the positive charges of “chivalrous” and “deserving.” Napoleon *founded* the Legion, and citizens today receive it by having it *bestowed upon* them by the President.

(A) Don’t be misled by fancy vocabulary; it would not make sense to say the honor is “conscripted to” citizens.

(B) “Consigned” does not have the correct connotation for this sentence.

(C) “Redeemed for” applies to turning something in, not earning or obtaining it.

(D) “Conferred upon” correctly describes how an honor is given to a recipient.

(E) “Divested” is the opposite of your prediction; you are looking for a word that describes reward, not removal.

conscripted: drafted; compulsorily enrolled in military service

consigned: entrusted; given over to the care of another

conferred: bestowed; invested with

divested: deprived of rights or property; sold off

Crimean War

6. **E** **Category:** Inference

Difficulty: Medium

Strategic Advice: When making a prediction on Inference questions, don’t make

huge leaps in logic or stray far from what the author says in the passage.

Getting to the Answer: The author of the passage says that the Tsar emancipated the serfs in hopes of making economic and social changes that would result in greater military strength. Therefore the defeat of the Crimean War must have made it clear that Russia’s “disappointing failure” (line 1) was tied to weaknesses in economy and social structure. The correct answer choice will reflect this reasoning.

- (A) Out of Scope; there is no information in the passage about Russian strategy during the war.
- (B) Misused Detail; the author of the passage says that the serfs were emancipated in 1861 and that the Crimean War ended some time before this.
- (C) Distortion; the passage makes no connection between Russia’s “lagging behind” and the cause of the war.
- (D) Out of Scope; there is no mention in the passage of the serfs’ role in the outcome of the war.
- (E) This is correct; the reasoning in this choice matches your prediction.

7. **C** **Category:** Inference

Difficulty: Low

Strategic Advice: For Inference questions, look for keywords within the passage that help draw conclusions about the author’s opinions and reasoning.

Getting to the Answer: According to the passage, emancipation of the serfs was intended to result in large-scale economic and social changes. The last sentence says that the effectiveness of the “grand gesture” was hindered, implying that it did not completely fulfill its intended purpose. In addition, the use of quotation marks conveys sarcasm, implying that the author of the passage does not find the emancipation to be very “grand” at all.

- (A) Opposite; the last sentence of the passage implies that emancipation of the serfs did not bring about substantial economic or social changes in Russia.
- (B) Misused Detail; though the author of the passage mentions the privileged classes in the last sentence, no information is given about any role they played in emancipation.
- (C) Correct; this closely matches your prediction.
- (D) Out of Scope; the timing of emancipation is not mentioned as a reason for its shortcomings.
- (E) Extreme; the author merely states that the effectiveness of emancipation was hindered, not necessarily that it was “an utter failure.”

Bermuda Triangle

8. **C** **Category:** Function

Difficulty: Medium

Strategic Advice: Remember that quotation marks can be used for dramatic and rhetorical effect. Keep in mind the author’s overall purpose and perspective.

Getting to the Answer: The author is referring to the actions of an “unknown force,” so you know “kidnap” isn’t to be taken literally. Quotation marks emphasize this.

- (A) Out of Scope; the author does not take a side on the issue.
- (B) Misused Detail; the passage does describe the disappearances as “mysterious,” but the quotation marks don’t relate directly to this description.
- (C) This is correct; the quotation marks indicate a non-literal meaning for the word that describes the mystery theory.

(D) Out of Scope/Distortion; the author doesn't intend to compare the theories, and this particular use of quotation marks wouldn't relate this explanation to any of the others.

(E) Distortion; the author never credits one explanation as more valid than any other, and never suggests that the passage directly references any outside sources.

9. **E** **Category:** Inference

Difficulty: Low

Strategic Advice: Questions that ask you to compare details will often phrase answer choices in more general language than does the passage itself. Elimination can be a useful strategy if prediction proves difficult.

Getting to the Answer: Compare the three theories. The first refers to a magnetic field that causes navigation equipment to malfunction. The second attributes the losses to violent air currents. The third offers only that the disappearances are a mystery; predict that the significant difference is the third theory's lack of a scientific or logical underpinning.

(A) Distortion; this part of the passage also mentions "vessels" and "ships."

(B) Out of Scope; the author never mentions other parts of the world.

(C) Out of Scope; the author never states that either theory is more widely accepted.

(D) Out of Scope; the passage does not discuss prevention.

(E) Correct; this matches your prediction and demonstrates the non-scientific nature of the theory.

Spelling

10. **A** **Category:** Vocab-In-Context

Difficulty: Low

Strategic Advice: Reading the surrounding text in addition to the cited line will give you a more thorough understanding of what a word means in context.

Getting to the Answer: The author describes herself as "doomed" to improve her spelling, and later calls it "unfair" for a spelling error to overshadow the content of her report. This tells us that she wishes content to be of greater importance than spelling.

(A) Matches your prediction; the author felt that "content" was more important than "accurate spelling."

(B) Out of Scope; while this is a common meaning for "consideration," "thoughtfulness" doesn't work in this context.

(C) Out of Scope; "deliberation" describes the process of evaluation, but this sentence does not portray the evaluation process—only the author's desired outcome.

(D) Misused Detail; "consideration" doesn't relate to the particular subject, but rather to the significance of certain aspects of her work.

(E) Distortion; while the author is discussing how she believes her teacher should evaluate her report, "consideration" does not refer to the evaluation process.

11. **B** **Category:** Inference

Difficulty: High

Strategic Advice: Check the citation, and remember Kaplan's second Golden Rule; here you'll have to juggle Butler's perspective, that of those he criticizes, and that of the author.

Getting to the Answer: To “mistake” one thing for another means that they appear to be the same. By not including himself in “most people” who “mistake correct spelling for words or schooling for education,” Butler indicates that he does not see these items as equivalent, holding words and education higher than spelling and schooling, respectively.

(A) Misused Detail; this is the author’s point of view, as expressed in the sentence preceding the citation, and is too narrow to encapsulate Butler’s idea.

(B) Matches your prediction; Butler implies that words are much more than their correct spelling.

(C) Distortion; Butler’s statement emphasizes the importance of the meaning of words, not the proper spelling of meaningless words.

(D) Out of Scope; the passage provides no information on the behavior of a good writer.

(E) Distortion; Butler believes an education is broader than what is taught in school, and does not specifically describe proper spelling as being a part of education or schooling.

12. **E** **Category:** Inference

Difficulty: High

Strategic Advice: When a powerful opinion and complicated sentences appear in a question, don’t let them catch you off guard—read the cited sentences, check surrounding context for clues, and ask yourself how they relate to the author’s overall argument and to the purpose of the individual paragraph.

Getting to the Answer: The beginning of the paragraph states that Shaw’s “phonetic alphabet” was one “attempt” to “simplify spellings,” which indicates his dissatisfaction with traditional spelling. This quote simply reinforces this idea, stating that it is “outside of the range of common sanity” to spell a word “with six letters instead of two.”

(A) Opposite; Shaw believed that traditional spellings, when compared to simplified spellings, were impractical, even “disgusting.”

(B) Misused Detail; Shaw did invent an alphabet that facilitates simplified spelling, but the examples appearing in his quote do not show that such an alphabet is necessary.

(C) Distortion; Shaw’s comment that those who endorse traditional spellings are “outside the range of common sanity” is meant as an exaggeration, not a literal statement of fact.

(D) Distortion; it is Shaw himself and not the simplified spellings that do the “mocking” in this case.

(E) Matches your prediction; Shaw considers it a “monstrosity” to write “phlegm” instead of “flem,” and believes that it is ridiculous to spell a word “with six letters instead of two.”

13. **D** **Category:** Inference

Difficulty: High

Strategic Advice: Sometimes the correct answer choice may not be phrased as you expect, but understanding the context and making a solid prediction will help you recognize the match when you see it, even if it requires some examination or interpretation.

Getting to the Answer: The fact that “spelling reform has made no serious headway” tells us that the reformers’ objectives were much grander than the few “small victories” they experienced. Look for an answer that focuses on the “small” aspect of the reformers’ accomplishments.

(A) Opposite; the term “small victories” suggests that the American public remains

unconvinced of the value of spelling reform.

(B) Distortion; though these “victories” are signs of change, the citation emphasizes the failure of the reform movement, not the potential for progress.

(C) Misused Detail; the fact that the word “catalog” appeared in the dictionary is evidence, not the cause, of some small success.

(D) Matches your prediction; these victories were “small” and did not represent what reformers hoped to accomplish.

(E) Misused Detail; the passage does not say that reformers campaigned persistently, but that the “perceived link between spelling and character persists.”

14. E **Category:** Detail

Difficulty: Medium

Strategic Advice: Sometimes the contextual clues you need can be found far away from the cited word itself. Stick to your notes on the author’s overall purpose as you make your prediction.

Getting to the Answer: The “perceived link between spelling and character” is described at the end of the second paragraph as the belief that good spelling reflects “intelligence, work ethic, and class.” Look for an answer choice that accounts for this.

(A) Out of Scope; the passage does not discuss social advancement, only social “class.”

(B) Distortion; no effort is made to “prove” spelling ability’s relation to other traits.

(C) Distortion; good spelling can create the “illusion” of class, but it is not described as a definitive characteristic of high-class people.

(D) Distortion; the “link between spelling and character” makes it likely that one will be judged on spelling ability, but the link itself describes a particular relationship and not this likelihood.

(E) Matches your prediction; many believe that spelling reflects on an individual’s character.

Extending the Human Lifespan

15. A **Category:** Global

Difficulty: Low

Strategic Advice: Questions that ask for a point of agreement between two passages are usually asking for a broad point, so looking back at your notes should be research enough as you make a prediction.

Getting to the Answer: The two authors disagree on most points; however, they both agree that extending the human lifespan could bring about several difficult situations.

(A) This is correct; both authors discuss ethical questions surrounding the extension of human life.

(B) Out of Scope; neither author calls for research to be discontinued; both simply discuss its potential.

(C) Extreme; the first author has a problem with the potential cost of the treatments, but does not go so far as to call for their free distribution.

(D) Out of Scope; neither author ever claims they will not be produced; on the contrary, they both operate on the assumption that they will be.

(E) Out of Scope; neither author discusses government regulation of potential treatments.

