



GRADUATE RECORD EXAMINATIONS®

## General Test

You will have 3 hours and 30 minutes to work on this test, which consists of two writing tasks and four multiple-choice sections. During the time allowed for one section, you may work **only** on that section. The time allowed for each section is printed at the top of the first page of the section.



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**GO ON TO THE NEXT PAGE.**

SECTION 1  
Analytical Writing  
Time—30 minutes

ANALYZE AN ISSUE

You have 30 minutes to plan and compose a response to the issue below. 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.

The best way for a society to prepare its young people for leadership in government, industry, or other fields is by instilling in them a sense of cooperation, not competition.

Write a response in which you discuss the extent to which you agree or disagree with the claim. In developing and supporting your position, be sure to address the most compelling reasons and/or examples that could be used to challenge your position.

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. **Use the next page to plan your response, then write your response starting on the first lined page that follows. A total of four lined pages are provided for 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.

Write your response within the boxed area on the pages provided. **Any text outside the boxed area will not be scored.**

**1 1 1 1 1 1 1 1 1 1 1**

**Plan your response below. When you are ready to begin writing your essay, turn to the next page.**

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**ANALYZE AN ISSUE RESPONSE (Page 4 of 4)**

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**S T O P**

**If you finish before time is called, you may check your work on this section only.**

**SECTION 2**  
**Analytical Writing**  
**Time—30 minutes**

**ANALYZE AN ARGUMENT**

You have 30 minutes to plan and compose a response in which you evaluate the argument passage that appears below. A response to any other argument will receive a score of zero. Make sure that you respond according to the specific instructions and support your evaluation with relevant reasons and/or examples.

**Note that you are NOT being asked to present your own views on the subject.**

The following is taken from a memo from the advertising director of the Super Screen Movie Production Company.

“According to a recent report from our marketing department, during the past year, fewer people attended Super Screen-produced movies than in any other year. And yet the percentage of positive reviews by movie reviewers about specific Super Screen movies actually increased during the past year. Clearly, the contents of these reviews are not reaching enough of our prospective viewers. Thus, the problem lies not with the quality of our movies but with the public’s lack of awareness that movies of good quality are available. Super Screen should therefore allocate a greater share of its budget next year to reaching the public through advertising.”

Write a response in which you discuss what questions would need to be answered in order to decide whether the recommendation and the argument on which it is based are reasonable. Be sure to explain how the answers to these questions would help to evaluate the recommendation.

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. **Use the next page to plan your response, then write your response starting on the first lined page that follows. A total of four lined pages are provided for 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.

Write your response within the boxed area on the pages provided. **Any text outside the boxed area will not be scored.**



**Plan your response below. When you are ready to begin writing your essay, turn to the next page.**

**GO ON TO THE NEXT PAGE.**







**ANALYZE AN ARGUMENT RESPONSE (Page 4 of 4)**

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**S T O P**

**If you finish before time is called, you may check your work on this section only.**

# Instructions for Verbal Reasoning and Quantitative Reasoning Sections

## Important Notes

Your scores for these sections will be determined by the number of questions you answer correctly. Nothing is subtracted from a score if you answer a question incorrectly. Therefore, to maximize your scores it is better for you to guess at an answer than not to respond at all. Work as rapidly as you can without losing accuracy. Do not spend too much time on questions that are too difficult for you. Go on to the other questions and come back to the difficult ones later.

Some or all of the passages in this test have been adapted from published material to provide the examinee with significant problems for analysis and evaluation. To make the passages suitable for testing purposes, the style, content, or point of view of the original may have been altered. The ideas contained in the passages do not necessarily represent the opinions of the Graduate Record Examinations Board or Educational Testing Service.

You may use a calculator in the Quantitative Reasoning sections only. You will be provided with a calculator and cannot use any other calculator.

## Marking Your Answers

All answers must be marked in this test book. When filling in the circles that accompany each question, BE SURE THAT EACH MARK IS DARK AND COMPLETELY FILLS THE CIRCLE.

