

The Graduate Record
Examinations®
SECTION 1
Analytical Writing

ANALYZE AN ISSUE

30 minutes

You will be given a brief quotation that states or implies an issue of general interest and specific instructions on how to respond to that issue. You will then have 30 minutes to plan and compose a response according to the specific instructions. A response to any other issue will receive a score of zero.

Make sure that you respond according to the specific instructions and support your position on the issue with reasons and examples drawn from such areas as your reading, experience, observations, and/or academic studies.

Trained GRE readers will evaluate your response for its overall quality, based on how well you:

- Respond to the specific task instructions
- Consider the complexities of the issue
- Organize, develop, and express your ideas
- Support your ideas with relevant reasons and/or examples
- Control the elements of standard written English

Before you begin writing, you may want to think for a few minutes about the issue and the specific task instructions and then plan your response. Be sure to develop your position fully and organize it coherently, but leave time to reread what you have written and make any revisions you think are necessary.

Issue Topic

Some people believe that corporations have a responsibility to promote the well-being of the societies and environments in which they operate. Others believe that the only responsibility of corporations, provided they operate within the law, is to make as much money as possible.

Write a response in which you discuss which view more closely aligns with your own position and explain your reasoning for the position you take. In developing and supporting your position, you should address both of the views presented.

The Graduate Record
Examinations®
SECTION 2
Analytical Writing

ANALYZE AN ARGUMENT

30 minutes

You will be given a short passage that presents an argument and specific instructions on how to respond to that passage. You will have 30 minutes to plan and compose a response in which you evaluate the passage according to the specific instructions. A response to any other argument will receive a score of zero.

Note that you are NOT being asked to present your own views on the subject. Make sure that you respond according to the specific instructions and support your evaluation with relevant reasons and/or examples.

Trained GRE readers will evaluate your response for its overall quality, based on how well you:

- Respond to the specific task instructions
- Identify and analyze features of the argument relevant to the assigned task
- Organize, develop, and express your ideas
- Support your analysis with relevant reasons and/or examples
- Control the elements of standard written English

Before you begin writing, you may want to think for a few minutes about the argument passage and the specific task instructions and then plan your response. Be sure to develop your response fully and organize it coherently, but leave time to reread what you have written and make any revisions you think are necessary.

Argument Topic

The following appeared in a memorandum from the owner of Movies Galore, a chain of video rental stores.

“In order to reverse the recent decline in our profits, we must reduce operating expenses at Movies Galore’s ten video rental stores. Since we are famous for our special bargains, raising our rental prices is not a viable way to improve profits. Last month our store in downtown Marston significantly decreased its operating expenses by closing at 6:00 P.M. rather than 9:00 P.M. and by reducing its stock by eliminating all movies released more than five years ago. Therefore, in order to increase profits without jeopardizing our reputation for offering great movies at low prices, we recommend implementing similar changes in our other nine Movies Galore stores.”

Write a response in which you discuss what questions would need to be answered in order to decide whether the recommendation is likely to have the predicted result. Be sure to explain how the answers to these questions would help to evaluate the recommendation.

NO TEST MATERIAL ON THIS PAGE

SECTION 3
Verbal Reasoning
Time—35 minutes
25 Questions

For questions 1 to 8, select one entry for each blank from the corresponding column of choices. Fill all blanks in the way that best completes the text.

1. Although plant and animal species that become established in ecosystems where they did not originate are sometimes referred to by the alarming term “invasive species,” many such species are _____ in their new environments.

(A) innocuous
(B) conspicuous
(C) robust
(D) menacing
(E) distinctive

2. Far from being _____ the corporate world because of cutbacks, serious researchers are playing a growing role in innovation at many firms.

(A) lured to
(B) enchanted with
(C) banished from
(D) protected by
(E) immured in

3. The brief survey, published under the title *The Work of Nature: How the Diversity of Life Sustains Us*, is surprisingly (i)_____. Indeed it makes several longer treatments of the effects of lost biodiversity seem (ii)_____.

Blank (i)

(A) distorted
(B) objective
(C) comprehensive

Blank (ii)

(D) redundant
(E) pithy
(F) premature

4. The government has no choice but to (i)_____ the incessant demands for land reform, and yet any governmental action that initiated land reform without requisite attention to agrarian reform would (ii)_____ the overall goal of economic modernization.

Blank (i)

(A) anticipate
(B) heed
(C) silence

Blank (ii)

(D) delineate
(E) condone
(F) compromise

5. Certain music lovers yearn for (i)_____, but when it is achieved, there is something missing; perhaps they feel uncomfortable in a world where nothing discernible is (ii)_____.

Blank (i)

(A) novelty
(B) beauty
(C) flawlessness

Blank (ii)

(D) wrong
(E) visionary
(F) changed

6. Putting a cash value on the ecological services provided by nature—such as the water filtration “service” provided by a forested watershed—has, historically, been a (i)_____ process. Early attempts at such valuation resulted in impressive but (ii)_____ figures that were seized on by environmental advocates and then, when these figures were later (iii)_____, they were used by opponents to tar the whole idea.

Blank (i)

(A) dispassionate
(B) problematic
(C) straightforward

Blank (ii)

(D) redundant
(E) unsound
(F) understated

Blank (iii)

(G) ignored
(H) discredited
(I) confirmed

7. Only with the discovery of an ozone hole over Antarctica in 1985 did chemical companies finally relinquish their opposition to a ban on chlorofluorocarbons (CFCs), which destroy ozone. The discovery suggested that strong political action to halt production of CFCs might be (i)_____, and fortunately, the chemical industry no longer felt compelled to oppose such action: although companies had recently (ii)_____ their research into CFC substitutes, studies they had initiated years earlier had produced (iii)_____ results.

Blank (i)

(A) imminent
(B) imprudent
(C) premature

Blank (ii)

(D) corroborated
(E) publicized
(F) curtailed

Blank (iii)

(G) encouraging
(H) inconclusive
(I) unsurprising

8. The incipient (i)_____ regarding taxes could affect trade between the two countries much more than the (ii)_____ banana imports, which has been going on for years. Unfortunately, the trade regulators seem to be ignoring both disagreements.

Blank (i)

(A) row
(B) accord
(C) investigation

Blank (ii)

(D) profitable dealing in
(E) predicament regarding
(F) festering dispute over

For each of questions 9 to 14, select one answer choice unless otherwise instructed.

Questions 9 and 10 are based on the following reading passage.

line Fossil bones of the huge herbivorous dinosaurs known as sauropods were first discov-
5 ered and studied between 1840 and 1880, providing evidence for the gargantuan
dimensions of the adults. The shape of sauropod teeth suggested what they ate. But
aside from trackways, or series of fossilized footprints—which established that sauro-
pods at least occasionally lived in herds — fossils incorporating direct evidence of other
behavior, such as reproductive behavior, have been almost nonexistent. Because no
10 modern land animals even approach sauropod size, scientists have also lacked a living
analogue to use as a guide to possible sauropod behavior. Until the recent discovery of
fossilized sauropod nesting grounds, scientists were thus uncertain whether sauropods
laid eggs or gave birth to live young.

For the following question, consider each of the choices separately and select all that apply.

9. Which of the following can be inferred from the passage regarding the evidence provided by sauropod teeth?
- A The teeth allow inferences to be made about sauropod social behavior.
 - B The shape of the teeth indicates that sauropods were herbivorous.
 - C The teeth have no resemblance to those of any modern land animal.

For the following question, consider each of the choices separately and select all that apply.

10. Which of the following can be inferred from the passage regarding the recently discovered fossilized sauropod nesting grounds?
- A They are among the few fossils incorporating direct evidence of sauropod behavior.
 - B They confirm the evidence provided by trackways about sauropod behavior.
 - C They have forced a reevaluation of theories regarding the nature of sauropod herd behavior.

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Questions 11 to 14 are based on the following reading passage.