16. **E** **Category:** Reasoning
Difficulty: Medium
Strategic Advice: Whenever a question refers to certain lines from the passage, reread those lines before making a prediction. You may need to extend your research by a line or two on either side of the cited text.
Getting to the Answer: The author claims that the availability of life-extending treatments would make caring for the elderly impossible. As the author discusses later in the passage, the primary reason is an increase in costs associated with people living longer. Choose the answer choice that best matches this.
 (A) Misused Detail; the author claims this later in the passage, but this is not why it would become impossible to care for elderly people.
 (B) Out of Scope; neither author assumes that these treatments will become available soon.
 (C) Out of Scope; neither author claims that governments will make laws about these treatments.
 (D) Out of Scope; the opinion of the general public is never discussed.
 (E) Correct; an increase in healthcare costs is the primary reason that we would be unable to care for elderly people.
17. **B** **Category:** Function
Difficulty: Low
Strategic Advice: Questions that ask about the purpose of a statement are often asking how that statement reinforces a point the author is making, so refer back to your notes to help you predict an answer.
Getting to the Answer: The statement quoted in the question reinforces the main point of the second paragraph: life-extending treatments will increase the gap between the wealthy and the poor. Look for the answer choice that best represents this.
 (A) Distortion; the author thinks that the difference in average lifespan would be a negative consequence of its increase, certainly not a necessity.
 (B) Matches your prediction almost word-for-word.
 (C) Out of Scope; nowhere does the author mention giving money to charity.
 (D) Distortion; the author thinks that the treatments will only be available to the wealthy.
 (E) Out of Scope; the author never discusses who should pay the costs of development.
18. **A** **Category:** Function
Difficulty: Low
Strategic Advice: Questions that ask about the purpose of a statement are often asking how that statement relates to a larger point the author is making, so refer back to your notes to help you make a prediction.
Getting to the Answer: The two arguments mentioned both argue against the points made by Author 1. Which choice best reflects this?
 (A) This is correct; both statements are counterarguments that the author then calls into question.
 (B) Distortion; while this may be the meaning of the two sentences, it is not their purpose; the author does not include them to argue that extending the human lifespan will be harmless.
 (C) Misused Detail; the author does in fact think that not everyone will be able to afford treatments, but this does not relate to the purpose of the two statements.

(D) Extreme; the author mentions that some, not all, scientists think that treatments to increase lifespan are beneficial, and this still does not explain why the author included the statements.

(E) Out of Scope; the author never indicates a personal desire to purchase treatments, and in general thinks that they will not be beneficial.

19. **C** **Category:** Vocab-In-Context

Difficulty: Low

Strategic Advice: Making a prediction for the meaning of the quoted word will help you quickly discard wrong answer choices and avoid selecting a common definition that wouldn't work in context.

Getting to the Answer: The author says that life-extending treatments have become a "distinct possibility," meaning they have become much more immediate or probable. Look for the answer choice that best matches this prediction.

(A) Distortion; "separate" is a primary meaning of "distinct" that is not appropriate here.

(B) Distortion; "different" is another primary meaning of "distinct" that is not appropriate here.

(C) This is correct; "likely" is a close match for immediate or probable; substituting this back into the passage will confirm this.

(D) Opposite; the treatments have become more, not less, probable.

(E) Out of Scope; the author does not seem pleased about the possibility of these treatments.

20. **E** **Category:** Function

Difficulty: Medium

Strategic Advice: Whenever a question refers to certain lines from the passage, reread those lines before making a prediction. Remember that you may need to research around the cited text to place it properly into context.

Getting to the Answer: The author claims that we have already been extending the human lifespan, and uses the curing of once-deadly diseases as an example. The cited sentence, therefore, makes extending the human lifespan seem similar to something we already approve of. Look for the answer choice that correctly relates these two concepts.

(A) Distortion; the author does not claim that we must finish curing diseases before we can research extending our lifespan.

(B) Opposite; the author does believe that we should continue to develop vaccines.

(C) Out of Scope; the author never claims that life-extending treatments will take the place of vaccines.

(D) Out of Scope; the author never discusses increased susceptibility to diseases.

(E) This is correct; the author compares life-extending treatments to vaccines to make the former seem more palatable.

21. **A** **Category:** Vocab-In-Context

Difficulty: Low

Strategic Advice: Remember, Vocab-In-Context questions are often looking for a secondary meaning of a word, so make sure that your prediction fits the usage in the passage.

Getting to the Answer: The author claims that the therapies may be only available to the wealthy, who make up a very tiny portion of the population. Which choice is closest to "tiny?"

- (A) This is correct; a “minute portion” would be a very small one.
- (B) Distortion; “instant” is another meaning of “minute” that is not appropriate here.
- (C) Opposite; the treatments will be available to few, not many, people.
- (D) Out of Scope; the author never claims one portion of the population is smarter than another.
- (E) Out of Scope; “public” makes no sense in context.

22. **D** **Category:** Inference

Difficulty: Low

Strategic Advice: Clues in a question stem, such as the word “suggests,” tell you that you’ll need to make an inference. Remember not to stray too far from what’s stated in the passage.

Getting to the Answer: By saying “but even if it is ethical,” the author puts aside the question of the individual cost of life-extending treatments to discuss a more pressing one: the cost to society. Which answer choice best reflects this relationship?

- (A) Out of Scope; the author does not think that the development of life-extending treatments is impossible.
- (B) Distortion; the author does believe that the costs will be problematic, but thinks that this shouldn’t interfere with their development.
- (C) Misused Detail; the author does believe this, but this is not what is being discussed in the cited text.
- (D) Correct; the author moves on to discuss societal costs because it is a bigger problem.
- (E) Out of Scope; the author never gives an opinion as to whether there are enough scientists involved in the research.

23. **C** **Category:** Detail

Difficulty: Medium

Strategic Advice: Using your notes can often help you quickly sort through information and make a more general Detail question like this one much easier.

Getting to the Answer: Both authors agree on very little, but they do both mention that life-extending therapies would likely be very expensive.

- (A) Out of Scope; neither author expresses an opinion on government regulation.
- (B) Extreme; the first author might agree with this statement, but the second one certainly would not.
- (C) Correct; both authors agree that therapies would initially cost a lot of money.
- (D) Extreme; neither author actually expresses an opinion on the effect on quality of life; length of life is the main topic of discussion.
- (E) Out of Scope; neither author thinks the treatments should be given out for free.

Section 5 (ACT English)

1. **C** **Category:** Word Choice
Difficulty: Medium
Strategic Advice: Some constructions might be grammatically correct but inappropriate in context.
Getting to the Answer: Although “From the...Exposition” (A), “For the... Exposition” (B), and “After...the Exposition (D),” are all correct, in this context, the appropriate preposition is “At,” C.

2. **C** **Category:** Verb Tenses
Difficulty: Medium
Strategic Advice: Verb tenses must make logical sense and be used consistently; use context clues to help you.
Getting to the Answer: As written, this “sentence” is actually a fragment. (The *-ing* verb form can never be the predicate verb in a sentence.) We also know we need a past tense verb, since the Centennial Exposition took place in 1876. “Were introduced,” in C, is correct here.
B does not address the fragment error.
D changes the meaning of the original sentence.

3. **A** **Category:** Sentence Sense
Difficulty: Medium
Strategic Advice: About 25% of English Test questions will require NO CHANGE.
Getting to the Answer: This sentence is correct as written.
B and **D** create run-on sentences.
C eliminates a necessary comma.

4. **B** **Category:** Punctuation
Difficulty: High
Strategic Advice: No comma should be placed between a subject and its verb.
Getting to the Answer: Here, “the Civilian Conservation Corps” is the subject of the verb “planted,” so the comma after “Corps” is incorrect. Both **B** and **D** remove the comma, but **D** uses the semicolon incorrectly. (Semicolons can only be used to combine independent clauses or to separate items in a series when those items already contain commas.)
C does not address the error and also adds an incorrect semicolon.

5. **A** **Category:** Connections
Difficulty: Medium
Strategic Advice: Transition words must create sentences that are correct both grammatically and logically.
Getting to the Answer: Context tells us that a contrast transition word is needed here; only the original sentence provides one.
B incorrectly indicates that the difficulty in cultivating kudzu is the result of the farmers’ being paid to do so.
C indicates a continuation of a previous idea, which is also incorrect here.
D could indicate either a conclusion or continuation in time; neither makes sense in this context.

6. **B** **Category:** Word Choice
Difficulty: High
Strategic Advice: Check underlined verbs to make sure they agree in number with their subject nouns, which may not be the nouns closest to them in the sentence.
Getting to the Answer: Even though “United States” is closer to the verb here, its subject is actually the plural “conditions.” (“United States” is the object of the preposition “in.”) Only **B** provides a plural verb.
C does not address the error; it also changes the meaning of the sentence.
D leaves the sentence’s meaning incomplete.
7. **C** **Category:** Word Choice
Difficulty: Low
Strategic Advice: Use context clues to determine the answers to Word Choice questions.
Getting to the Answer: “Many” denotes a plural quantity; this sentence discusses annual growth of a single foot, so “much,” **C**, is correct here.
B and **D** are idiomatically incorrect.
8. **C** **Category:** Wordiness
Difficulty: Medium
Strategic Advice: Check underlined selections for redundancies; these will be incorrect on the ACT.
Getting to the Answer: Since we already know that the growth rates are measured every year, “annually” is redundant. Both **C** and **D** eliminate the redundancy, but **D** introduces a subject–verb agreement error.
B does not address the error.
9. **B** **Category:** Punctuation
Difficulty: High
Strategic Advice: The ACT only tests a few comma rules; any other usages will be incorrect.
Getting to the Answer: The comma between “even” and “abandoned” is incorrect. (Put a comma between two modifiers only if both are modifying the same word or phrase.) Both **B** and **C** eliminate the incorrect comma, but **C** also eliminates the comma before the conjunction, which is necessary on the ACT.
D does not address the error; additionally, it incorrectly eliminates the comma after the first item in the list.
10. **C** **Category:** Sentence Sense
Difficulty: Medium
Strategic Advice: There are a number of ways to correct a run-on sentence, but only one answer choice will do so without introducing any new errors.
Getting to the Answer: This sentence is a run-on; **C** properly combines the two independent clauses with a semicolon.
B does not address the error.
D misuses the colon, which, on the ACT, will only be correct to introduce a short phrase, quotation, explanation, example, or list.
11. **D** **Category:** Punctuation
Difficulty: High
Strategic Advice: A single comma should not separate a subject from its verb.