<u>Correct</u>		<u>Incorrect</u>		
<input type="radio"/> A	<input checked="" type="radio"/> A	<input type="radio"/> A	<input type="radio"/> A	<input type="radio"/> A
<input type="radio"/> B	<input type="radio"/> B	<input checked="" type="radio"/> B	<input type="radio"/> B	<input type="radio"/> B
<input type="radio"/> C	<input type="radio"/> C	<input type="radio"/> C	<input type="radio"/> C	<input checked="" type="radio"/> C
<input type="radio"/> D	<input type="radio"/> D	<input type="radio"/> D	<input checked="" type="radio"/> D	<input type="radio"/> D

Be careful to erase any stray marks that lie in or near a circle. If you change an answer, be sure that all previous marks are erased completely. Stray marks and incomplete erasures may be read as intended answers. Scratch paper will not be provided. You may work out your answers in the blank areas of the test book, but do not work out answers near the circles.

## Question Formats

The questions in these sections have several different formats. A brief description of these formats and instructions for entering your answer choices are given below.

### **Multiple-choice Questions—Select One Answer Choice**

These standard multiple-choice questions require you to select just one answer choice from a list of options. You will receive credit only if you mark the **single** correct answer choice and no other.

**Example:** What city is the capital of France?

- A Rome
- B Paris
- C London
- D Cairo

**Multiple-choice Questions—Select One or More Answer Choices**

Some of these questions specify how many answer choices to select; others require you to select all that apply. In either case, to receive credit you must mark all of the correct answer choices and no others. These questions are distinguished by the use of a square box.

**Example:** Select all that apply.

Which of the following countries are in Africa?

- Chad
- China
- France
- Kenya

**Column Format Questions**

This question type presents the answer choices in columns. You must select one answer choice from each column. You will receive credit only if you mark the correct answer choice **in each column**.

**Example:** Complete the following sentence.

(i) \_\_\_\_\_ is the capital of (ii) \_\_\_\_\_ .

Blank (i)

- |   |
|---|
| <ul style="list-style-type: none"><li><input checked="" type="radio"/> Paris</li><li><input type="radio"/> Rome</li><li><input type="radio"/> Cairo</li></ul> |
|---|

Blank (ii)

- |  |
|--|
| <ul style="list-style-type: none"><li><input type="radio"/> Canada</li><li><input checked="" type="radio"/> France</li><li><input type="radio"/> China</li></ul> |
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**Numeric Entry Questions**

To answer these questions, enter a number by filling in circles in a grid. Complete instructions for doing so will be found in the Quantitative Reasoning sections.

SECTION 3  
Verbal Reasoning  
Time—35 minutes  
25 Questions

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

For each of 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. Many find it strange that her writing is thought to be tortuous; her recent essays, although longer than most of her earlier essays, are extremely \_\_\_\_\_.

(A) painstaking  
(B) tedious  
(C) insightful  
(D) sophisticated  
(E) clear

3. The author presents the life of Zane Grey with \_\_\_\_\_ unusual in a biographer: he is not even convinced that Grey was a good writer.

(A) a zeal  
(B) a deftness  
(C) a detachment  
(D) an eloquence  
(E) an imaginativeness

2. Most spacecraft are still at little risk of collision with space debris during their operational lifetimes, but given the numbers of new satellites launched each year, the orbital environment in the future is likely to be less \_\_\_\_\_.

(A) crowded  
(B) invulnerable  
(C) protected  
(D) polluted  
(E) benign



4. The unironic representation of objects from everyday life is (i) \_\_\_\_\_ serious American art of the twentieth century: “high” artists ceded the straightforward depiction of the (ii) \_\_\_\_\_ to illustrators, advertisers, and packaging designers.

Blank (i)

- (A) missing from
- (B) valued in
- (C) crucial to

Blank (ii)

- (D) beautiful
- (E) commonplace
- (F) complex

5. A newly published, laudatory biography of George Bernard Shaw fails, like others before it, to capture the essence of his personality: the more he is (i) \_\_\_\_\_, the more his true self seems to (ii) \_\_\_\_\_.