Some researchers contend that sleep plays no role in the consolidation of declarative memory (i.e., memory involving factual information). These researchers note that people with impairments in rapid eye movement (REM) sleep continue to lead normal lives, and they argue that if sleep were crucial for memory, then these individuals would have apparent memory deficits. Yet the same researchers acknowledge that the cognitive capacities of these individuals have never been systematically examined, nor have they been the subject of studies of tasks on which performance reportedly depends on sleep. Even if such studies were done, they could only clarify our understanding of the role of REM sleep, not sleep in general.

These researchers also claim that improvements of memory overnight can be explained by the mere passage of time, rather than attributed to sleep. But recent studies of memory performance after sleep—including one demonstrating that sleep stabilizes declarative memories from future interference caused by mental activity during wakefulness—make this claim unsustainable. Certainly there are memory-consolidation processes that occur across periods of wakefulness, some of which neither depend on nor are enhanced by sleep. But when sleep is compared with wakefulness, and performance is better after sleep, then some benefit of sleep for memory must be acknowledged.

11. The primary purpose of the passage is to
- (A) present the evidence that supports a particular claim regarding REM sleep and memory
 - (B) describe how various factors contribute to the effect of sleep on memory
 - (C) argue against a particular position regarding sleep's role in memory
 - (D) summarize the most prevalent theory regarding sleep and memory
 - (E) defend the importance of the consolidation of declarative memory
12. According to the author of the passage, which of the following generalizations about memory and sleep is true?
- (A) There are some memory-consolidation processes that have nothing to do with sleep.
 - (B) Sleep is more important to the consolidation of declarative memory than to the consolidation of other types of memory.
 - (C) REM sleep is more important to memory consolidation than is non-REM sleep.
 - (D) There are significant variations in the amount of sleep that people require for the successful consolidation of memory.
 - (E) It is likely that memory is more thoroughly consolidated during wakefulness than during sleep.
13. Which of the following best describes the function of the sentence in lines 14–16 (“Certainly . . . sleep”)?
- (A) It provides the reasoning behind a claim about the role of sleep in memory consolidation.
 - (B) It explains why a previous claim about sleep and memory is unsustainable.

- (C) It demonstrates why wakefulness is central to the process of declarative memory consolidation.
- (D) It emphasizes the limited role sleep plays in the process of declarative memory consolidation.
- (E) It concedes that the consolidation of declarative memory does not depend entirely on one factor.
14. The importance of the study mentioned in lines 12–14 is that it
- (A) reveals the mechanism by which declarative memory is stabilized during sleep
- (B) identifies a specific function that sleep plays in the memory-consolidation process
- (C) demonstrates that some kinds of mental activity can interfere with memory consolidation
- (D) suggests that sleep and wakefulness are both important to memory consolidation
- (E) explains how the passage of time contributes to memory consolidation

For questions 15 to 19, select the two answer choices that, when used to complete the sentence, fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.

15. In American Indian art, the supposed distinction between modern and traditional was fabricated by critics, and when artists have control over interpretation of their own work, the distinction appears, happily, to have been _____.
- (A) eliminated
- (B) reinforced
- (C) put to rest
- (D) intensified
- (E) recognized
- (F) established
16. Notwithstanding their _____ regarding other issues, township residents have consistently passed the board of education's annual budget.
- (A) accord
- (B) indecision
- (C) consensus
- (D) disagreement
- (E) divergence
- (F) enthusiasm

17. Some of the company's supporters charged that the negative report had been motivated by a broader political assault on the company that was designed to help market rivals who would like to see the company _____.
- A reined in
 - B bolstered
 - C indemnified
 - D propped up
 - E manacled
 - F lionized
18. Skeptics contend that any scheme for charging visitors to Web sites that rewards the vendor adequately would require steep prices, _____ the kind of frequent, casual use of Web sites that surfers now take for granted.
- A bridling
 - B exciting
 - C forbidding
 - D inhibiting
 - E provoking
 - F reversing
19. It seems obvious that Miles Davis' _____ the Juilliard School, which resulted in his decision to drop out, was based on the school's training of musicians for a kind of music that he did not want to play.
- A disaffection with
 - B dislocation of
 - C disentanglement from
 - D subversion of
 - E displacement of
 - F estrangement from

For each of questions 20 to 25, select one answer choice unless otherwise instructed.

Question 20 is based on the following reading passage.

Astronomers found a large body orbiting close to the star Upsilon Andromedae. The standard theory of planet formation holds that no planet that large could be formed so close to a star, leading to the suggestion that the body is a companion star. A subsequent discovery puts that suggestion in doubt: two other large bodies were found orbiting close to Upsilon Andromedae, and the standard theory of companion stars allows for at most one companion star.

20. Which of the following, if true, most helps to resolve the status of the orbiting body without casting doubt on the two standard theories mentioned?
- (A) The smaller a planet orbiting a star is, and the farther away it is from the star, the less likely it is to be discovered.
 - (B) If a planet's orbit is disturbed, the planet can be drawn by gravity toward the star it is orbiting.
 - (C) The largest of the bodies orbiting Upsilon Andromedae is the farthest away from the star, and the smallest is the nearest.
 - (D) It is likely that there are many stars, in addition to Upsilon Andromedae and the Sun, that are orbited by more than one smaller body.
 - (E) In most cases of companion stars, the smaller companion is much fainter than the larger star.

Question 21 is based on the following reading passage.

In Gilavia, the number of reported workplace injuries has declined 16 percent in the last five years. However, perhaps part of the decline results from injuries going unreported: many employers have introduced safety-incentive programs, such as prize drawings for which only employees who have a perfect work-safety record are eligible. Since a workplace injury would disqualify an employee from such programs, some employees might be concealing injury, when it is feasible to do so.

21. Which of the following, if true in Gilavia, most strongly supports the proposed explanation?
- (A) In the last five years, there has been no decline in the number of workplace injuries leading to immediate admission to a hospital emergency room.
 - (B) Employers generally have to pay financial compensation to employees who suffer work-related injuries.
 - (C) Many injuries that happen on the job are injuries that would be impossible to conceal and yet would not be severe enough to require any change to either the employee's work schedule or the employee's job responsibilities.
 - (D) A continuing shift in employment patterns has led to a decline in the percentage of the workforce that is employed in the dangerous occupations in which workplace injuries are likely.
 - (E) Employers who have instituted safety-incentive programs do not in general have a lower proportion of reported workplace injuries among their employees than do employers without such programs.

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Questions 22 and 23 are based on the following reading passage.

The attribution of early-nineteenth-century English fiction is notoriously problematic. Fewer than half of new novels published in Britain between 1800 and 1829 had the author's true name printed on the title page. Most of these titles have subsequently
line been attributed, either through the author's own acknowledgment of a previously
5 anonymous or pseudonymous work, or through bibliographical research. One important tool available to researchers is the list of earlier works "by the author" often found on title pages. But such lists are as likely to create new confusion as they are to solve old problems. Title pages were generally prepared last in the publication process, often without full authorial assent, and in the last-minute rush to press, mistakes were frequently
10 made.

For the following question, consider each of the choices separately and select all that apply.

22. The passage suggests that which of the following factors contributes to the "notoriously problematic" (line 1) nature of authorial attribution in early-nineteenth-century English fiction?
- A The unwillingness of any writers to acknowledge their authorship of works that were originally published anonymously or pseudonymously
 - B The possibility that the title page of a work may attribute works written by other authors to the author of that work
 - C The possibility that the author's name printed on a title page is fictitious

For the following question, consider each of the choices separately and select all that apply.

23. The passage suggests that which of the following is frequently true of the title pages of early-nineteenth-century English novels?
- A The title page was prepared for printing in a hurried manner.
 - B Material on the title page was included without the author's knowledge or approval.
 - C Information on the title page was deliberately falsified to make the novel more marketable.