Getting to the Answer: The comma after “herbicides” here is incorrect; **D** eliminates the comma without introducing any additional errors.
B eliminates the comma after “herbicides” but adds an unnecessary comma after “work.”
C does not address the error; additionally, it adds two additional unnecessary commas.

12. **D** **Category:** Wordiness
Difficulty: Low
Strategic Advice: When OMIT is offered as an answer choice, check the underlined selection for relevance and redundancy.
Getting to the Answer: The fact that sheep and goats are commonly raised in areas where kudzu grows is irrelevant here. OMIT is the correct choice.
B and **C** simply reword the selection; additionally, **B** uses “whom” to refer to animals, and **C** creates a run-on sentence.
13. **B** **Category:** Organization
Difficulty: Medium
Strategic Advice: Plug the answer choices back into the sentence to determine which creates the clearest, most logical sentence.
Getting to the Answer: Since “an acre of kudzu a day” refers to what the sheep can “devour,” placing the phrase after “devour” creates the clearest sentence. The sentences created by **C** and **D** are illogical.
14. **A** **Category:** Writing Strategy
Difficulty: Medium
Strategic Advice: Read question stems carefully. Many answer choices will be consistent with the passage but will not answer the question posed by the stem.
Getting to the Answer: Here, you are looking for the “most effective conclusion” to the paragraph about farmers renting out flocks of sheep to clear fields of kudzu. **A** describes the “double benefit” of doing so, making it the best choice.
B misstates the information in the paragraph; the farmers in question raise sheep, not kudzu.
C is irrelevant in context.
D repeats information that appears elsewhere in the paragraph.
15. **D** **Category:** Connections
Difficulty: High
Strategic Advice: Evaluate Connections words for logic as well as grammatical correctness.
Getting to the Answer: Since this is the first sentence of the paragraph, check back to the paragraph before. The previous paragraph deals with getting rid of kudzu; this one talks about its practical usage. A contrast Connections word is needed here; the best choice is **D**.
B is a conclusion Keyword, which isn’t logical in context.
While **C** does connote contrast, it relates to the contrast between the way something appears and the way it actually is, which is not appropriate here.
16. **D** **Category:** Word Choice
Difficulty: Medium
Strategic Advice: The subject of a verb may not be the noun closest to it in the sentence.

Getting to the Answer: Even though the plural “guests” is closer to it, the subject of the verb “know” here is actually the singular “Anyone.” (“Guests” is the object of the preposition “of.”) Both **C** and **D** correct the verb, but **C** is idiomatically incorrect in context.

B does not address the error and introduces an incorrect idiom as well.

17. **B** **Category:** Verb Tenses

Difficulty: Low

Strategic Advice: Unless context makes it clear that more than one time frame is being discussed, verb tenses within a sentence should remain constant.

Getting to the Answer: There’s no reason for the change in verb tense here; **B** makes the sentence consistent.

C creates a grammatically incorrect sentence.

D does not correct the inconsistent verb tense error.

18. **A** **Category:** Word Choice

Difficulty: Low

Strategic Advice: About 25% of Writing Test questions will require NO CHANGE.

Getting to the Answer: “Revert to” is the correct idiom here.

B, **C**, and **D** are all idiomatically incorrect.

19. **D** **Category:** Wordiness

Difficulty: Low

Strategic Advice: The shortest answer will not always be correct, but make sure any extra words are necessary.

Getting to the Answer: All that is necessary here is the pronoun “I”; in this context, both “Personally” and “myself” are redundant.

B and **C** still contain redundancies.

20. **C** **Category:** Word Choice

Difficulty: Medium

Strategic Advice: Some comparative constructions must be constructed a certain way to be correct; “easier...than” is one such construction.

Getting to the Answer: Only **C** properly completes the idiom.

B and **D** do not complete the idiom properly.

21. **B** **Category:** Sentence Sense

Difficulty: Low

Strategic Advice: Most sentence fragments will have several nouns and at least one verb or verb form; make sure each sentence has a predicate verb and expresses a complete thought.

Getting to the Answer: The second sentence here is a fragment; **B** properly combines the subordinate clause with the previous sentence.

C creates a run-on sentence.

D leaves the meaning of the second clause incomplete.

22. **B** **Category:** Punctuation

Difficulty: Low

Strategic Advice: Use commas between items in a list of three or more items.

Getting to the Answer: Only **B** follows the rule for comma use in lists.

C and **D** each add an unnecessary comma after the conjunction; additionally, **D** omits a needed comma after the second item in the list.

23. **D** **Category:** Verb Tenses
Difficulty: Low
Strategic Advice: Unless context makes it clear that more than one time frame is being discussed, verb tenses within a sentence should remain constant.
Getting to the Answer: “Done” is incorrectly used here; this irregular participle requires a helping verb. Since the rest of the sentence is in the past tense, “did,” (**D**), is correct here.
B and **C** incorrectly use the present tense; additionally, **B** does not agree with the singular subject “crew.”
24. **C** **Category:** Connections
Difficulty: Medium
Strategic Advice: Use context clues to identify the appropriate Connections word.
Getting to the Answer: This sentence refers to the large sums of money paid to reality show participants today; the previous sentence tells us the Louds received no compensation. A contrast Connections word is needed here; **C** provides it.
B is illogical; knowing that the Louds were not compensated for their appearances is not the reason today’s reality show participants are.
D creates a sentence fragment.
25. **A** **Category:** Word Choice
Difficulty: Medium
Strategic Advice: Homophones (words that sound the same but are spelled differently) may appear on the ACT.
Getting to the Answer: “Their” is the proper spelling for the plural possessive pronoun; this sentence requires NO CHANGE.
B is the contraction for “they are.”
C can be used as a pronoun, but it’s not possessive, which is what is needed in this context.
D does not agree with the plural antecedent “participants.”
26. **B** **Category:** Word Choice
Difficulty: Medium
Strategic Advice: Idioms may be properly constructed but incorrect for the context in which they are used.
Getting to the Answer: Although “revelation of” (**A**), “revelation to” (**C**), and “revelation for” (**D**) are all proper idioms, in this context, “revelation that” (**B**), is correct.
27. **C** **Category:** Connections
Difficulty: Low
Strategic Advice: When a conjunction is underlined, determine the relationship between the clauses it connects.
Getting to the Answer: The first clause discusses the “reality” of the Louds’ behavior; the second clause tells us that the writer never believed it. A contrast Connections word is needed; **C** is correct.
A makes the first clause the cause of the second.
B simply combines the clauses without relating them.
D makes the second clause the cause of the first.

28. **A** **Category:** Verb Tenses
Difficulty: Medium
Strategic Advice: Here the underlining includes a verb and a pronoun; you'll need to check the verb for tense and both for agreement.
Getting to the Answer: Both the verb and the pronoun are correct here; the sentence requires NO CHANGE.
B introduces an inconsistent verb tense.
The pronoun in **C** does not agree with its plural antecedent, "the Louds."
D contains both an inconsistent verb tense and a singular pronoun.
29. **C** **Category:** Word Choice
Difficulty: Low
Strategic Advice: Read question stems carefully. This one is asking for the LEAST acceptable replacement, so three of the choices will have similar meanings to the underlined word.
Getting to the Answer: "Dull" (**A**), "mundane" (**B**), and "ordinary" (**D**) all mean about the same as the underlined word, "uninteresting." "Outlandish" (**C**), has an opposite meaning.
30. **B** **Category:** Organization
Difficulty: High
Strategic Advice: Plug the new sentence into the passage at the suggested points to determine its most logical placement.
Getting to the Answer: This sentence makes the most sense at the beginning of paragraph 2, where the passage transitions from a discussion of reality television in general to the topic of the first reality series.
31. **D** **Category:** Wordiness
Difficulty: Low
Strategic Advice: Check underlined selections for words with essentially the same meanings.
Getting to the Answer: "Origin" and "beginning" mean the same thing; **D** eliminates the redundancy.
B and **C** still contain redundant language.
32. **D** **Category:** Sentence Sense
Difficulty: Medium
Strategic Advice: When a long selection is underlined, choose the clearest revision.
Getting to the Answer: Of the choices, **D** is both clearest and most concise.
33. **A** **Category:** Verb Tenses
Difficulty: Medium
Strategic Advice: Watch for unnecessary verb tense changes. A new tense may not be incorrect, but it must be justified.
Getting to the Answer: There is no reason for a shift in verb tenses here; the sentence is correct as written.
B, **C**, and **D** all introduce inconsistent verb tenses.
34. **D** **Category:** Connections
Difficulty: Medium
Strategic Advice: Use context clues to find the answers to Connections questions.

Getting to the Answer: Since this sentence tells us that Ibsen’s “dramatic themes began to change,” we can infer that a contrast Connections word is needed. Only **D** provides it.

A tells us that Ibsen’s historical themes and his changed ones occurred at the same time, which is illogical.

B makes Ibsen’s new themes the result of the old ones, which is also illogical.

C denotes emphasis, which is inappropriate here.

35. **B** **Category:** Sentence Sense

Difficulty: Low

Strategic Advice: Remember to read for logic as well as grammatical correctness.

Getting to the Answer: This sentence is awkward and confusing. **B** clarifies the meaning.

C and **D** change the meaning of the sentence, and, since “odd” and “conventional” have opposite meanings, using them in this way is illogical.

36. **D** **Category:** Verb Tenses

Difficulty: Medium

Strategic Advice: Use context clues to determine proper verb tense usage.

Getting to the Answer: “In the future” is your context clue here; a future tense verb is needed. **D** is correct.

A and **B** are incorrect for an action that will happen in the future.

C indicates that the action discussed didn’t actually happen; we know from context that this is incorrect.

37. **B** **Category:** Punctuation

Difficulty: High

Strategic Advice: On the ACT, a dash will only be correct to indicate hesitation or a break in thought or to set off explanatory elements within a sentence.

Getting to the Answer: Since “a point of view which was quite uncommon for the times” explains Ibsen’s “non-idealized version of marriage,” the dash in **B** is correct.

A incorrectly places a semicolon between an independent and a dependent clause.

C eliminates the punctuation altogether, making the sentence difficult to understand. The second sentence created by **D** is a fragment.

38. **B** **Category:** Punctuation

Difficulty: Medium

Strategic Advice: Learn the rules for plurals and possessives; you’re likely to see a question testing them.