Blank (i)

- (A) discussed
- (B) disparaged
- (C) disregarded

Blank (ii)

- (D) disappear
- (E) emerge
- (F) coalesce

6. Although he has long had a reputation for (i) \_\_\_\_\_, his behavior toward his coworkers has always been (ii) \_\_\_\_\_, suggesting he may not be as insolent as people generally think.

Blank (i)

- (A) inscrutability
- (B) venality
- (C) impudence

Blank (ii)

- (D) brazen
- (E) courteous
- (F) predictable

7. There is nothing that (i) \_\_\_\_\_ scientists more than having an old problem in their field solved by someone from outside. If you doubt this (ii) \_\_\_\_\_, just think about the (iii) \_\_\_\_\_ reaction of paleontologists to the hypothesis of Luis Alvarez—a physicist—and Walter Alvarez—a geologist—that the extinction of the dinosaurs was caused by the impact of a large meteor on the surface of the planet.

Blank (i)

- (A) amazes  
(B) pleases  
(C) nettles

Blank (ii)

- (D) exposition  
(E) objurgation  
(F) observation

Blank (iii)

- (G) contemptuous  
(H) indifferent  
(I) insincere

8. If one could don magic spectacles—with lenses that make the murky depths of the ocean become transparent—and look back several centuries to an age before widespread abuse of the oceans began, even the most (i) \_\_\_\_\_ observer would quickly discover that fish were formerly much more abundant. Likewise, many now-depleted species of marine mammals would appear (ii) \_\_\_\_\_. But without such special glasses, the differences between past and present oceans are indeed hard to (iii) \_\_\_\_\_.

Blank (i)

- (A) casual  
(B) prescient  
(C) clearheaded

Blank (ii)

- (D) threatened  
(E) plentiful  
(F) unfamiliar

Blank (iii)

- (G) ignore  
(H) discern  
(I) dismiss

For each of Questions 9 to 14, select one answer choice unless otherwise directed.

Questions 9 to 11 are based on this passage.

Historian F. W. Maitland observed that legal documents are the best—indeed, often the only—available evidence about the economic and social history of a given period. Why, then, has it taken so long for historians to focus systematically on the civil (noncriminal) law of early modern (sixteenth- to eighteenth-century) England? Maitland offered one reason: the subject requires researchers to “master an extremely formal system of pleading and procedure.” Yet the complexities that confront those who would study such materials are not wholly different from those recently surmounted by historians of criminal law in England during the same period. Another possible explanation for historians’ neglect of the subject is their widespread assumption that most people in early modern England had little contact with civil law. If that were so, the history of legal matters would be of little relevance to general historical scholarship. But recent research suggests that civil litigation during the period involved artisans, merchants, professionals, shopkeepers, and farmers, and not merely a narrow, propertied, male elite. Moreover, the later sixteenth and early seventeenth centuries saw an extraordinary explosion in civil litigation by both women and men, making this the most litigious era in English history on a per capita basis.

9. The passage suggests that the history of criminal law in early modern England differs from the history of civil law during that same period in that the history of criminal law
- (A) is of more intellectual interest to historians and their readers
  - (B) has been studied more thoroughly by historians
  - (C) is more relevant to general social history
  - (D) involves the study of a larger proportion of the population
  - (E) does not require the mastery of an extremely formal system of procedures

10. The author of the passage mentions the occupations of those involved in civil litigation in early modern England most likely in order to
- (A) suggest that most historians’ assumptions about the participants in the civil legal system during that period are probably correct
  - (B) support the theory that more people participated in the civil legal system than the criminal legal system in England during that period
  - (C) counter the claim that legal issues reveal more about a country’s ordinary citizens than about its elite
  - (D) illustrate the wide range of people who used the civil legal system in England during that period
  - (E) suggest that recent data on people who participated in early modern England’s legal system may not be correct
11. The author of the passage suggests which of the following about the “widespread assumption” (line 15)?
- (A) Because it is true, the history of civil law is of as much interest to historians focusing on general social history as to those specializing in legal history.
  - (B) Because it is inaccurate, the history of civil law in early modern England should enrich the general historical scholarship of that period.
  - (C) It is based on inaccurate data about the propertied male elite of early modern England.
  - (D) It does not provide a plausible explanation for historians’ failure to study the civil law of early modern England.
  - (E) It is based on an analogy with criminal law in early modern England.