Questions 24 and 25 are based on the following reading passage.

line
5 The more definitions a given noun has, the more valuable is each one. Multiple definitions, each subtly different from all the others, convey multiple shades of meaning. They expand the uses of the word; language is enriched, thought is widened, and interpretations increase or dilate to fill the potentialities of association. The very impossibility of absoluteness in the definition of certain nouns adds to the levels of connotation they may reach. The inner life of a writer often says more than most readers can know; the mind of a reader can discover truths that go beyond the intent or perhaps even the comprehension of the writer. And all of it finds expression because a word can mean many things.

24. In the context in which it appears, “shades” (line 2) most nearly means
- (A) reminders
 - (B) nuances
 - (C) obscurities
 - (D) coverings
 - (E) degrees
25. The passage suggests that a writer’s use of nouns that have multiple definitions can have which of the following effects on the relationship between writer and reader?
- (A) It can encourage the reader to consider how the writer’s life might have influenced the work.
 - (B) It can cause the reader to become frustrated with the writer’s failure to distinguish between subtle shades of meaning.
 - (C) It can allow the reader to discern in a work certain meanings that the writer did not foresee.
 - (D) It allows the writer to provide the reader with clues beyond the word itself in order to avoid ambiguity.
 - (E) It allows the writer to present unfamiliar ideas to the reader more efficiently.

STOP. This is the end of Section 3.

SECTION 4
Verbal Reasoning
Time—35 minutes
25 Questions

For questions 1 to 8, select one entry for each blank from the corresponding column of choices. Fill all blanks in the way that best completes the text.

1. The unexplained digressions into the finer points of quantum electrodynamics are so _____ that even readers with a physics degree would be wise to keep a textbook handy to make sense of them.

(A) uninteresting
(B) controversial
(C) unsophisticated
(D) frustrating
(E) humorless

2. The belief that politicians might become _____ after their election to office led to the appointment of ethics officers at various levels of government.

(A) scrupulous
(B) entrenched
(C) venal
(D) puzzled
(E) artificial

3. Even the charisma and technical prowess of two fine actors are not _____ the task of fully invigorating a gray domestic drama with a tired tale to tell.

(A) required for
(B) interested in
(C) preferred for
(D) adequate to
(E) inferior to

4. There may be a threshold below which blood pressure reductions become _____ given that a long-running study showed no decreased heart risk for drops in blood pressure below a certain point.

(A) worthwhile
(B) indiscernible
(C) arduous
(D) significant
(E) superfluous

5. Unlike the problems in recent financial scandals, issues raised by the regulators in this case appear largely to pertain to unwieldy accounting rules that are open to widely divergent interpretations—not to (i) _____ transactions designed to (ii) _____ corporate malfeasance.

Blank (i)

(A) sham
(B) unpremeditated
(C) justifiable

Blank (ii)

(D) cloak
(E) ameliorate
(F) illuminate

6. Everyone has routines that govern their work. The myth is that artists are somehow different, that they reject (i) _____, but of course that's not true: most artists work as the rest of us do, (ii) _____, day by day, according to their own customs.

Blank (i)

(A) latitude
(B) habit
(C) materialism

Blank (ii)

(D) impetuously
(E) ploddingly
(F) sporadically

7. Repression of painful memories is sometimes called “willed forgetting.” Yet true forgetting is (i) _____ than the phenomenon of repressed memory. In spite of the effort that it (ii) _____, repressing unwanted memories is less (iii) _____ than truly forgetting them, for repressed memories are prone to come back.

Blank (i)

(A) less controlled
(B) different in its effect
(C) far more common

Blank (ii)

(D) eases
(E) conveys
(F) entails

Blank (iii)

(G) permanent
(H) arduous
(I) immediate

8. Rather than viewing the Massachusetts Bay Colony's antinomian controversy as the inevitable (i) _____ of the intransigent opposing forces of radical and (ii) _____ beliefs, male and female piety, (iii) _____ and secular power, and the like, as other critics have, Winship argues that the crisis was not “fixed and structural.”

Blank (i)

(A) dissolution
(B) melding
(C) collision

Blank (ii)

(D) revolutionary
(E) orthodox
(F) questionable

Blank (iii)

(G) clerical
(H) civil
(I) cerebral

For each of questions 9 to 14, select one answer choice unless otherwise instructed.

Questions 9 to 12 are based on the following reading passage.

Until recently, many anthropologists assumed that the environment of what is now the southwestern United States shaped the social history and culture of the region's indigenous peoples. Building on this assumption, archaeologists asserted that adverse environmental conditions and droughts were responsible for the disappearances and migrations of southwestern populations from many sites they once inhabited.

However, such deterministic arguments fail to acknowledge that local environmental variability in the Southwest makes generalizing about that environment difficult. To examine the relationship between environmental variation and sociocultural change in the Western Pueblo region of central Arizona, which indigenous tribes have occupied continuously for at least 800 years, a research team recently reconstructed the climatic, vegetational, and erosional cycles of past centuries. The researchers found it impossible to provide a single, generally applicable characterization of environmental conditions for the region. Rather, they found that local areas experienced different patterns of rainfall, wind, and erosion, and that such conditions had prevailed in the Southwest for the last 1,400 years. Rainfall, for example, varied within and between local valley systems, so that even adjacent agricultural fields can produce significantly different yields.

The researchers characterized episodes of variation in southwestern environments by frequency: low-frequency environmental processes occur in cycles longer than one human generation, which generally is considered to last about 25 years, and high-frequency processes have shorter cycles. The researchers pointed out that low-frequency processes, such as fluctuations in stream flow and groundwater levels, would not usually be apparent to human populations. In contrast, high-frequency fluctuations such as seasonal temperature variations are observable and somewhat predictable, so that groups could have adapted their behaviors accordingly. When the researchers compared sequences of sociocultural change in the Western Pueblo region with episodes of low- and high-frequency environmental variation, however, they found no simple correlation between environmental process and sociocultural change or persistence.

Although early Pueblo peoples did protect themselves against environmental risk and uncertainty, they responded variously on different occasions to similar patterns of high-frequency climatic and environmental change. The researchers identified seven major adaptive responses, including increased mobility, relocation of permanent settlements, changes in subsistence foods, and reliance on trade with other groups. These findings suggest that groups' adaptive choices depended on cultural and social as well as environmental factors and were flexible strategies rather than uncomplicated reactions to environmental change. Environmental conditions mattered, but they were rarely, if ever, sufficient to account for sociocultural persistence and change. Group size and composition, culture, contact with other groups, and individual choices and actions were—barring catastrophes such as floods or earthquakes—more significant for a population's survival than were climate and environment.

9. The passage is primarily concerned with
- (A) explaining why certain research findings have created controversy
 - (B) pointing out the flaws in a research methodology and suggesting a different approach
 - (C) presenting evidence to challenge an explanation and offering an alternative explanation
 - (D) elucidating the means by which certain groups have adapted to their environment
 - (E) defending a long-held interpretation by presenting new research findings
10. Which of the following findings would most strongly support the assertion made by the archaeologists mentioned in line 3?
- (A) A population remained in a certain region at least a century after erosion wore away much of the topsoil that sustained grass for their grazing animals.
 - (B) The range of a certain group's agricultural activity increased over a century of gradual decrease in annual rainfall.
 - (C) As winters grew increasingly mild in a certain region, the nomadic residents of the region continued to move between their summer and winter encampments.
 - (D) An agricultural population began to trade for supplies of a grain instead of producing the grain in its own fields as it had in the past.
 - (E) A half century of drought and falling groundwater levels caused a certain population to abandon their settlements along a riverbank.
11. The fact that "adjacent agricultural fields can produce significantly different yields" (lines 16–17) is offered as evidence of the
- (A) unpredictability of the climate and environment of the southwestern United States
 - (B) difficulty of producing a consistent food supply for a large population in the Western Pueblo region
 - (C) lack of water and land suitable for cultivation in central Arizona
 - (D) local climatic variation in the environment of the southwestern United States
 - (E) high-frequency environmental processes at work in the southwestern United States

12. It can be inferred from the passage that which of the following activities is NOT an example of a population responding to high-frequency environmental processes?
- (A) Developing watertight jars in which to collect and store water during the rainy season
 - (B) Building multistory dwellings in low-lying areas to avoid the flash flooding that occurs each summer
 - (C) Moving a village because groundwater levels have changed over the last generation
 - (D) Trading with other groups for furs from which to make winter clothes
 - (E) Moving one's herds of grazing animals each year between summer and winter pastures

Questions 13 and 14 are based on the following reading passage.