Getting to the Answer: Context tells us that the sentence concerns a search “belonging to” an individual; the possessive “individual’s” in **B** is correct here.

A is the plural, not the possessive, which makes the sentence grammatically incorrect.

C is the correct plural possessive, but the phrase “an authentic identity” tells us that the plural noun is incorrect here.

D uses a spelling that is never correct.

39. **C** **Category:** Sentence Sense

Difficulty: Low

Strategic Advice: The correct answer choice may not correct a run-on sentence the way you expect.

Getting to the Answer: **C** makes the second clause subordinate, correcting the run-on error.

B does not address the error.

D creates a grammatically incorrect sentence.

40. **C** **Category:** Wordiness

Difficulty: Low

Strategic Advice: Beware of answer choices that are *too* concise; the sentence must be both grammatically and logically correct when your choice is read into it.

Getting to the Answer: This sentence has no grammatical error, but it's unnecessarily wordy. **C** makes it more concise without introducing any new errors.

B is still wordier than it needs to be.

D creates a grammatically incorrect sentence.

41. **C** **Category:** Sentence Sense

Difficulty: Medium

Strategic Advice: Some answer choices will correct the original error but introduce additional problems.

Getting to the Answer: As written, this sentence is a run-on. Both **B** and **C** address the run-on, but **B** leaves the meaning of the second clause incomplete.

D does not address the error; additionally, it uses "who" to refer to a play.

42. **C** **Category:** Organization

Difficulty: High

Strategic Advice: The quickest way to solve a paragraph organization question is to first identify a logical topic sentence.

Getting to the Answer: A quick scan of the paragraph identifies sentence 3 as the most logical topic sentence, since the paragraph concerns Ibsen's best-known plays. This eliminates **A** and **B**. Now identify the most logical concluding sentence for the paragraph. (Hint: Since only 1 and 6 are possible, those are the only sentences you'll need to consider.) Putting sentence 6 last, as **D** suggests, tells us that Ibsen rewrote the ending of *A Doll's House* before discussing the problem some theaters had with the play. **C** provides the most logical order to the sentences.

43. **D** **Category:** Wordiness

Difficulty: Low

Strategic Advice: If you don't spot an error in grammar or usage, check for errors in style.

Getting to the Answer: This selection is unnecessarily wordy. **D** is more concise, while retaining all the meaning of the original sentence.

B and **C** are still unnecessarily wordy.

44. **A** **Category:** Word Choice

Difficulty: Medium

Strategic Advice: Not all Idioms errors will be incorrectly constructed; some will just be wrong in context.

Getting to the Answer: Although you can "regret to have" (**B**) to do something or show your "regret by having" (**D**) something, in this context, "regret at having" is correct. This sentence requires NO CHANGE.

C is idiomatically incorrect.

45. **A** **Category:** Writing Strategy

Difficulty: Medium

Strategic Advice: Once you determine whether or not the passage satisfies the conditions in the question stem, you can immediately eliminate two of the four choices.

Getting to the Answer: This essay would not fulfill an assignment to write about the development of modern drama because it only mentions a single playwright; **A** is correct here.

B correctly indicates that the essay would not fulfill the assignment, but the reasoning contradicts the essay, which tells us that Ibsen's plays marked the beginning of modern drama.

C and **D** incorrectly indicate that the essay would fulfill the assignment.

Section 6 (ACT Math)

1. **C** **Category:** Variable Manipulation
Difficulty: Low
Strategic Advice: Don't be scared off before you've read the question! This equation may look complicated, but it's easily solved by plugging in the given values for the variables.
Getting to the Answer:

$$\frac{2+4}{2(3)} + 2(4) - 3 = \frac{6}{6} + 8 - 3 = 6$$
2. **D** **Category:** Patterns, Logic & Data
Difficulty: Low
Strategic Advice: Functions can look difficult, but they are usually just simple substitutions.
Getting to the Answer: To find $f(2)$, substitute 2 for a .

$$f(2) = 2(2^3) + 2^2 - 2 + 1 = 2(8) + 4 - 2 + 1 = 16 + 4 - 2 + 1 = 19$$
3. **C** **Category:** Variable Manipulation
Difficulty: Low
Strategic Advice: An easy way to solve Roman numeral questions is to use Backsolving to evaluate each Roman numeral. Remember to start with the numeral that appears most often in the answer choices.
Getting to the Answer: Set up an equation with s standing for the number of bottles of soda and l standing for the number of bottles of lemonade. Since Simone spent exactly \$6.00, $\$1.00s + \$1.50l = \$6.00$. Then plug in each possible value of l and solve for s , which must be a whole number (since you can't buy half a bottle of soda).
 I. $\$1.00s + \$1.50(0) = \$6.00$

$$\begin{aligned} \$1.00s &= \$6.00 \\ s &= 6 \end{aligned}$$
 Simone could buy 6 bottles of soda and 0 bottles of lemonade. This works, so eliminate **B**.
 II. $\$1.00s + \$1.50(2) = \$6.00$

$$\begin{aligned} \$1.00s + \$3.00 &= \$6.00 \\ \$1.00s &= \$3.00 \\ s &= 3 \end{aligned}$$
 Simone could buy 3 bottles of soda and 2 bottles of lemonade. This works, so eliminate **A** and **D**.
 III. $\$1.00s + \$1.50(3) = \$6.00$

$$\begin{aligned} \$1.00s + \$4.50 &= \$6.00 \\ \$1.00s &= \$1.50 \\ s &= 1.5 \end{aligned}$$
 If Simone bought 3 bottles of lemonade, she would not be able to buy a whole number of bottles of soda. This does not work, so **C** is correct.
4. **E** **Category:** Proportions and Probability
Difficulty: Low
Strategic Advice: Charts and graphs usually contain more information than you need, so make sure you answer the question that is asked.
Getting to the Answer: Jeans were 30% of the total sales and khakis were 25% of the total sales, so combined they were 55% of the total sales. 55% of \$48,000 is $0.55(\$48,000) = \$26,400$.

5. **C** **Category:** Variable Manipulation
Difficulty: Medium
Strategic Advice: Remember the classic quadratics. They save valuable time on Test Day.
Getting to the Answer: Take out the common factors, then factor the difference of the squares (a classic quadratic equation):
 $a^3b - ab^3 = ab(a^2 - b^2) = ab(a - b)(a + b)$
C is correct.
 You can also Pick Numbers to double-check your answer. Say $a = 1$ and $b = 2$. Then $a^3b - ab^3 = (1)^3(2) - 1(2)^3 = 2 - 8 = -6$.
 Check the answer choices:
A $a(a^2 - b^2)(a + b) = 1(1^2 - 2^2)(1 + 2) = 1(-3)(3) = -9$. Eliminate.
B $b(a^2 - b^2)(a + b) = 2(1^2 - 2^2)(1 + 2) = 2(-3)(3) = -18$. Eliminate.
C $ab(a + b)(a - b) = 1(2)(1 + 2)(1 - 2) = 1(2)(3)(-1) = -6$. Keep it.
D $ab(a^2 + b^2)(b - a) = 1(2)(1^2 + 2^2)(2 - 1) = 1(2)(5)(1) = 10$. Eliminate.
E $a^3b^3(b - a) = (1)^3(2)^3(2 - 1) = (1)(8)(1) = 8$. Eliminate.
 All choices except **C** have been eliminated, so **C** is correct.
6. **C** **Category:** Plane Geometry
Difficulty: Medium
Strategic Advice: Whenever you see multiple shapes in a figure, look for lengths or angles that are part of more than one shape.
Getting to the Answer: The area of square $ABCD$ is the length of a side squared:
 $AB^2 = 64$
 $AB = 8$
 The diagonals of a square divide it into two 45–45–90 triangles. The sides of a 45–45–90 triangle are in the ratio $x : x : x\sqrt{2}$, so AC and BD equal $AB\sqrt{2} = 8\sqrt{2}$.
 The center of square $ABCD$, O , is the midpoint of \overline{AC} , so AO equals $\frac{AC}{2} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$. The area of square $AODE$ is the length of a side squared, or $AO^2 = (4\sqrt{2})^2 = 32$.
 Another way to solve this problem is to notice that all the small triangles in the figure are equal: $\triangle AOB = \triangle BOC = \triangle COD = \triangle AOD = \triangle ADE$. Square $ABCD$ consists of 4 small triangles and square $AODE$ consists of 2 small triangles. Therefore, the area of $AODE$ is half of the area of $ABCD$, or $\frac{64}{2} = 32$. Thus, **C** is correct.
7. **D** **Category:** Proportions and Probability
Difficulty: High
Strategic Advice: If you see an unusual term or symbol, look for the definition in the question stem.
Getting to the Answer: As you can see from the dimensions of the slide given in the problem, the grade of a slide is $\frac{\text{height}}{\text{horizontal length}} \times 100\%$. The slide in the question stem has a grade of $\frac{0.5}{2.5} \% = 20\%$. Calculate the grades of the slides in the answer choices:
A $\frac{0.5}{3.0} \times 100\% \approx 16.6\%$, which is less than 20%. Eliminate.
B $\frac{0.6}{4.0} \times 100\% = 15\%$, which is less than 20%. Eliminate.

C $\frac{0.7}{3.5} \times 100\% = 20\%$, which is not greater than 20%. Eliminate.

D $\frac{0.75}{2.5} \times 100\% = 30\%$, which is greater than 20%. **D** is correct.

E $\frac{0.75}{4.0} \times 100\% = 18.75\%$, which is less than 20%. Eliminate.

8. **E** **Category:** Variable Manipulation

Difficulty: Medium

Strategic Advice: Avoid careless mistakes on simple problems by writing out enough steps. It's much easier to check your work when you can see it.

Getting to the Answer: Since a is in both equations, you can use it to combine them. Substitute the definition of a in terms of c into the equation for b and simplify carefully:

$$b = 3a - 1 = 3(2c + 4) - 1 = 6c + 12 - 1 = 6c + 11$$

E is correct.

9. **A** **Category:** Plane Geometry

Difficulty: Low

Strategic Advice: Two angles are congruent if and only if their degree measures are equal.

Getting to the Answer: You are given that $\angle X + \angle Y = 90^\circ$ and $\angle Y + \angle Z = 90^\circ$. Thus, $\angle X = \angle Z = 90^\circ - \angle Y$. Since the measures of $\angle X$ and $\angle Z$ are equal, $\angle X$ and $\angle Z$ are congruent. **A** is correct.