Questions 12 and 13 are based on this passage.

Geese can often be seen grazing in coastal salt marshes. Unfortunately, their intense grazing removes the grassy covering, exposing marsh sediment; this increases evaporation, which in turn increases salt concentration in marsh sediments. Because of this increased concentration, regrowth of plants is minimal, leading to increased erosion, which leads to a decrease in the fertile topsoil, leading to even less regrowth. In time, the salt marsh becomes a mudflat. This process challenges one of the most widely held beliefs about the dynamics of salt-marsh ecosystems: supposedly, consumers such as geese do not play a large role in controlling the productivity of marsh systems. Rather, the standard view claims, marshes are controlled by bottom-up factors, such as nutrients and physical factors.

Line

5

10

15

12. The author discusses “the standard view” (line 14) most likely in order to identify a view that
- (A) explains the occurrence of the chain of events described in the passage
  - (B) provides a summary of the chain of events described in the passage
  - (C) is called into question by the chain of events described in the passage
  - (D) advocates reassessment of the widely held belief described in the passage
  - (E) is undermined by the widely held belief described in the passage
13. According to the passage, which of the following is a widely held belief about geese?
- (A) They are not often seen grazing in coastal salt marshes.
  - (B) They are not the primary consumers in salt-marsh ecosystems.
  - (C) They play only a minor role in the productivity of salt-marsh ecosystems.
  - (D) They are the primary determinants of which resources will thrive in coastal salt marshes.
  - (E) They control the productivity of salt-marsh ecosystems through a bottom-up process.

Question 14 is based on this passage.

*Newspaper Editorial*

Last year, Mayor Stephens established a special law-enforcement task force with the avowed mission of eradicating corruption in city government. The mayor's handpicked task force has now begun  
 Line 5 prosecuting a dozen city officials. Since all of these officials were appointed by Mayor Bixby, Mayor Stephens' predecessor and longtime political foe, it is clear that those being prosecuted have been targeted because of their political affiliations.

14. Which of the following, if true, most weakens the editorial's argument?

- (A) Complaints of official corruption in city government have decreased since the anticorruption task force began operating.
- (B) Former mayor Bixby did not publicly oppose Mayor Stephens' establishment of the anticorruption task force.
- (C) Almost all of the officials who have served in city government for any length of time are appointees of Mayor Bixby.
- (D) All of the members of the anticorruption task force had other jobs in city government before the task force was formed.
- (E) During the last mayoral election campaign, then-Mayor Bixby hotly disputed the current mayor's claim that there was widespread corruption in city government.

For each of 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. The slower-learning monkeys searched \_\_\_\_\_ but unintelligently: although they worked closely together, they checked only the most obvious hiding places.
- (A) competitively
  - (B) impulsively
  - (C) cooperatively
  - (D) deviously
  - (E) craftily
  - (F) harmoniously
16. By about age eight, children's phonetic capacities are fully developed but still \_\_\_\_\_; thus children at that age can learn to speak a new language with a native speaker's accent.
- (A) plastic
  - (B) vestigial
  - (C) inarticulate
  - (D) unformed
  - (E) nascent
  - (F) malleable

17. In medieval philosophy every physical phenomenon is presumed to have some determinate cause, leaving no place for \_\_\_\_\_ in the explanation of particular events.
- (A) happenstance
  - (B) chance
  - (C) error
  - (D) experience
  - (E) context
  - (F) miscalculation
18. Although the film is rightly judged imperfect by most of today's critics, the films being created today are \_\_\_\_\_ it, since its release in 1940 provoked sufficient critical discussion to enhance the intellectual respectability of cinema considerably.
- (A) beholden to
  - (B) indebted to
  - (C) derivative of
  - (D) based on
  - (E) distinguishable from
  - (F) biased against
19. The detective's conviction that there were few inept crimes in her district led her to impute some degree of \_\_\_\_\_ to every suspect she studied.
- (A) deceit
  - (B) acumen
  - (C) duplicity
  - (D) shrewdness
  - (E) evasiveness
  - (F) equivocation

For each of Questions 20 to 25, select one answer choice unless otherwise directed.