Arctic sea ice comes in two varieties. Seasonal ice forms in winter and then melts in summer, while perennial ice persists year-round. To the untrained eye, all sea ice looks similar, but by licking it, one can estimate how long a particular piece has been float-
 line ing around. When ice begins to form in seawater, it forces out salt, which has no place
 5 in the crystal structure. As the ice gets thicker, the rejected salt collects in tiny pockets of brine too highly concentrated to freeze. A piece of first-year ice will taste salty. Eventually, if the ice survives, these pockets of brine drain out through fine, veinlike channels, and the ice becomes fresher; multiyear ice can even be melted and drunk.

For the following question, consider each of the choices separately and select all that apply.

13. The passage mentions which of the following as being a characteristic of seasonal ice?
- (A) It is similar in appearance to perennial ice.
 - (B) It is typically filled with fine, veinlike channels.
 - (C) It tastes saltier than perennial ice.
14. In the context in which it appears, "fine" (line 7) most nearly means
- (A) acceptable
 - (B) elegant
 - (C) precise
 - (D) pure
 - (E) small

For questions 15 to 18, select the two answer choices that, when used to complete the sentence, fit the meaning of the sentence as a whole and produce completed sentences that are alike in meaning.

15. It would have been disingenuous of the candidate to appear _____ when her opponent won the election, but she congratulated the victor nonetheless.
- A gracious
 - B ecstatic
 - C crestfallen
 - D indifferent
 - E euphoric
 - F disgruntled
16. As market forces penetrate firms and bid up the value of attributes of labor that are more measurable than is the knowledge born of experience, it can be expected that trends in wages will not _____ those whose main value lies in such experiential knowledge.
- A favor
 - B aid
 - C affect
 - D forsake
 - E betray
 - F differentiate
17. The point we might still take from the First World War is the old one that wars are always, as one historian aptly put it, _____: they produce unforeseeable results.
- A unsurprising
 - B astounding
 - C conventional
 - D ruinous
 - E stunning
 - F devastating
18. This is the kind of movie—stuffed with intimations of faraway strife and people in suits talking frantically on cell phones and walkie-talkies—that is conventionally described as a political thriller, but the film is as apolitical as it is _____.
- A intense
 - B unprecedented
 - C subtle
 - D humdrum
 - E refined
 - F dull

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For each of questions 19 to 25, select one answer choice unless otherwise instructed.

Questions 19 and 20 are based on the following reading passage.

Historians credit repeated locust invasions in the nineteenth century with reshaping United States agriculture west of the Mississippi River. Admonished by government entomologists, farmers began to diversify. Wheat had come to nearly monopolize the region, but it was particularly vulnerable to the locusts. In 1873, just before the locusts' most withering offensive, nearly two-thirds of Minnesota farmland was producing wheat; by the invasions' last year, that fraction had dropped to less than one-sixth. Farmers learned that peas and beans were far less vulnerable to the insects, and corn was a more robust grain than wheat. In addition to planting alternative crops, many farmers turned to dairy and beef production. Although pastures were often damaged by the locusts, these lands were almost always left in better shape than the crops were.

For the following question, consider each of the choices separately and select all that apply.

19. According to the passage, before the recommendations by the government entomologists, which of the following was true about farming west of the Mississippi River?
- A Farmers focused primarily on growing wheat.
 - B Peas and beans had not yet been planted in the region.
 - C A relatively small portion of farmland was devoted to crops other than wheat.
20. In the context in which it appears, “robust” (line 8) most nearly means
- A crude
 - B demanding
 - C productive
 - D vigorous
 - E rich

Question 21 is based on the following reading passage.

In 1998 the United States Department of Transportation received nearly 10,000 consumer complaints about airlines; in 1999 it received over 20,000. Moreover, the number of complaints per 100,000 passengers also more than doubled. In both years the vast majority of complaints concerned flight delays, cancellations, mishandled baggage, and customer service. Clearly, therefore, despite the United States airline industry's serious efforts to improve performance in these areas, passenger dissatisfaction with airline service increased significantly in 1999.

21. Which of the following, if true, most seriously weakens the argument?
- (A) Although the percentage of flights that arrived on time dropped slightly overall, from 77 percent in 1998 to 76 percent in 1999, some United States airlines' 1999 on-time rate was actually better than their 1998 on-time rate.
 - (B) The number of passengers flying on United States airlines was significantly higher in 1999 than in 1998.
 - (C) Fewer bags per 1,000 passengers flying on United States airlines were lost or delayed in 1999 than in 1998.
 - (D) The appearance in 1999 of many new Internet sites that relay complaints directly to the Department of Transportation has made filing a complaint about airlines much easier for consumers than ever before.
 - (E) Although the number of consumer complaints increased for every major United States airline in 1999, for some airlines the extent of the increase was substantial, whereas for others it was extremely small.

GO ON TO NEXT PAGE 

Questions 22 to 24 are based on the following reading passage.

Nineteenth-century architect Eugène-Emmanuel Viollet-le-Duc contended that Paris's Notre-Dame cathedral, built primarily in the late twelfth century, was supported from the very beginning by a system of flying buttresses—a series of exterior arches (flyers) and their supports (buttresses)—which permitted the construction of taller vaulted buildings with slimmer walls and interior supports than had been possible previously. Other commentators insist, however, that Notre-Dame did not have flying buttresses until the thirteenth or fourteenth century, when they were added to update the building aesthetically and correct its structural flaws. Although post-twelfth-century modifications and renovations complicate efforts to resolve this controversy—all pre-fifteenth-century flyers have been replaced, and the buttresses have been rebuilt and/or resurfaced—it is nevertheless possible to tell that both the nave and the choir, the church's two major parts, have always had flying buttresses. It is clear, now that nineteenth-century paint and plaster have been removed, that the nave's lower buttresses date from the twelfth century. Moreover, the choir's lower flyers have chevron (zigzag) decoration. Chevron decoration, which was characteristic of the second half of the twelfth century and was out of favor by the fourteenth century, is entirely absent from modifications to the building that can be dated with confidence to the thirteenth century.

22. The passage is primarily concerned with
- (A) tracing the development of a controversy
 - (B) discussing obstacles to resolving a controversy
 - (C) arguing in support of one side in a controversy
 - (D) analyzing the assumptions underlying the claims made in a controversy
 - (E) explaining why evidence relevant to a controversy has been overlooked
23. The claim of the “other commentators” (line 6) suggests that they believe which of the following about Notre-Dame?
- (A) It was the inspiration for many vaulted cathedrals built in the thirteenth and fourteenth centuries.
 - (B) Its design flaws were not apparent until flying buttresses were added in the thirteenth or fourteenth century.
 - (C) Its flying buttresses are embellished with decoration characteristic of the thirteenth and fourteenth centuries.
 - (D) It had been modified in some respects before flying buttresses were added in the thirteenth or fourteenth century.
 - (E) It was originally constructed in an architectural style that was considered outmoded by the thirteenth or fourteenth century.

24. The author's argument concerning Notre-Dame's flying buttresses depends on which of the following assumptions about the choir's lower flyers?
- (A) They accurately reproduce the decoration on the choir's original lower flyers.
 - (B) They have a type of decoration used exclusively for exterior surfaces.
 - (C) They were the models for the choir's original upper flyers.
 - (D) They were the models for the nave's original lower flyers.
 - (E) They were constructed after the nave's flyers were constructed.

Question 25 is based on the following reading passage.

The average temperature of the lobster-rich waters off the coast of Foerkland has been increasing for some years. In warmer water, lobsters grow faster. In particular, lobster larvae take less time to reach the size at which they are no longer vulnerable to predation by young cod, the chief threat to their survival. Consequently, the survival rate of lobster larvae must be going up, and the lobster population in Foerkland's coastal waters is bound to increase.