10. **B** **Category:** Plane Geometry

Difficulty: Medium

Strategic Advice: Don't assume too much. Only the corresponding angles between a transversal and the parallel lines must be equal. Remember, ACT diagrams are not always drawn to scale.

Getting to the Answer: **A**, **C**, and **E** compare angles that are formed by different transversals intersecting parallel lines, so these angles don't have any necessary relationship. Angle a° is formed by two transversals, so you don't have any information about what other angles it might equal. However, angles c° and d° are both formed by the same transversal intersecting parallel lines, so they must be equal. **B** is correct.

11. **A** **Category:** Operations

Difficulty: Medium

Strategic Advice: Exponents are a short way to write a number multiplied by itself several times.

Getting to the Answer: The time it takes for half of the sample to decay is 4 hours. That means that if the mass of the sample is 1 gram at 9 A.M., then it will be half of a gram after 4 hours, or at 1 P.M. Since at 9 A.M. on Tuesday 24 hours, or 6 4-hour periods, will have passed since 9 A.M. on Monday, the mass of the sample at 9 A.M.

on Tuesday will be $\left(\frac{1}{2}\right)^6 (1) = \frac{1}{64}$ grams.

12. **C** **Category:** Coordinate Geometry

Difficulty: Medium

Strategic Advice: If you know the coordinates of the endpoints of a line segment in the coordinate plane, you can calculate the length of the segment. This is easiest

when the line segment is vertical or horizontal.

Getting to the Answer: The area of a trapezoid is $\frac{1}{2}h(a + b)$, where h is the height of the trapezoid and a and b are the bases of the trapezoid. Since the bases of the trapezoid in the figure are parallel to the y -axis, their lengths equal the positive difference of the y -coordinates of their endpoints. If a is the shorter base and b is the longer base of the trapezoid, then $a = 5 - (-4) = 9$ and $b = 5 - (-6) = 11$. Since the height of the trapezoid in the figure is parallel to the x -axis, it equals the positive difference of the x -coordinates of its endpoints: $h = x - 1$. Thus, the area of the trapezoid is $\frac{1}{2}(x - 1)(9 + 11) = 30$ square units.

$$\frac{1}{2}(x - 1)(20) = 30$$

$$10(x - 1) = 30$$

$$x - 1 = 3$$

$$x = 4$$

13. **C Category:** Proportions and Probability

Difficulty: Medium

Strategic Advice: When you create a proportion, make sure that measurements given in the same units are in corresponding parts of the proportion.

Getting to the Answer: Since the architect is making a scale model of the house, the ratio of the actual height to the model height of the house is the same as the ratio of the actual width to the model width of the house. If the actual width of the house is w meters, then:

$$\frac{w \text{ meters}}{10 \text{ centimeters}} = \frac{12 \text{ meters}}{18 \text{ centimeters}}$$

$$w = \frac{12(10)}{18}$$

$$w = \frac{20}{3} = 6\frac{2}{3}$$

14. **B Category:** Plane Geometry

Difficulty: Medium

Strategic Advice: You should only round your answer on the ACT if the question includes the word “approximately.”

Getting to the Answer: The weight of sand is directly proportional to its volume. The volume of a rectangular box is the length times the width times the height. You don’t know the length or width of this box, but you do know that the box holds 20 pounds of sand when it is filled to a height of 1.5 feet. The length and width of the box won’t change, so you can set up a proportion between the amount of sand and the height to which the box is filled. Call the number of pounds of sand the box holds when it is filled to 2.2 feet x .

$$\frac{20 \text{ pounds}}{1.5 \text{ feet}} = \frac{x \text{ pounds}}{2.2 \text{ feet}}$$

$$20(2.2) = 1.5(x)$$

$$44 = 1.5x$$

$$\frac{44}{1.5} = x$$

$$29.33 = x$$

The closest approximation to x is **B**.

15. **B** **Category:** Trigonometry
Difficulty: Medium
Strategic Advice: Trigonometry questions often hinge on the relationships between the sides of a right triangle. Be sure you can identify the hypotenuse.
Getting to the Answer: As you can see in the figure, the straight line connecting the two people is the hypotenuse of the right triangle and the height of the hill is the side opposite the angle x° . By definition, $\text{sine} = \frac{\text{opposite}}{\text{hypotenuse}}$, so $\sin x^\circ = \frac{h}{l}$ and **B** is correct.

16. **D** **Category:** Plane Geometry
Difficulty: Medium
Strategic Advice: Sometimes you will need to work backwards to find the answer.
Getting to the Answer: Write down what you know from the problem. Start with the line segment you know the length of (\overline{DE}), and figure out the lengths of other segments from there.

$$DE = 3$$

$$DE = \frac{1}{2}FG$$

$$2DE = FG$$

$$6 = FG$$

$$FG = \frac{3}{4}HJ$$

$$\frac{4}{3}FG = HJ$$

$$\frac{4}{3}(6) = HJ$$

$$8 = HJ$$

H bisects \overline{GJ} , so $HJ = GH = 8$

$$GH + EF = 15$$

$$8 + EF = 15$$

$$EF = 7$$

$$EJ = EF + FG + GH + HJ = 7 + 6 + 8 + 8 = 29$$

D is the correct answer. **E** is the length of the *entire* line segment. Don't fall into this trap.

17. **D** **Category:** Variable Manipulation
Difficulty: Medium
Strategic Advice: Problems with several variables may look intimidating at first, but usually just boil down to solving for a variable.
Getting to the Answer: Plug in the given values and solve for c .

$$2a^3 + \frac{1}{2}ab^2 - 3c = -4$$

$$2(2)^3 + \frac{1}{2}(2)(4)^2 - 3c = -4$$

$$2(8) + \frac{2(16)}{2} - 3c = -4$$

$$16 + 16 - 3c = -4$$

$$-3c = -36$$

$$c = 12$$

18. **D** **Category:** Coordinate Geometry
Difficulty: High
Strategic Advice: The distance between the points (x_1, x_2) and (y_1, y_2) is $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.
Getting to the Answer: Plug the given points into the distance formula and simplify.
 $\sqrt{(-1 - s)^2 + [s - (-1)]^2} = \sqrt{(-1 - s)^2 + (s + 1)^2}$
 Since anything squared becomes positive, $(-1 - s)^2$ is the same as $(s + 1)^2$.
 $\sqrt{(-1 - s)^2 + (s + 1)^2} = \sqrt{(s + 1)^2 + (s + 1)^2} = \sqrt{2(s + 1)^2}$
 You could also Pick Numbers to make the problem more concrete. Say $s = 3$. Then the two points are $(3, -1)$ and $(-1, 3)$. Use the distance formula to find the distance between them.
 $\sqrt{(-1 - 3)^2 + [3 - (-1)]^2} = \sqrt{(-4)^2 + (4)^2} = \sqrt{16 + 16} = \sqrt{32} = 4\sqrt{2}$
 Now plug $s = 3$ into the answer choices and look for one which gives a distance of $4\sqrt{2}$.
A 0
B $\sqrt{2(3 + 1)} = \sqrt{8} = 2\sqrt{2}$
C $\sqrt{2(3 - 1)} = \sqrt{4} = 2$
D $\sqrt{2(3 + 1)^2} = \sqrt{2(4)^2} = \sqrt{32} = 4\sqrt{2}$
E $\sqrt{2(3 - 1)^2} = \sqrt{2(2)^2} = \sqrt{8} = 2\sqrt{2}$
 The only expression that equals $4\sqrt{2}$ when $s = 3$ is **D**.
19. **B** **Category:** Proportions and Probability
Difficulty: Medium
Strategic Advice: The probability of a series of independent events is the product of the probabilities of all the events.
Getting to the Answer: Any time you roll a die, the probability of getting a 1 is $\frac{1}{6}$.
 Each roll is an independent event, so the probability of getting a 1 3 times if you roll a die 3 times is $\frac{1}{6} \cdot \frac{1}{6} \cdot \frac{1}{6} = \frac{1}{216}$.
20. **A** **Category:** Patterns, Logic & Data
Difficulty: Medium
Strategic Advice: A steep slope represents a fast rate of change, while a shallow slope represents a slow rate of change.
Getting to the Answer: Look for a graph with a positive slope over the entire domain. The slope should be steep when t is small and shallow when t is large. The only graph that fits this description is **A**.
21. **A** **Category:** Variable Manipulation
Difficulty: Medium
Strategic Advice: When there are variables in the answer choices, you can Pick Numbers to avoid complicated calculations or difficult translations.
Getting to the Answer: Say Luis is 9 years old, so $L = 9$. Veronica is 3 years younger than Luis, so Veronica's age is $9 - 3 = 6$. Salma is half Veronica's age, so Salma's age is $\frac{6}{2} = 3$. The sum of the children's ages is $9 + 6 + 3 = 18$. Plug $L = 9$ into the answer choices and look for one which equals 18.
A $\frac{5}{2}(9) - \frac{9}{2} = \frac{45}{2} - \frac{9}{2} = \frac{36}{2} = 18$

$$\text{B } \frac{5}{2}(9) - \frac{3}{2} = \frac{45}{2} - \frac{3}{2} = \frac{42}{2} = 21$$

$$\text{C } 2(9) - 3 = 18 - 3 = 15$$

$$\text{D } \frac{1}{2}(9) - \frac{9}{2} = \frac{9}{2} - \frac{9}{2} = 0$$

$$\text{E } \frac{1}{2}(9) - \frac{3}{2} = \frac{9}{2} - \frac{3}{2} = \frac{6}{2} = 3$$

The only choice that gives a sum of 18 when $L = 9$ is **A**.

To solve the problem algebraically, get each child's age in terms of L . Luis is L years old, Veronica is 3 years younger than Luis, or $L - 3$ years old, and Salma is half

Veronica's age, or $\frac{L-3}{2}$ years old. Add the ages and simplify:

$$L + L - 3 + \frac{L-3}{2} = \frac{2L}{2} + \frac{2L}{2} - \frac{6}{2} + \frac{L}{2} - \frac{3}{2} = \frac{5L}{2} - \frac{9}{2}$$

22. **E** **Category:** Coordinate Geometry

Difficulty: High

Strategic Advice: When you're given a range, test the extreme values.