Questions 20 to 22 are based on this passage.

The decrease in responsiveness that follows continuous stimulation (adaptation) is common to all sensory systems, including olfaction. With continued exposure to chronically present ambient odors, individuals' perception of odor intensity is greatly reduced. Moreover, these perceptual changes can be profound and durable. It is commonly reported that following extended absences from the odorous environment, reexposure may still fail to elicit perception at the original intensity.

Most research on olfactory adaptation examines relatively transient changes in stimulus detection or perceived intensity—rarely exceeding several hours and often less—but because olfactory adaptation can be produced with relatively short exposures, these durations are sufficient for investigating many parameters of the phenomenon. However, exposures to odors in natural environments often occur over far longer periods, and the resulting adaptations may differ qualitatively from short-term olfactory adaptation. For example, studies show that even brief periods of odorant stimulation produce transient reductions in receptors in the olfactory epithelium, a process termed “receptor fatigue.” Prolonged odor stimulation, however, could produce more long-lasting reductions in response, possibly involving structures higher in the central nervous system pathway.

20. According to the passage, the phenomenon of olfactory adaptation may cause individuals who are reexposed to an odorous environment after an extended absence to
- (A) experience a heightened perception of the odor
  - (B) perceive the odor as being less intense than it was upon first exposure
  - (C) return to their original level of perception of the odor
  - (D) exhibit a decreased tolerance for the odorous environment
  - (E) experience the phenomenon of adaptation in other sensory systems

21. The passage asserts which of the following about the exposures involved in the “research on olfactory adaptation” (line 11)?
- Ⓐ The exposures are of long enough duration for researchers to investigate many aspects of olfactory adaptation.
  - Ⓑ The exposures have rarely consisted of reexposures following extended absences from the odorous environment.
  - Ⓒ The exposures are intended to reproduce the relatively transient olfactory changes typical of exposures to odors in natural environments.
  - Ⓓ Those exposures of relatively short duration are often insufficient to produce the phenomenon of receptor fatigue in study subjects.
  - Ⓔ Those exposures lasting several hours produce reductions in receptors in the olfactory epithelium that are similar to the reductions caused by prolonged odor stimulation.
22. The author of the passage discusses “receptor fatigue” (line 24) primarily in order to
- Ⓐ explain the physiological process through which long-lasting reductions in response are thought to be produced
  - Ⓑ provide an example of a process that subjects would probably not experience during a prolonged period of odorant stimulation
  - Ⓒ help illustrate how the information gathered from most olfactory research may not be sufficient to describe the effects of extended exposures to odors
  - Ⓓ show how studies of short-term olfactory adaptation have only accounted for the reductions in response that follow relatively brief absences from an odorous environment
  - Ⓔ qualify a statement about the severity and duration of the perceptual changes caused by exposure to chronically present ambient odors



Questions 23 and 24 are based on this passage.

Line Among academics involved in the study of  
 5 Northern Renaissance prints (reproducible graphic  
 artworks), an orthodox position can be said to have  
 emerged. This position regards Renaissance prints as  
 passive representations of their time—documents that  
 reliably record contemporary events, opinions, and  
 beliefs—and therefore as an important means of  
 accessing the popular contemporary consciousness.  
 10 In contrast, pioneering studies such as those by  
 Scribner and Moxey take a strikingly different  
 approach, according to which Northern Renaissance  
 prints were purposeful, active, and important shaping  
 forces in the communities that produced them.  
 15 Scribner, for example, contends that religious and  
 political prints of the German Reformation  
 (ca. 1517–1555) functioned as popular propaganda:  
 tools in a vigorous campaign aimed at altering  
 people’s behavior, attitudes, and beliefs.

Consider each of the choices separately and select **all** that apply.