25. Which of the following, if true, most seriously weakens the argument?
- (A) There are indications that in recent years the fishing fleet operating off the coast of Foerkland has been taking cod at an unsustainably high rate.
 - (B) The increase in water temperatures off Foerkland has not been as pronounced as the increase in average soil temperatures in Foerkland.
 - (C) Because of their speeded-up growth, lobsters now get large enough to be legal catch before they reach reproductive maturity.
 - (D) Even though lobsters grow faster in warmer waters, warmer waters have no effect on the maximum size to which a lobster can eventually grow.
 - (E) Cod are a cold-water species, and the increasing water temperatures have caused a northward shift in Foerkland's cod population.

STOP. This is the end of Section 4.

SECTION 5
Quantitative Reasoning
Time—40 minutes
25 Questions

For each question, indicate the best answer, using the directions given.

Notes: All numbers used are real numbers.

All figures are assumed to lie in a plane unless otherwise indicated.

Geometric figures, such as lines, circles, triangles, and quadrilaterals, **are not necessarily** drawn to scale. That is, you should **not** assume that quantities such as lengths and angle measures are as they appear in a figure. You should assume, however, that lines shown as straight are actually straight, points on a line are in the order shown, and more generally, all geometric objects are in the relative positions shown. For questions with geometric figures, you should base your answers on geometric reasoning, not on estimating or comparing quantities by sight or by measurement.

Coordinate systems, such as xy -planes and number lines, **are** drawn to scale; therefore, you can read, estimate, or compare quantities in such figures by sight or by measurement.

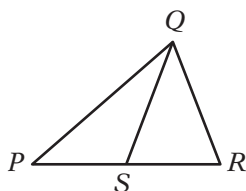
Graphical data presentations, such as bar graphs, circle graphs, and line graphs, **are** drawn to scale; therefore, you can read, estimate, or compare data values by sight or by measurement.

For each of Questions 1 to 9, compare Quantity A and Quantity B, using additional information centered above the two quantities if such information is given. Select one of the following four answer choices and fill in the corresponding oval to the right of the question.

- (A) Quantity A is greater.
- (B) Quantity B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

A symbol that appears more than once in a question has the same meaning throughout the question.

	<u>Quantity A</u>	<u>Quantity B</u>	<u>Correct Answer</u>
Example 1:	(2)(6)	$2 + 6$	<input checked="" type="radio"/> (A) <input type="radio"/> (B) <input type="radio"/> (C) <input type="radio"/> (D)



	<u>Quantity A</u>	<u>Quantity B</u>	<u>Correct Answer</u>
Example 2:	PS	SR	<input type="radio"/> (A) <input type="radio"/> (B) <input type="radio"/> (C) <input checked="" type="radio"/> (D) (since equal lengths cannot be assumed, even though PS and SR appear equal)

- Ⓐ Quantity A is greater.
 Ⓑ Quantity B is greater.
 Ⓒ The two quantities are equal.
 Ⓓ The relationship cannot be determined from the information given.

	<u>Quantity A</u>	<u>Quantity B</u>	
1.	$\frac{3^{-1}}{4^{-1}}$	$\frac{4}{3}$	Ⓐ Ⓑ Ⓒ Ⓓ

$x < 1$ and $x \neq 0$

	<u>Quantity A</u>	<u>Quantity B</u>	
2.	$x^2 + 1$	$x^3 + 1$	Ⓐ Ⓑ Ⓒ Ⓓ

$x > 0$

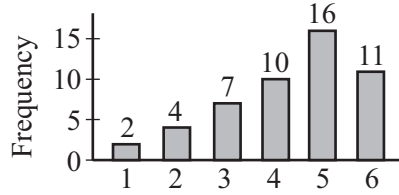
	<u>Quantity A</u>	<u>Quantity B</u>	
3.	0.5% of x	$\frac{1}{2}x$	Ⓐ Ⓑ Ⓒ Ⓓ

The median income of a group of College *C* graduates six months after graduation was \$3,000 higher than the median income of a group of College *D* graduates six months after graduation.

	<u>Quantity A</u>	<u>Quantity B</u>	
4.	The 75th percentile of the incomes of the group of College <i>C</i> graduates six months after graduation	The 75th percentile of the incomes of the group of College <i>D</i> graduates six months after graduation	Ⓐ Ⓑ Ⓒ Ⓓ

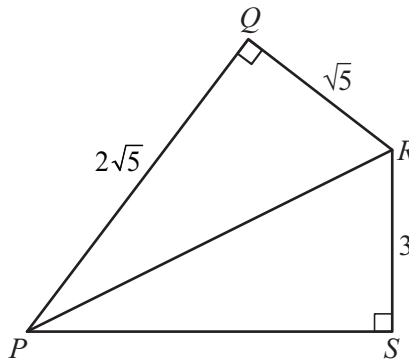
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- (A) Quantity A is greater.
- (B) Quantity B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.



The graph above shows the frequency distribution of 50 integer values varying from 1 to 6.

- | <u>Quantity A</u> | <u>Quantity B</u> | | | | |
|---|-----------------------------|-----|-----|-----|-----|
| 5. The average (arithmetic mean) of the 50 values | The median of the 50 values | (A) | (B) | (C) | (D) |



- | <u>Quantity A</u> | <u>Quantity B</u> | | | | |
|-------------------------------|----------------------------|-----|-----|-----|-----|
| 6. The area of triangle PQR | The area of triangle PSR | (A) | (B) | (C) | (D) |

- | <u>Quantity A</u> | <u>Quantity B</u> | | | | |
|--|--|-----|-----|-----|-----|
| 7. The sum of the odd integers from 1 to 199 | The sum of the even integers from 2 to 198 | (A) | (B) | (C) | (D) |

s and t are positive integers, and $32^s = 2^t$.

- | <u>Quantity A</u> | <u>Quantity B</u> | | | | |
|-------------------|-------------------|-----|-----|-----|-----|
| 8. $\frac{s}{t}$ | $\frac{1}{5}$ | (A) | (B) | (C) | (D) |

- (A) Quantity A is greater.
 (B) Quantity B is greater.
 (C) The two quantities are equal.
 (D) The relationship cannot be determined from the information given.

In a quality-control test, 50 boxes—each containing 30 machine parts—were examined for defective parts. The number of defective parts was recorded for each box, and the average (arithmetic mean) of the 50 recorded numbers of defective parts per box was 1.12. Only one error was made in recording the 50 numbers: “1” defective part in a certain box was incorrectly recorded as “10”.

- | <u>Quantity A</u> | <u>Quantity B</u> | |
|---|-------------------|-----------------|
| 9. The actual average number of defective parts per box | 0.94 | (A) (B) (C) (D) |

Questions 10 to 25 have several different formats. Unless otherwise directed, select a single answer choice. For Numeric Entry questions, follow the instructions below.

Numeric Entry Questions

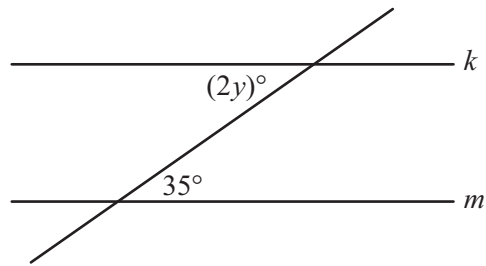
Enter your answer in the answer box(es) below the question.

- Your answer may be an integer, a decimal, or a fraction, and it may be negative.
- If a question asks for a fraction, there will be two boxes—one for the numerator and one for the denominator.
- Equivalent forms of the correct answer, such as 2.5 and 2.50, are all correct. Fractions do not need to be reduced to lowest terms.
- Enter the exact answer unless the question asks you to round your answer.