Getting to the Answer: Plug the boundary points into the expression $x^2 + y^2$ to find the range of values it can take on.

$$(-4, 1): (-4)^2 + (1)^2 = 16 + 1 = 17$$

$$(3, 1): (3)^2 + (1)^2 = 9 + 1 = 10$$

$$(-5, -3): (-5)^2 + (-3)^2 = 25 + 9 = 34$$

$$(4, -3): (4)^2 + (-3)^2 = 16 + 9 = 25$$

Notice that $x^2 + y^2$ is the square of the distance from the point (x, y) to the origin.

Points in the interior of the region can have values of $x^2 + y^2$ less than, but not greater than, the values of points on the boundary. The largest value of the expression at a boundary point is 34, so no point within the shaded region can have a value of $x^2 + y^2$ that is greater than 34. **E** is not a possible value, so it is correct.

23. **A** **Category:** Variable Manipulation

Difficulty: High

Strategic Advice: Substituting a variable for an expression can simplify complicated equations.

Getting to the Answer: Say $y = x + 2$. Then the original equation is $py^3 + qy^2 = 1$ and its solution is $x = y - 2 = a$. Since $y - 2 = a$, $y = a + 2$. So, the solution of the equation $px^3 + qx^2 = 1$ must be $x = a + 2$. **A** is correct.

24. **E** **Category:** Number Properties

Difficulty: Medium

Strategic Advice: Although Picking Numbers might be tempting, it can be misleading on questions that involve ranges of values.

Getting to the Answer: Compare the lower boundaries of the values of the expressions in the answer choices.

A. The value of m must be greater than 0.

B. The value of $-m^2$ must be greater than $-(1^2) = -1$.

C. The value of $n^2 - m^2$ must be greater than $0^2 - 1^2 = -1$.

D. The value of $n - m$ must be greater than $0 - 1 = -1$.

E. The value of $m - n$ must be greater than $0 - 2 = -2$.

Since the expression in **E** has the lowest lower boundary, it can have the least value.

25. **E** **Category:** Coordinate Geometry

Difficulty: High

Strategic Advice: Coordinate Geometry problems can usually be solved graphically.

Getting to the Answer: The graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$ is an ellipse with center $(-3, 1)$, a horizontal axis of length 4, and a vertical axis of length 6.

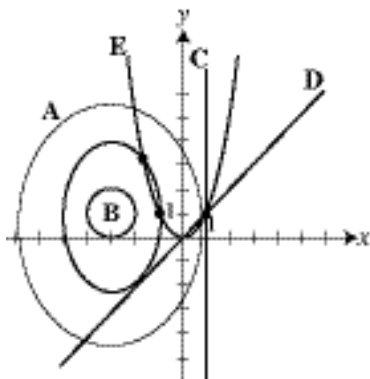
A is the equation of an ellipse with the same center, a horizontal axis of length 8, and a vertical axis of length 12. The graph of **A** is completely outside the graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$.

B is the equation of a circle with center $(-3, 1)$ and radius 1. The graph of **B** is completely inside the graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$.

C is the equation of a vertical line at $x = 1$. The graph of **C** is outside the graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$.

D is the equation of a straight line that passes below the graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$.

E is the equation of a parabola which intersects the graph of $\frac{(x+3)^2}{4} + \frac{(y-1)^2}{9} = 1$ twice. **E** is correct.



Section 7 (ACT Reading)

Democracies

1. **C** **Category:** Vocab-in-Context
Difficulty: Low
Strategic Advice: Questions that look for the meaning of a word in the context of a passage are often looking for a less common, secondary meaning. Take care to avoid trap answer choices that include typical definitions.
Getting to the Answer: In the first paragraph, the author uses the word to describe elections, along with the other two modifiers “open” and “regularly-occurring.” In this sense, the author intends *transparent* to mean something related to “open,” and only **C** fits this prediction.
A Opposite; the author does not believe that elections in democracies should be at all “vague.”
B Out of Scope; this is a more common meaning of transparent, but is inappropriate here; elections should not be “lacking color.”
D Out of Scope; it makes no sense to say that elections should be “thick.”

2. **D** **Category:** Generalization
Difficulty: Low
Strategic Advice: Using your notes can often help you quickly sort through information and make a general question like this one much easier.
Getting to the Answer: This question refers to the main argument in the passage; the author argues throughout that one of the requirements for a democracy is for its citizens to be active participants in the process and informed on the issues. This matches **D** exactly.
Both **A** and **B** are Opposite; the author argues that an informed and interested public is required of a true democracy.
C Out of Scope; the author never places a specific threshold on interest.

3. **A** **Category:** Detail
Difficulty: Low
Strategic Advice: Whenever a question contains a citation, always return to the relevant part of the passage to determine its context.
Getting to the Answer: In the second paragraph, the author mentions that research done by political scientists has shown that a low percentage of the public participates in elections or cares about politics. Only **A** captures these conclusions.
B Opposite; the research mentioned in the passage says that only about one-half of the public typically votes, even in major elections, which can hardly be called a vast majority.
Both **C** and **D** are also Opposite; both claim that most citizens are interested or informed about politics, which contradicts the research mentioned in the passage.

4. **D** **Category:** Detail
Difficulty: Low
Strategic Advice: Whenever a question uses the phrase “NOT,” eliminating obviously wrong answer choices first will make finding the correct choice easier.

Getting to the Answer: Eliminating incorrect answer choices first can make this question easier to solve. The author mentions the first two answer choices as necessary characteristics of democracy in paragraph 1, and the third answer choice is the conclusion of the main argument of the passage. Therefore, **D** is the only one not mentioned in the passage, and must be the correct answer.

A and **B** are both Opposite; the author mentions both elections and mechanisms for removing politicians in the first paragraph as characteristics of democracy.

C Opposite; the author concludes that an active and interested populace is a necessary part of democracy in the main argument.

5. **D** **Category:** Detail

Difficulty: Medium

Strategic Advice: Whenever a question refers to certain lines from the passage, reread those lines before making a prediction. You may need to extend your research by a line or two on either side of the cited text.

Getting to the Answer: The statement quoted in the passage is one of the conclusions drawn based on the research listed in the second paragraph. The passage indicates that political scientists conducted this research, matching **D**.

A Distortion; while this may reflect the author's opinion, it's a conclusion based on research and therefore has factual support.

B Distortion; the statement is based on current research, not historical study.

C Distortion; the quoted statement does in fact represent a conclusion, but it is drawn from the research of political scientists, not of the author.

6. **C** **Category:** Inference

Difficulty: Medium

Strategic Advice: Inference questions such as this one ask you to take information from the passage and apply it to new situations. Focus on broad themes.

Getting to the Answer: This question is testing your knowledge of the main conclusions of the passage, specifically the characteristics of a true democracy. **C** is the only scenario compatible with these conclusions.

A Opposite; having elections at the will of the politicians would contradict the need for open and regularly occurring elections.

B Opposite; a corrupt politician staying in office would contradict the passage's requirement for a mechanism to remove corrupt politicians.

D Opposite; an election with only one-tenth participation would contradict the requirement for an active and interested populace.

7. **A** **Category:** Detail

Difficulty: Low

Strategic Advice: Using your notes can often help you quickly sort through information and make a general question like this one much easier.

Getting to the Answer: This question is again testing your knowledge of the passage's main conclusions, but tries to obscure the correct answer choices with other characteristics one commonly associates with democracies. Return to the three main characteristics; the first, fair elections, is represented in **A**.

B Out of Scope; separation of powers is a common characteristic associated with democracies, but is not mentioned in this passage.

C Out of Scope; a democracy may work better with intelligent politicians, but this is not mentioned as a requirement in this passage.

D Out of Scope; the passage never suggests any qualifications for voting.

8. **D** **Category:** Function
Difficulty: Medium
Strategic Advice: Questions that ask about the purpose of including a particular statement are often asking how that example relates to a specific point in the passage, so refer back to your notes to help you predict an answer.
Getting to the Answer: In the third paragraph, the author uses the example of the drill to emphasize that an object needs to be used for a particular purpose to be called a particular name. She then uses this point to conclude that an active and informed populace is necessary to call a society a democracy. This prediction closely matches **D**.
A Opposite; the author uses the abstract situation involving the drill to support the conclusion about democracies.
B Misused Detail; the author does actually believe that fair elections are necessary, but this point has nothing to do with the example of the drill.
C Opposite; the author argues that a society actually requires an active populace to be called a democracy.
9. **C** **Category:** Detail
Difficulty: Medium
Strategic Advice: Consult your notes for the location of specific details.
Getting to the Answer: At the very end of the last paragraph, the author offers a challenge to the citizens of many countries around the world. She suggests that without active participation in a democracy, some of the rights and privileges associated with it may “cease to exist.” This matches **C**.
A Out of Scope/Opposite; the author never mentions the likelihood that countries will become better governed if their populace continues to be uninformed, and actually believes that the situation will worsen.
B Out of Scope; the author never suggests that a new form of government is likely to be found.
D Out of Scope; the author never suggests that politicians will reach out to the public.
10. **B** **Category:** Function
Difficulty: Low
Strategic Advice: Focus on the relevant text, but keep the author’s overall purpose and tone in mind.
Getting to the Answer: In the last few lines of the third paragraph, the author argues that countries with low citizen participation should not really be called democracies. She then refers to these same countries as “democracies” in the first sentence of the fourth paragraph, the quotes suggesting that defining the countries as such may be suspect. This matches **B**.
A Distortion; while the word “democracies” is important in the passage, this is not why the author used quotation marks here.
C and **D** are both Out of Scope; these are both situations in which quotation marks are important, but do not correctly describe the usage in question.