23. The passage suggests that an adherent to the “orthodox position” (line 3) would agree with which of the following statements?
- (A) Northern Renaissance prints should be regarded as passive representations of their time.
- (B) Northern Renaissance prints were part of a campaign aimed at altering contemporary thinking.
- (C) Northern Renaissance prints provide reliable records of contemporary events, opinions, and beliefs.
24. Replacement of the word “passive” (line 5) with which of the following words results in the least change in meaning for the passage?
- (A) disinterested
- (B) submissive
- (C) flaccid
- (D) supine
- (E) unreceptive

Question 25 is based on this passage.

Line Recently an unusually high number of dolphins  
have been found dead of infectious diseases, and  
most of these had abnormally high tissue  
5 concentrations of certain compounds that, even in  
low concentrations, reduce dolphins' resistance to  
infection. The only source of these compounds in the  
dolphins' environment is boat paint. Therefore, since  
dolphins rid their bodies of the compounds rapidly  
once exposure ceases, their mortality rate should  
decline rapidly if such boat paints are banned.

25. Which of the following, if true, most strengthens the argument?
- (A) The levels of the compounds typically used in boat paints today are lower than they were in boat paints manufactured a decade ago.
  - (B) In high concentrations, the compounds are toxic to many types of marine animals.
  - (C) The compounds break down into harmless substances after a few months of exposure to water or air.
  - (D) High tissue levels of the compounds have recently been found in some marine animals, but there is no record of any of those animals dying in unusually large numbers recently.
  - (E) The compounds do not leach out of the boat paint if the paint is applied exactly in accordance with the manufacturer's directions.

**S T O P**

If you finish before time is called, you may check your work on this section only.



SECTION 4  
Verbal Reasoning  
Time—35 minutes  
25 Questions

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

For each of 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. This filmmaker is not outspoken on political matters: her films are known for their aesthetic qualities rather than for their \_\_\_\_\_ ones.

- (A) polemical
- (B) cinematic
- (C) narrative
- (D) commercial
- (E) dramatic

2. James Boswell's *Life of Samuel Johnson* is generally thought to have established Boswell as the first great modern biographer; yet the claim of \_\_\_\_\_ could be made for Johnson himself as author of a life of Richard Savage.

- (A) partisanship
- (B) omniscience
- (C) precedence
- (D) opportunism
- (E) perseverance



3. Critics charge that the regulatory agency, having never defined what constitutes an untenable risk, has grown (i) \_\_\_\_\_ outside influences on that issue: several experts have (ii) \_\_\_\_\_ it recently for allowing one power plant to delay an inspection for more than six weeks despite compelling safety concerns.

Blank (i)

- (A) susceptible to
- (B) unaware of
- (C) irritated at

Blank (ii)

- (D) complimented
- (E) panned
- (F) overlooked

4. Television promotes (i) \_\_\_\_\_ of emotion in viewers through an unnatural evocation, every five minutes, of different and (ii) \_\_\_\_\_ feelings.

Blank (i)

- (A) a withdrawal
- (B) an obscuring
- (C) a discontinuity

Blank (ii)

- (D) incompatible
- (E) sympathetic
- (F) interminable

5. Because we assume the (i) \_\_\_\_\_ of natural design, nature can often (ii) \_\_\_\_\_ us: as the Wright brothers noted, the birds initially misled them in almost every particular, but their Flyer eventually succeeded by being the least avian of the early flying machines.

Blank (i)

- (A) quirkiness
- (B) preeminence
- (C) maladroitness

Blank (ii)

- (D) galvanize
- (E) befriend
- (F) beguile



6. Colleagues describe Padgett as both forthright and reticent, humble and (i) \_\_\_\_\_, good-natured and (ii) \_\_\_\_\_. And in her behavior as a businesswoman, Padgett herself does little to (iii) \_\_\_\_\_ these contradictions. She says she is proemployee but is avowedly antiunion. She calls herself procustomer but acknowledges that she runs a store with higher profit margins and prices than almost any other grocer.