10. In year Y , the population of Colorado was approximately half that of New Jersey, and the land area of Colorado was approximately 14 times that of New Jersey. The population density (number of persons per unit of land area) of Colorado in year Y was approximately how many times the population density of New Jersey?
- (A) $\frac{1}{28}$
 (B) $\frac{1}{14}$
 (C) $\frac{1}{7}$
 (D) $\frac{1}{4}$
 (E) $\frac{1}{2}$

GO ON TO THE NEXT PAGE

For the following question, enter your answer in the box.



11. In the figure above, line k is parallel to line m . What is the value of y ?

$$y = \boxed{}$$

12. The numbers in data set S have a standard deviation of 5. If a new data set is formed by adding 3 to each number in S , what is the standard deviation of the numbers in the new data set?

- (A) 2
- (B) 3
- (C) 5
- (D) 8
- (E) 15

13. If $\frac{2y-3}{y} = \frac{3-y}{2}$, which of the following could be the value of y ?

- (A) 4
- (B) 1
- (C) -1
- (D) -3
- (E) -5

For the following question, select all the answer choices that apply.

14. List K consists of the numbers -10 , -5 , 0 , 5 , and 10 . Which of the following lists of numbers have the same range as the numbers in list K ?

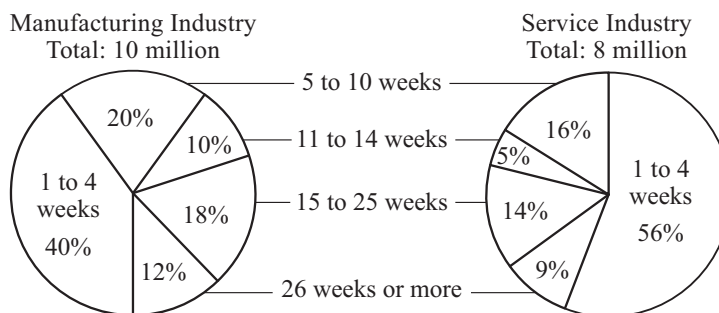
Indicate all such lists.

- (A) -15 , -1 , 0 , 1 , 15
- (B) -7 , -4 , -2 , 1 , 13
- (C) 0 , 1 , 2 , 5 , 8 , 10
- (D) 2 , 3 , 5 , 15 , 19 , 22
- (E) 4 , 5 , 6 , 24

15. Aisha's income in 2004 was 20 percent greater than her income in 2003. What is the ratio of Aisha's income in 2004 to her income in 2003 ?
- (A) 1 to 5
 (B) 5 to 6
 (C) 6 to 5
 (D) 5 to 1
 (E) 20 to 1
16. Jacob's weekly take-home pay is n dollars. Each week he uses $\frac{4n}{5}$ dollars for expenses and saves the rest. At those rates, how many weeks will it take Jacob to save \$500, in terms of n ?
- (A) $\frac{500}{n}$
 (B) $\frac{2,500}{n}$
 (C) $\frac{n}{625}$
 (D) $\frac{n}{2,500}$
 (E) $625n$

Questions 17 to 20 are based on the following data.

LENGTH OF UNEMPLOYMENT FOR WORKERS IN REGION X FOR TWO INDUSTRIES, 2003



Note: The circle graphs show the distributions of workers who were unemployed for at least 1 week in 2003, by length of unemployment, rounded to the nearest week.

17. In the circle graphs, the degree measure of the central angle of the sector representing the number of workers unemployed for 11 to 14 weeks is how much greater in the manufacturing industry graph than in the service industry graph?
- (A) 5°
 (B) 10°
 (C) 15°
 (D) 18°
 (E) 20°

GO ON TO THE NEXT PAGE 

18. Which of the following could be the median length of unemployment, in weeks, for manufacturing industry workers who were unemployed for at least 1 week?
- (A) 4
 - (B) 8
 - (C) 12
 - (D) 16
 - (E) 20
19. If one of the workers in the manufacturing and service industries who were unemployed for at least 1 week will be randomly selected, what is the probability that the person selected will be a service industry worker who was unemployed for 26 weeks or more?
- (A) 0.04
 - (B) 0.09
 - (C) 0.21
 - (D) 0.40
 - (E) 0.90
20. The ratio of the number of manufacturing industry workers who were unemployed for 5 to 10 weeks to the number of service industry workers who were unemployed for 5 to 10 weeks is closest to which of the following?
- (A) 5 to 4
 - (B) 6 to 5
 - (C) 3 to 2
 - (D) 5 to 2
 - (E) 7 to 6

For the following question, select all the answer choices that apply.

21. If $|t+3| > 5$, which of the following could be the value of t ?

Indicate all such values.

- (A) -9
- (B) -6
- (C) -2
- (D) 0
- (E) 2
- (F) 3

22. The operation \otimes is defined for all integers x and y as $x \otimes y = xy - y$. If x and y are positive integers, which of the following CANNOT be zero?
- (A) $x \otimes y$
 - (B) $y \otimes x$
 - (C) $(x - 1) \otimes y$
 - (D) $(x + 1) \otimes y$
 - (E) $x \otimes (y - 1)$
23. P , Q , and R are three points in a plane, and R does not lie on line PQ . Which of the following is true about the set of all points in the plane that are the same distance from all three points?
- (A) It contains no points.
 - (B) It contains one point.
 - (C) It contains two points.
 - (D) It is a line.
 - (E) It is a circle.
24. If $x < y < 0$, which of the following inequalities must be true?
- (A) $y + 1 < x$
 - (B) $y - 1 < x$
 - (C) $xy^2 < x$
 - (D) $xy < y^2$
 - (E) $xy < x^2$

For the following question, enter your answer in the box.

25. What is the length of a diagonal of a rectangle that has width 5 and perimeter 34 ?

STOP. This is the end of Section 5.

SECTION 6
Quantitative Reasoning
Time—40 minutes
25 Questions

For each question, indicate the best answer, using the directions given.

Notes: All numbers used are real numbers.

All figures are assumed to lie in a plane unless otherwise indicated.

Geometric figures, such as lines, circles, triangles, and quadrilaterals, **are not necessarily** drawn to scale. That is, you should **not** assume that quantities such as lengths and angle measures are as they appear in a figure. You should assume, however, that lines shown as straight are actually straight, points on a line are in the order shown, and more generally, all geometric objects are in the relative positions shown. For questions with geometric figures, you should base your answers on geometric reasoning, not on estimating or comparing quantities by sight or by measurement.

Coordinate systems, such as xy -planes and number lines, **are** drawn to scale; therefore, you can read, estimate, or compare quantities in such figures by sight or by measurement.

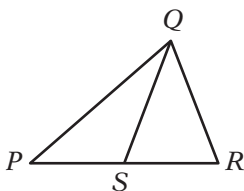
Graphical data presentations, such as bar graphs, circle graphs, and line graphs, **are** drawn to scale; therefore, you can read, estimate, or compare data values by sight or by measurement.

For each of Questions 1 to 9, compare Quantity A and Quantity B, using additional information centered above the two quantities if such information is given. Select one of the following four answer choices and fill in the corresponding oval to the right of the question.

- (A)** Quantity A is greater.
- (B)** Quantity B is greater.
- (C)** The two quantities are equal.
- (D)** The relationship cannot be determined from the information given.

A symbol that appears more than once in a question has the same meaning throughout the question.

	<u>Quantity A</u>	<u>Quantity B</u>	<u>Correct Answer</u>
Example 1:	(2)(6)	2+6	<input checked="" type="radio"/> (A) <input type="radio"/> (B) <input type="radio"/> (C) <input type="radio"/> (D)



	<u>Quantity A</u>	<u>Quantity B</u>	<u>Correct Answer</u>
Example 2:	PS	SR	<input type="radio"/> (A) <input type="radio"/> (B) <input type="radio"/> (C) <input checked="" type="radio"/> (D) (since equal lengths cannot be assumed, even though PS and SR appear equal)

- Ⓐ Quantity A is greater.
 Ⓑ Quantity B is greater.
 Ⓒ The two quantities are equal.
 Ⓓ The relationship cannot be determined from the information given.