11. **C** **Category:** Detail
Difficulty: Low
Strategic Advice: Be sure to predict an answer choice for Detail questions like this one. That way, you won't get distracted by the wrong answer choices, which are sure to include irrelevant details from the passage.
Getting to the Answer: This is a Detail question, so the answer should be directly stated in the passage. Lines 32–33 state that the weavings were made for Inca nobles, which matches **C**.
A Misused Detail; the Bolivian intermediaries are mentioned because they were involved in the theft of weavings.
B Distortion; the Coromans now keep the weavings, but they were not originally made for them.
D Out of Scope; although the makers or recipients of the weavings might be Andean artisans, the passage never mentions them.
12. **A** **Category:** Detail
Difficulty: Low
Strategic Advice: Detail questions can be tricky, because the wrong answer choices will include details that you will find in the passage. Focus on the relevant text and use elimination on EXCEPT questions.
Getting to the Answer: Work through the second paragraph, eliminating answer choices that correspond to citations to those involved in the effort. **B**, **C**, and **D** are all cited. Only **A** remains, mentioned extensively throughout the passage but never in the second paragraph.
13. **C** **Category:** Vocab-in-Context
Difficulty: Medium
Strategic Advice: These kinds of questions are excellent opportunities to predict an answer. Remember, questions like this often test non-standard usages of words, so don't be thrown off by what might seem like a standard definition in the answer choices.
Getting to the Answer: From the context of lines 15–19, you can predict that the word “catalyze” means hire or recruit. More specifically, the people being recruited are from various places. This prediction best matches **C**.
A Opposite; the group was formed to aid in their effort.
B Distortion; this is a common definition for “catalyze” that doesn't work in context.
D Distortion; this has nothing to do with the context of the question and isn't a possible meaning for “catalyze.”
14. **D** **Category:** Inference
Difficulty: Medium
Strategic Advice: Inference questions like this one can be difficult, because the information you need to answer the question can come from anywhere in the passage. Use your notes to guide your research, and remember to make a strong prediction before evaluating the answer choices.
Getting to the Answer: The passage indicates in lines 36–38 that the weavings are consulted as oracles, and that they are thought to encode the history of the people and contain the souls of ancient ancestors. Predict that the weavings are important because of their cultural and spiritual significance, which matches **D**.

A Distortion; this might seem correct, because the weavings are used during this celebration, but the passage does not suggest that this is the primary reason the weavings are valuable.

B Distortion; that the collectors are willing to pay for the weavings is not why the Coromans value them.

C Distortion; though the passage states that the weavings survived the anti-Indian Bolivian governments in the past, it does not suggest that this is a reason for their value to the Coromans.

15. **A** **Category:** Detail
Difficulty: Medium
Strategic Advice: The answer to questions like this can be found in the passage, but you may have to put a few pieces of information together to get to the correct answer. Determine when the events mentioned in the answer choices happened relative to the question, and the correct answer will be easy to find.
Getting to the Answer: The passage indicates in line 40 that the weavings survived the Spanish conquest, so they must have been produced before then. This matches **A** perfectly.
B Opposite; the passage indicates that the weavings existed before Columbus landed in the Americas (line 45).
C Opposite; the Cultural Property Implementation Act became law in 1983 (line 70), and the weavings are much older than that.
D Opposite; the weavings were produced for Inca nobles (lines 32–33), so they must have been produced before the Incas disappeared.
16. **A** **Category:** Detail
Difficulty: Medium
Strategic Advice: You won't be able to predict an answer on questions like this, so be sure to pay attention to the specific details of the answer choices. You will be able to find evidence in the passage to support all of the choices except for one, which will leave you with the correct answer.
Getting to the Answer: All of the answer choices have supporting evidence from the passage, except for **A**. Line 32 states that the colors of the weavings were vibrant, which directly contradicts **A**, making it the correct answer choice.
B can be found in lines 45–47.
C is supported by lines 51–53.
D is supported by lines 47–51.
17. **B** **Category:** Inference
Difficulty: Medium
Strategic Advice: You won't be able to find the correct answer to an Inference question directly in the passage, but it won't be far off, either. Look at the context of the referenced lines and predict an answer.
Getting to the Answer: A good prediction for this question is that the collectors were made to return the weavings against their will; "jolted" in this context means that they were pressured. This matches **B**.
A Out of Scope; the passage does not imply that the collectors were unaware of the value of the weavings.
C Extreme; "jolted" does not imply physical punishment in this context.
D Distortion; the passage implies that outside influences made the collectors return the weavings, not that the collectors returned them of their own accord.

18. **C** **Category:** Inference
Difficulty: Medium
Strategic Advice: You may have to use evidence from several parts of the passage to answer generalization questions like this one. Be careful to find supporting evidence for any predictions you make, and you will be certain to get the right answer.
Getting to the Answer: The passage suggests that the return of the weavings has been a success. Lines 20 and 93–94 support the prediction that this has been successful. Lines 83–85, which says that “some, but not all, of their weavings” have been returned, suggests that there are more weavings to be returned. This matches **C**.
A Opposite; the passage only mentions legal successes (lines 15–19), and never suggests disappointment.
B Out of Scope; there is no evidence suggested that art collectors were encouraged by the return of the weavings.
D Out of Scope; though the passage mentions a cultural anthropologist (line 94), there is no support for the idea that the return of the weavings has been a useful lesson to anthropologists in general.
19. **C** **Category:** Inference
Difficulty: Medium
Strategic Advice: Inference questions like this will try to throw you off with details that come from the passage, but are either distorted or irrelevant to the question. Be sure you pay attention to specific information from the passage as you make your prediction.
Getting to the Answer: Many factors dealing with the return of the weavings are cited in the passage, but lines 1–2 and lines 25–29 state that the Coromans themselves largely credit the ancestral spirits residing in the weavings themselves. This makes a good prediction and matches **C** perfectly.
A Distortion; the passage does mention the involvement of the Bolivian government, but never from the perspective of the Coromans.
B Misused Detail; although the passage suggests that lawyers and activists worked on this case (lines 16 and 17), there is no evidence to suggest that the Coromans attribute their work to the return of the weavings.
D Misused Detail; the USIA was involved, but the Coromans never credit this agency for the return of the weavings.
20. **B** **Category:** Generalization
Difficulty: Medium
Strategic Advice: Predicting an answer is not an option with questions like this, so you’ll have to examine the passage carefully for the information to find the correct answer. Determine which statements have supporting evidence and which ones don’t, and you’ll be able to pinpoint the right answer choice.
Getting to the Answer: Evaluate the Roman numerals in turn:
 I. Distortion; although line 32 mentions that the weavings have “the texture of silk,” nothing in the passage mentions what type of fabric is used to make the weavings.
 II. Out of Scope; there is no mention of the weavings coming from ceremonial garb. At this point you know that statement III must be true, because the other two are false, and Roman numeral questions like this always have at least one true statement. The evidence for statement III can be found in the passage in lines 31–32. Therefore, **B** must be the correct answer choice.

Cohoes Mastodont

21. **C** **Category:** Function
Difficulty: Medium
Strategic Advice: When asked for the main purpose of the paragraph, try to summarize it in a short sentence before looking at the answer choices.
Getting to the Answer: The fourth paragraph describes how and where the mastodont was found. This best fits **C**.
A The paragraph does not explain how sediment and peat preserved the skeleton, only that they did.
B The fourth paragraph only briefly describes the workmen’s role, so it cannot be the paragraph’s main purpose.
D The passage offers no information about how other mastodonts have been found.
22. **D** **Category:** Detail
Difficulty: Low
Strategic Advice: This question is a detail question in disguise. Go through each answer choice methodically, referencing the passage to see which questions were answered and which one was not.
Getting to the Answer: The eighth paragraph states that the tusks were “too heavy to incorporate in the reconstructed skeleton,” but does not tell us why the reconstruction could not support their weight or why the tusks were so heavy. **D** is the only unanswered question among the answer choices.
A Misused Detail; the end of the ninth paragraph tells us that the “t” was added to make the name “more etymologically correct.”
B Misused Detail; the fourth paragraph states that “the bones had been preserved under sediment and peat.”
C Misused Detail; the sixth paragraph says “recent research” caused the reconstructed skeleton to stand “on its toes in a more graceful walking pose” and have a “more rounded spine.”
23. **D** **Category:** Detail
Difficulty: Low
Strategic Advice: Do not rely on your memory for a Detail question. Instead, reference the passage to check your prediction.
Getting to the Answer: The seventh paragraph tells us that “The last mastodont died about 10,800 years ago,” a few hundred years after **D** states. **D** is therefore the correct choice.
A Misused Detail; the sixth paragraph states that the mastodont skeleton included tusks and a tail.
B Misused Detail; The ninth paragraph states that the mastodont was a “vegetarian mammal.”
C Misused Detail; The sixth paragraph tells us that “Based on recent research,” the mastodont “has a more rounded spine.”
24. **C** **Category:** Inference
Difficulty: Medium
Strategic Advice: Use comparisons to infer qualities about the items being compared. Information about one item can help you make an inference about the other.
Getting to the Answer: The new frame was designed to be “unobtrusive” and to

“blend” in with “the overall structure.” This implies that the original, visible frame was distracting to the overall display, as **C** states.

A Out of Scope; the passage does not indicate that visible frames are informative.

B Distortion; though a frame is necessary to support the skeleton, the frame does not necessarily have to be visible.

D Distortion; though the old frame required holes to be drilled in the bones, this is unrelated to the fact that the frame was “visible,” and there is no indication that visitors would know these holes had been drilled.

25. **B** **Category:** Generalization

Difficulty: High

Strategic Advice: Because the passage as a whole is about the new construction of the Cohoes Mastodont and because the question stem asks for its “most important” feature, the correct choice for this question will closely resemble the overall purpose of the passage.

Getting to the Answer: The third paragraph states that “modern bone restoration, assembly, and mounting techniques” helped to create “a more natural, lifelike skeleton.” The emphasis is on the effect of the natural lifelike skeleton rather than the steps that contributed to the effect. This best fits **B**.

A Misused Detail; the use of the plastic solution is only one of many improvements in the new construction.

C Misused Detail; the blended frame enhances the quality of the display, but is not the most important feature of the new construction.

D Misused Detail; the rearrangement of the bones was just one of many ways in which the construction of the skeleton was improved.

26. **A** **Category:** Generalization

Difficulty: Low

Strategic Advice: Sometimes an author will describe something through providing examples instead of telling you directly. Look at the examples provided in order to make your own characterization.

Getting to the Answer: The fifth paragraph describes the restoration as a “challenge,” and provides a list of difficult tasks that took two years to complete. Malin’s work took time and attention to detail, which is best reflected in **A**.

B Distortion; though Malin’s work was extensive, there is no indication that it was “excessive.”

C Distortion; the task Malin faced was daunting, but you’re looking for an adjective to describe her “efforts.”

D Opposite; the passage does not suggest that Malin’s efforts were inadequate or “insufficient,” rather that they were extraordinarily meticulous.