Blank (i)

- (A) diffident
- (B) eccentric
- (C) arrogant

Blank (ii)

- (D) prickly
- (E) solicitous
- (F) phlegmatic

Blank (iii)

- (G) dispel
- (H) fulfill
- (I) accentuate

7. Historical research makes two somewhat antithetical truths that sounded (i) \_\_\_\_\_ come to seem profound: knowledge of the past comes entirely from written documents, giving written words great (ii) \_\_\_\_\_, and the more material you uncover, the more (iii) \_\_\_\_\_ your subject becomes.

Blank (i)

- (A) deep
- (B) portentous
- (C) banal

Blank (ii)

- (D) consequence
- (E) antiquity
- (F) simultaneity

Blank (iii)

- (G) elusive
- (H) contemporary
- (I) circumstantial

8. The recent publication of the painter Robert Motherwell's substantial body of writing, as well as writings by fellow Expressionist Barnett Newman, (i) \_\_\_\_\_ Ann Gibson's assertion that the Abstract Expressionists were reluctant to (ii) \_\_\_\_\_ issues of artistic meaning in their work and suggests that this supposed reticence was perhaps more artistic (iii) \_\_\_\_\_ than historical fact.

Blank (i)

- (A) substantiates
- (B) undermines
- (C) overlooks

Blank (ii)

- (D) forgo
- (E) articulate
- (F) conceal

Blank (iii)

- (G) conscience
- (H) focus
- (I) posturing



For each of Questions 9 to 15, select one answer choice unless otherwise directed.

Questions 9 to 12 are based on this passage.

The work of English writer Aphra Behn (1640–1689) changed markedly during the 1680s, as she turned from writing plays to writing prose narratives. According to literary critic Rachel Carnell, most scholars view this change as primarily motivated by financial considerations: earning a living by writing for the theatre became more difficult in the 1680s, so Behn tried various other types of prose genres in the hope of finding another lucrative medium. In fact, a long epistolary scandal novel that she wrote in the mid-1680s sold quite well. Yet, as Carnell notes, Behn did not repeat this approach in her other prose works; instead, she turned to writing shorter, more serious novels, even though only about half of these were published during her lifetime. Carnell argues that Behn, whose stage productions are primarily comedies, may have turned to an emerging literary form, the novel, in a conscious attempt to criticize, and subvert for her own ends, the conventions and ideology of a well-established form of her day, the dramatic tragedy.

Carnell acknowledges that Behn admired the skill of such contemporary writers of dramatic tragedy as John Dryden, and that Behn’s own comic stage productions displayed the same partisanship for the reigning Stuart monarchy that characterized most of the politically oriented dramatic tragedies of her day. However, Carnell argues that Behn took issue with the way in which these writers and plays defined the nature of tragedy. As prescribed by Dryden, tragedy was supposed to concern a heroic man who is a public figure and who undergoes a fall that evokes pity from the audience. Carnell points out that Behn’s tragic novels focus instead on the plight of little-known women and the private world of the household; even in her few novels featuring male protagonists, Behn insists on the importance of the crimes these otherwise heroic figures commit in the domestic sphere. Moreover, according to Carnell, Behn questioned the view promulgated by monarchist dramatic tragedies such as Dryden’s: that the envisioned “public” political ideal—passive obedience to the nation’s king—ought to be mirrored in the private sphere, with family members wholly obedient to a male head of household. Carnell sees Behn’s novels not only as rejecting the model of

patriarchal and hierarchical family order, but also as warning that insisting on such a parallel can result in real tragedy befalling the members of the domestic sphere. According to Carnell, Behn’s choice of literary form underscores the differences between her own approach to crafting a tragic story and that taken in the dramatic tragedies, with their artificial distinction between the public and private spheres.

Behn’s novels engage in the political dialogue of her era by demonstrating that the good of the nation ultimately encompasses more than the good of the public figures who rule it.

9. The passage is primarily concerned with
- (A) tracing how Behn’s view of the nature of tragedy changed over time
  - (B) explaining one author’s view of Behn’s contribution to the development of an emerging literary form
  - (C) differentiating between the early and the late literary works of Behn
  - (D) contrasting the approaches to tragedy taken by Behn and by Dryden
  - (E) presenting one scholar’s explanation for a major development in Behn’s literary career

GO ON TO THE NEXT PAGE.