A circle is inscribed in a square with sides of length 5.

- | | <u>Quantity A</u> | <u>Quantity B</u> | |
|------------------------------------|-------------------|-------------------|---------|
| 1. The circumference of the circle | | 15 | Ⓐ Ⓑ Ⓒ Ⓓ |
-

$$2u + v = 14$$

$$uv = 0$$

- | | <u>Quantity A</u> | <u>Quantity B</u> | |
|----|-------------------|-------------------|---------|
| 2. | u | v | Ⓐ Ⓑ Ⓒ Ⓓ |
-

- | | <u>Quantity A</u> | <u>Quantity B</u> | |
|----|-------------------|-------------------|---------|
| 3. | $950^{2,000}$ | $10^{6,000}$ | Ⓐ Ⓑ Ⓒ Ⓓ |
-

Set A consists of 40 integers, and set B consists of 150 integers. The number of integers that are in both set A and set B is 20.

- | | <u>Quantity A</u> | <u>Quantity B</u> | |
|--|-------------------|-------------------|---------|
| 4. The total number of integers that are in set A or set B , or both | | 170 | Ⓐ Ⓑ Ⓒ Ⓓ |

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- Ⓐ Quantity A is greater.
 Ⓑ Quantity B is greater.
 Ⓒ The two quantities are equal.
 Ⓓ The relationship cannot be determined from the information given.

x is a negative integer.

	<u>Quantity A</u>	<u>Quantity B</u>	
5.	2^x	3^{x+1}	Ⓐ Ⓑ Ⓒ Ⓓ

$$(x + 3)(y - 4) = 0$$

	<u>Quantity A</u>	<u>Quantity B</u>	
6.	xy	-12	Ⓐ Ⓑ Ⓒ Ⓓ

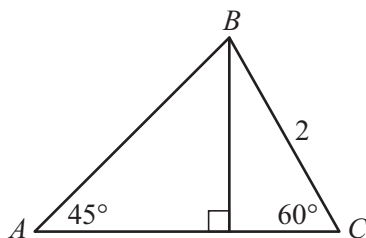
Geoff used \$630 to buy a new guitar. This amount was 15 percent of his earnings last summer.

	<u>Quantity A</u>	<u>Quantity B</u>	
7.	The amount of Geoff's earnings last summer <u>not</u> used to buy the new guitar	$\$3,570$	Ⓐ Ⓑ Ⓒ Ⓓ

Set S consists of 5 objects.

	<u>Quantity A</u>	<u>Quantity B</u>	
8.	The number of subsets of set S that consist of 1 object	The number of subsets of set S that consist of 4 objects	Ⓐ Ⓑ Ⓒ Ⓓ

- Ⓐ Quantity A is greater.
 Ⓑ Quantity B is greater.
 Ⓒ The two quantities are equal.
 Ⓓ The relationship cannot be determined from the information given.



Quantity A

Quantity B

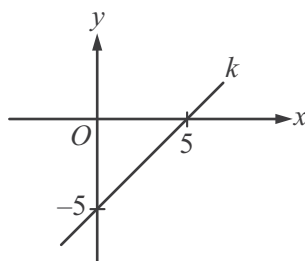
9. The length of line segment AC 3 Ⓐ Ⓑ Ⓒ Ⓓ

Questions 10 to 25 have several different formats. Unless otherwise directed, select a single answer choice. For Numeric Entry questions, follow the instructions below.

Numeric Entry Questions

Enter your answer in the answer box(es) below the question.

- Your answer may be an integer, a decimal, or a fraction, and it may be negative.
- If a question asks for a fraction, there will be two boxes—one for the numerator and one for the denominator.
- Equivalent forms of the correct answer, such as 2.5 and 2.50, are all correct. Fractions do not need to be reduced to lowest terms.
- Enter the exact answer unless the question asks you to round your answer.



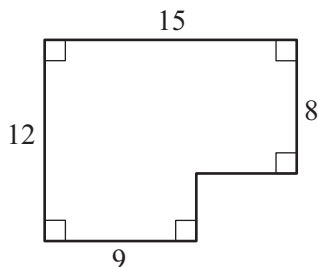
10. What is the slope of line k in the xy -plane above?
- Ⓐ -5
 Ⓑ -1
 Ⓒ 0
 Ⓓ 1
 Ⓔ 5

GO ON TO THE NEXT PAGE

$$b - 3, b - 1, b + 2, b + 3, b + 4$$

11. The median of the five terms listed above is 5, where b is a constant. What is the average (arithmetic mean) of the five terms?
- (A) 3
 (B) 4
 (C) 5
 (D) 6
 (E) 7

For the following question, enter your answer in the box.



12. What is the area of the region shown above?

13. During a one-year study, biologists observed the number of fish in a certain pond as well as the percent of the fish that were catfish. At the beginning of the year, there were 300 fish in the pond, of which 15 percent were catfish; and at the end of the year, there were 400 fish in the pond, of which 10 percent were catfish. From the beginning of the year to the end of the year, the number of catfish in the pond
- (A) decreased by more than 5%
 (B) decreased by 5%
 (C) did not change
 (D) increased by 5%
 (E) increased by more than 5%

For the following question, enter your answer in the box.

14. On a radio tower, a red light flashes every 6 seconds and a blue light flashes every 10 seconds. If both lights flash together at a certain time, how many seconds later will both lights flash together the next time?

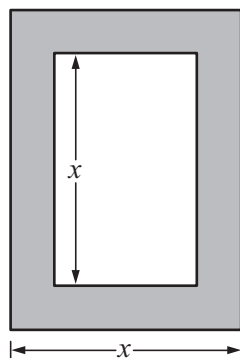
 seconds

For the following question, select all the answer choices that apply.

15. If $a < b < 0$, which of the following numbers must be positive?

Indicate all such numbers.

- A $a - b$
- B $a^2 - b^2$
- C ab
- D a^2b
- E $a^2b + ab^2$



16. A flat rectangular picture, represented by the unshaded region in the figure above, is mounted in a flat rectangular frame, represented by the shaded region. The frame is 1 inch wide on all sides. For what value of x , in inches, is the area of the frame equal to the area of the picture?

- A 4
- B 5
- C 6
- D 7
- E 8

GO ON TO THE NEXT PAGE 

Questions 17 to 20 are based on the following data.

PERCENT OF THE 300 PEOPLE IN GROUP 1 AND THE 400 PEOPLE IN GROUP 2 WHO HAVE SELECTED AILMENTS

Respiratory Ailment	Percent of People in Group 1 Who Have Ailment	Percent of People in Group 2 Who Have Ailment
Allergic sensitivity to endotoxins	14%	21%
Asthma (allergic)	3%	4%
Asthma (nonallergic)	2%	3%
Hay fever	4%	10%
Sneezing and itchy eyes	8%	11%
Wheezing (allergic)	5%	6%
Wheezing (nonallergic)	2%	5%

17. The number of people in group 2 who have hay fever is how much greater than the number of people in group 1 who have hay fever?
- (A) 37
 (B) 35
 (C) 32
 (D) 28
 (E) 24
18. For the seven ailments, what is the median of the numbers of people in group 2 who have the ailments?
- (A) 20
 (B) 22
 (C) 24
 (D) 26
 (E) 28
19. The number of people in group 1 who have the ailment wheezing (allergic) is what percent greater than the number of people in group 1 who have the ailment wheezing (nonallergic)?
- (A) 50%
 (B) 75%
 (C) 150%
 (D) 200%
 (E) 300%

For the following question, enter your answer in the boxes.

20. What is the ratio of the number of people in group 2 with the ailment sneezing and itchy eyes to the total number of people in both groups with the ailment sneezing and itchy eyes?

Give your answer as a fraction.