27. **A** **Category:** Inference

Difficulty: Medium

Strategic Advice: Refer to the passage even on Inference questions—the correct choice will always be supported by the passage.

Getting to the Answer: The second paragraph states that when the State Museum was moved “the Cohoes Mastodont was considered too fragile to move.” The following sentence tells us that it was subsequently placed in storage. **A** accurately captures the reason the skeleton was stored.

B Out of Scope; the passage does not state that the new museum was unable to house the skeleton.

C Distortion; the skeleton was restored, but the need for restoration was not the direct cause of its initial storage.

D Distortion; technological advances did not “require” that the skeleton be reanalyzed, and they were developed while the skeleton was already in storage.

28. **B** **Category:** Function
Difficulty: Medium
Strategic Advice: Be sure to separate the main idea of a paragraph from the details the author uses to support the main idea.
Getting to the Answer: The paragraph describes the ways “recent research” contributed to a more accurate representation. This matches **B**.
A Misused Detail; the sixth paragraph only mentions “earlier misplacements” in passing.
C Misused Detail; the new tail is only an example of the larger theme of the improvements in the new construction.
D Misused Detail/Out of Scope; “stature” is mentioned in the eighth paragraph, and no information is given about “previous conclusions” regarding stature.
29. **D** **Category:** Inference
Difficulty: High
Strategic Advice: Because the question asks about someone’s perception, pay special attention to places in the passage where the subject reveals her point of view.
Getting to the Answer: Malin feared that she would not get the skeleton “together—ever.” She describes the skeleton as “a giant puzzle, but not a puzzle where the edges meet.” Her greatest challenge was the accurate reassembly of the skeleton, which fits **D**.
A Distortion; Malin “wasn’t sure” if she would complete her work within the time constraints, but we do not know if this affected the pace of her work.
B Misused Detail; she did have to create many replicas, but the passage does not suggest that this was the most challenging aspect of the restoration.
C Opposite; Malin’s predecessors’ “hard work” in “piecing together the bones” was helpful and did not present a challenge.
30. **C** **Category:** Detail
Difficulty: Medium
Strategic Advice: The answers to a Detail question can be found directly in the passage. Use your notes to direct your research.
Getting to the Answer: The fifth paragraph states that the “genuine bones...are a natural color” and “the replicas are painted a darker brown” in order to “give Museum visitors a better idea of what is real and what is replica.” This directly corresponds to **C**.
A Out of Scope; the passage does not suggest that Malin kept any of her predecessors’ replicas.
B Misused Detail; though painting replica bones darker brown is part of skeleton preservation, knowledge of this technique is not the most important piece of information the brown replica bones provide to visitors.
D Distortion; the brown replica bones do provide a sense of how much of the skeleton is real, but this does not correspond to helping visitors understand the problems of the skeleton’s earlier state.

Section 8 (ACT Science)

1. **C** **Category:** Figure Interpretation
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: When large volumes of data are presented, don't rush to find the relevant details. Work methodically.
Getting to the Answer: For each graph, find the bar that corresponds to the month of October. Then find the ones that exceed 20 Mgal/day. **C** is Perfect.

2. **A** **Category:** Figure Interpretation
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: Be careful to find the correct details amongst busy graphs.
Getting to the Answer: For each graph, find the two bars that correspond to March and April. The pair whose values are closest is the correct choice, as in **A**.

3. **B** **Category:** Figure Interpretation
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: Read the question carefully, making sure you are looking at the correct data.
Getting to the Answer: The Na concentration in Spring D is 15.3 mg/L, while that in Spring B is 5.1 mg/L. The concentration in Spring D is exactly 3 times that of Spring B, as in **B**.

4. **C** **Category:** Figure Interpretation
Difficulty: High
Passage Type: Data Representation
Strategic Advice: Be very careful to refer to the correct data points.
Getting to the Answer: For the aquifer data, refer to the data points marked by squares, and for Spring C, refer to the triangles. Check each answer choice for accuracy, each time referring to Figure 2. The square for August is approximately equal to the triangle for October, as in **C**.

5. **B** **Category:** Patterns
Difficulty: High
Passage Type: Data Representation
Strategic Advice: Some challenging questions may test your ability to find a pattern and extrapolate it to another set of data.
Getting to the Answer: According to Figure 2, the Ca concentration in an aquifer is approximately one half that of the spring above it. Even if you don't notice this exact relationship, you can eliminate **A**, since nothing suggests the Ca concentration would ever go to zero. During no month does the Ca concentration of the aquifer equal or exceed that of the spring, which eliminates **C** and **D**. Only **B** makes sense.

6. **D** **Category:** Figure Interpretation
Difficulty: Low
Passage Type: Research Summary
Strategic Advice: Some questions will simply ask you to extract data directly from a figure.

Getting to the Answer: Look for the largest number in the “Average weight gain” column, and find the conditions given in the same row. **D** is Perfect.

7. **B** **Category:** Patterns
Difficulty: Medium
Passage Type: Research Summary
Strategic Advice: Think about the results of each study separately before drawing conclusions.
Getting to the Answer: The average body length increase in this eighth enclosure exceeds that of any shown in Table 2. Temperature was not varied in Study 3, though. The results of Study 1 suggest a lower temperature would result in increased food consumption, making **B** correct. If this is not obvious, you can notice that **A**, **C**, and **D** each contain elements that would result in decreased food consumption, making **B** the only possibility.
8. **D** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Research Summary
Strategic Advice: Think about each study separately before integrating their results together.
Getting to the Answer: The results of Study 1 suggest that, within the given temperature range, the mice consume more when subjected to colder temperatures. Looking at the daily food consumption alone should then be enough to determine temperatures roughly. The highest food consumption indicates the lowest temperature, as in **D**.
9. **B** **Category:** Patterns
Difficulty: Low
Passage Type: Research Summary
Strategic Advice: Sometimes you are asked to apply the results of the given experiment to other situations.
Getting to the Answer: Table 2 suggests that lower food abundance results in slower growth, as in **B**.
10. **C** **Category:** Patterns
Difficulty: Medium
Passage Type: Research Summary
Strategic Advice: Apparent contradictions are usually accounted for by adjusting one or two variables.
Getting to the Answer: The results of the three studies suggest that rate of weight gain is affected by temperature, food abundance, and population density, but the question only mentions a decrease in food abundance. A simultaneous decrease in temperature and/or a decrease in population density would counteract the effects of the decreasing food abundance. **C** is Perfect.
11. **B** **Category:** Scientific Reasoning
Difficulty: Low
Passage Type: Research Summary
Strategic Advice: Many questions focus on your ability to recognize the difference between variables and constants.
Getting to the Answer: Both studies involve changing temperatures, as in **B**.

12. **A** **Category:** Scientific Reasoning
Difficulty: Low
Passage Type: Conflicting Viewpoints
Strategic Advice: Be careful to keep in mind which ideas belong to which hypothesis.
Getting to the Answer: The volcano of the Terrestrial Hypothesis erupted essentially at the prehistoric meeting point between South America and Antarctica. Any deposits left by this volcano should be shared between those two locations, as in **A**. If all else fails, eliminate **B**, because the North Pole is not mentioned anywhere in the passage. Also eliminate **C** and **D**, since meteors and meteorites are only mentioned as part of the Cosmic Hypothesis.
13. **C** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: For “According to the passage” questions, eliminate anything not stated or directly suggested by the passage.
Getting to the Answer: **B** is not mentioned at all, while **A** and **D** are mentioned, but not as reasons for rough terrain. Within the Cosmic Hypothesis, “glacial erosion” is credited with deforming the Antarctic surface.
14. **B** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: Refer to the passage for details.
Getting to the Answer: **C** and **D** are Out of Scope, while **A** is a Misused Detail. The age of the rock is stated in the middle of the first paragraph.
15. **D** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: Make sure you refer to the correct hypothesis.
Getting to the Answer: The Cosmic Hypothesis states that minimal craters would be left by meteorites striking the surface at “glancing” angles. This suggests that larger craters would be left by meteorites striking more directly. **D** is Perfect.
16. **D** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: At least one question will ask you to compare or contrast the logic of two conflicting viewpoints.
Getting to the Answer: The fundamental disagreement between these two viewpoints is the source of the rock, either a meteorite or a terrestrial volcano. **A**, **B**, and **C** are details upon which the two viewpoints agree.
17. **B** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: Any item that two conflicting viewpoints agree upon is likely fundamental to the logic of both arguments.
Getting to the Answer: **A**, **C**, and **D** are not mentioned in the passage.

18. **A** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Conflicting Viewpoints
Strategic Advice: Approach each choice piece-by-piece, eliminating incorrect or irrelevant choices.
Getting to the Answer: The passage provides no evidence for **B** or **D**; **C** is a Misused Detail. **A** is Correct.
19. **C** **Category:** Patterns
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: Infer only what **MUST** follow from the given data.
Getting to the Answer: Temperature is the only variable that differs between Trials 3 and 4, making **C** the correct choice. The other choices may indicate true relationships, but they are not suggested by Trials 3 and 4.
20. **D** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: Isolate one variable at a time to learn about the effects of each.
Getting to the Answer: Choose the trials with all variables the same except for dopant concentration. This is the case for **D** only.
21. **A** **Category:** Scientific Reasoning
Difficulty: Medium
Passage Type: Data Representation
Strategic Advice: Take your time with complicated graphs.
Getting to the Answer: While either **C** or **D** could be valid statements, neither is supported by Figure 1. Careful inspection of the graph yields that for any dopant concentration shown, the p-type values are greater than the n-type values, as in **A**.
22. **B** **Category:** Patterns
Difficulty: Low
Passage Type: Data Representation
Strategic Advice: Be careful to refer to the correct data.
Getting to the Answer: Figure 1 suggests that all p-type dopants yield the same resistivity versus concentration relationship for Si. Therefore In would act exactly like Ga at the same concentration. Once you realize that, you can just read the resistivity value for Ga directly from Table 1.
23. **C** **Category:** Patterns
Difficulty: High
Passage Type: Data Representation
Strategic Advice: Use trends in the data to interpolate values in between those given.
Getting to the Answer: 75 K is right in between 50 K and 100 K, the electron mobilities for which are given in Table 2. Since Table 2 suggests that mobility varies inversely with temperature, the correct mobility should lie between 2,900 and 5,300 $\text{cm}^2/\text{V}/\text{s}$, as in **C**.



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