21. Of the people in a certain survey, 58 percent were at most 40 years old and 70 percent were at most 60 years old. If 252 of the people in the survey were more than 40 years old and at most 60 years old, what was the total number of people in the survey?
- (A) 1,900
(B) 2,100
(C) 2,400
(D) 2,700
(E) 3,000
22. If $x > 0$, which of the following is equal to 1.25 percent of x ?
- (A) $\frac{x}{80}$
(B) $\frac{x}{8}$
(C) $\frac{x}{4}$
(D) $\frac{5x}{8}$
(E) $\frac{3x}{4}$
23. Alice earns d dollars and has t percent of what she earns deducted for taxes. How much of what she earns does Alice have left after taxes?
- (A) $d(1 - 100t)$ dollars
(B) $d(1 - 10t)$ dollars
(C) $d(1 - t)$ dollars
(D) $d(1 - 0.1t)$ dollars
(E) $d(1 - 0.01t)$ dollars

GO ON TO THE NEXT PAGE 

For the following question, select all the answer choices that apply.

24. A student made a conjecture that for any integer n , the integer $4n + 3$ is a prime number. Which of the following values of n could be used to disprove the student's conjecture?

Indicate all such values.

- A 1
- B 3
- C 4
- D 6
- E 7

25. Eight points are equally spaced on a circle. If 4 of the 8 points are to be chosen at random, what is the probability that a quadrilateral having the 4 points chosen as vertices will be a square?

- A $\frac{1}{70}$
- B $\frac{1}{35}$
- C $\frac{1}{7}$
- D $\frac{1}{4}$
- E $\frac{1}{2}$

STOP. This is the end of Section 6.

Answer Key

Section 3. Verbal Reasoning

<i>Question Number</i>	<i>P+</i>	<i>Correct Answer</i>
1	71	Choice A: innocuous
2	68	Choice C: banished from
3	41	Choice C: comprehensive; Choice D: redundant
4	74	Choice B: heed; Choice F: compromise
5	71	Choice C: flawlessness; Choice D: wrong
6	55	Choice B: problematic; Choice E: unsound; Choice H: discredited
7	28	Choice A: imminent; Choice F: curtailed; Choice G: encouraging
8	38	Choice A: row; Choice F: festering dispute over
9	74	Choice B: The shape of the teeth indicates that sauropods were herbivorous.
10	54	Choice A: They are among the few fossils incorporating direct evidence of sauropod behavior.
11	66	Choice C: argue against a particular position regarding sleep's role in memory
12	60	Choice A: There are some memory-consolidation processes that have nothing to do with sleep.
13	73	Choice E: It concedes that the consolidation of declarative memory does not depend entirely on one factor.
14	60	Choice B: identifies a specific function that sleep plays in the memory-consolidation process
15	74	Choice A: eliminated AND Choice C: put to rest
16	41	Choice D: disagreement AND Choice E: divergence
17	27	Choice A: reined in AND Choice E: manacled
18	45	Choice A: bridling AND Choice D: inhibiting
19	56	Choice A: disaffection with AND Choice F: estrangement from
20	42	Choice B: If a planet's orbit is disturbed, the planet can be drawn by gravity toward the star it is orbiting.
21	35	Choice A: In the last five years, there has been no decline in the number of workplace injuries leading to immediate admission to a hospital emergency room.
22	51	Choice B: The possibility that the title page of a work may attribute works written by other authors to the author of that work AND Choice C: The possibility that the author's name printed on a title page is fictitious
23	83	Choice A: The title page was prepared for printing in a hurried manner. AND Choice B: Material on the title page was included without the author's knowledge or approval.
24	37	Choice B: nuances
25	78	Choice C: It can allow the reader to discern in a work certain meanings that the writer did not foresee.

Answer Key

Section 4. Verbal Reasoning

<i>Question Number</i>	<i>P+</i>	<i>Correct Answer</i>
1	72	Choice D: frustrating
2	50	Choice C: venal
3	80	Choice D: adequate to
4	59	Choice E: superfluous
5	48	Choice A: sham; Choice D: cloak
6	61	Choice B: habit; Choice E: ploddingly
7	41	Choice B: different in its effect; Choice F: entails; Choice G: permanent
8	40	Choice C: collision; Choice E: orthodox; Choice G: clerical
9	74	Choice C: presenting evidence to challenge an explanation and offering an alternative explanation
10	84	Choice E: A half century of drought and falling groundwater levels caused a certain population to abandon their settlements along a riverbank.
11	68	Choice D: local climatic variation in the environment of the southwestern United States
12	48	Choice C: Moving a village because groundwater levels have changed over the last generation
13	69	Choice A: It is similar in appearance to perennial ice. AND Choice C: It tastes saltier than perennial ice.
14	93	Choice E: small
15	56	Choice B: ecstatic AND Choice E: euphoric
16	75	Choice A: favor AND Choice B: aid
17	53	Choice B: astounding AND Choice E: stunning
18	59	Choice D: humdrum AND Choice F: dull
19	66	Choice A: Farmers focused primarily on growing wheat. AND Choice C: A relatively small portion of farmland was devoted to crops other than wheat.
20	44	Choice D: vigorous
21	55	Choice D: The appearance in 1999 of many new Internet sites that relay complaints directly to the Department of Transportation has made filing a complaint about airlines much easier for consumers than ever before.
22	46	Choice C: arguing in support of one side in a controversy
23	42	Choice E: It was originally constructed in an architectural style that was considered outmoded by the thirteenth or fourteenth century.
24	40	Choice A: They accurately reproduce the decoration on the choir's original lower flyers.
25	57	Choice C: Because of their speeded-up growth, lobsters now get large enough to be legal catch before they reach reproductive maturity.

Answer Key

Section 5. Quantitative Reasoning

<i>Question Number</i>	<i>P+</i>	<i>Correct Answer</i>
1	63	Choice C: The two quantities are equal.
2	80	Choice A: Quantity A is greater.
3	63	Choice B: Quantity B is greater.
4	45	Choice D: The relationship cannot be determined from the information given.
5	67	Choice B: Quantity B is greater.
6	73	Choice B: Quantity B is greater.
7	48	Choice A: Quantity A is greater.
8	59	Choice C: The two quantities are equal.
9	35	Choice C: The two quantities are equal.
10	60	Choice A: $\frac{1}{28}$
11	84	17.5
12	54	Choice C: 5
13	76	Choice D: -3
14	65	Choice B: -7, -4, -2, 1, 13 AND Choice D: 2, 3, 5, 15, 19, 22 AND Choice E: 4, 5, 6, 24
15	66	Choice C: 6 to 5
16	51	Choice B: $\frac{2,500}{n}$
17	51	Choice D: 18°
18	49	Choice B: 8
19	51	Choice A: 0.04
20	45	Choice C: 3 to 2
21	69	Choice A: -9 AND Choice F: 3
22	42	Choice D: $(x + 1) \otimes y$
23	41	Choice B: It contains one point.
24	40	Choice E: $xy < x^2$
25	62	13

Answer Key

Section 6. Quantitative Reasoning

<i>Question Number</i>	<i>P+</i>	<i>Correct Answer</i>
1	73	Choice A: Quantity A is greater.
2	69	Choice D: The relationship cannot be determined from the information given.
3	64	Choice B: Quantity B is greater.
4	41	Choice C: The two quantities are equal.
5	36	Choice D: The relationship cannot be determined from the information given.
6	42	Choice D: The relationship cannot be determined from the information given.
7	72	Choice C: The two quantities are equal.
8	28	Choice C: The two quantities are equal.
9	36	Choice B: Quantity B is greater.
10	69	Choice D: 1
11	69	Choice B: 4
12	78	156
13	66	Choice A: decreased by more than 5%
14	72	30
15	58	Choice B: $a^2 - b^2$ AND Choice C: ab
16	46	Choice C: 6
17	90	Choice D: 28
18	82	Choice C: 24
19	56	Choice C: 150%
20	66	$\frac{44}{68}$ (or any equivalent fraction)
21	58	Choice B: 2,100
22	45	Choice A: $\frac{x}{80}$
23	37	Choice E: $d(1 - 0.01t)$ dollars
24	53	Choice B: 03 AND Choice D: 6
25	32	Choice B: $\frac{1}{35}$