10. The passage suggests that Carnell sees Behn's novels featuring male protagonists as differing from dramatic tragedies such as Dryden's featuring male protagonists in that the former
- (A) depict these characters as less than heroic in their public actions
  - (B) emphasize the consequences of these characters' actions in the private sphere
  - (C) insist on a parallel between the public and the private spheres
  - (D) are aimed at a predominantly female audience
  - (E) depict family members who disobey these protagonists
11. The passage suggests that Carnell believes Behn held which of the following attitudes about the relationship between the private and public spheres?
- (A) The private sphere is more appropriate than is the public sphere as the setting for plays about political events.
  - (B) The structure of the private sphere should not replicate the hierarchical order of the public sphere.
  - (C) Actions in the private sphere are more fundamental to ensuring the good of the nation than are actions in the public sphere.
  - (D) Crimes committed in the private sphere are likely to cause tragedy in the public sphere rather than vice versa.
  - (E) The private sphere is the mirror in which issues affecting the public sphere can most clearly be seen.
12. It can be inferred from the passage that the "artificial distinction" (lines 53-54) refers to the
- (A) practice utilized in dramatic tragedies of providing different structural models for the public and the private spheres
  - (B) ideology of many dramatic tragedies that advocate passive obedience only in the private sphere and not in the public sphere
  - (C) convention that drama ought to concern events in the public sphere and that novels ought to concern events in the private sphere
  - (D) assumption made by the authors of conventional dramatic tragedies that legitimate tragic action occurs only in the public sphere
  - (E) approach taken by the dramatic tragedies in depicting male and female characters differently, depending on whether their roles were public or private

**GO ON TO THE NEXT PAGE.**



Questions 13 and 14 are based on this passage.

Computers cannot accurately predict climate change unless the mathematical equations fed into them adequately capture the natural meteorological processes they are intended to simulate. Moreover, there are processes that influence climate, such as modifications in land use, that scientists do not know how to simulate. The failure to incorporate such a process into a computer climate model can lead the model astray because a small initial effect can initiate a feedback cycle: a perturbation in one variable modifies a second variable, which in turn amplifies the original disturbance. An increase in temperature, for example, can boost the moisture content of the atmosphere, which then causes further warming because water vapor is a greenhouse gas.

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

13. The passage mentions which of the following as adversely affecting the accuracy of computer predictions of climate change?
- (A) Failure to allow for some of the processes that influence climate
  - (B) Mathematical equations that do not accurately reflect natural phenomena
  - (C) An overestimate of the role of feedback cycles
14. In the context in which it appears, “amplifies” (line 11) most nearly means
- (A) exacerbates
  - (B) explicates
  - (C) expatiates
  - (D) adds detail to
  - (E) makes louder

Question 15 is based on this passage.

Extensive housing construction is underway in Pataska Forest, the habitat of a large population of deer. Because deer feed at the edges of forests, these deer will be attracted to the spaces alongside the new roads being cut through Pataska Forest to serve the new residential areas. Consequently, once the housing is occupied, the annual number of the forest’s deer hit by cars will be much higher than before construction started.

15. Which of the following is an assumption on which the argument depends?
- (A) The number of deer hit by commercial vehicles will not increase significantly when the housing is occupied.
  - (B) Deer will be as attracted to the forest edge around new houses as to the forest edge alongside roads.
  - (C) In years past, the annual number of deer that have been hit by cars on existing roads through Pataska Forest has been very low.
  - (D) The development will leave sufficient forest to sustain a significant population of deer.
  - (E) No deer hunting will be allowed in Pataska Forest when the housing is occupied.





For each of Questions 16 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.

16. Female video artists' rise to prominence over the past 30 years has \_\_\_\_\_ the ascent of video as an art form: it is only within the past three decades that video art has attained its current, respected status.

- (A) matched
- (B) politicized
- (C) paralleled
- (D) obviated
- (E) accelerated
- (F) forestalled

17. The report's most significant weakness is its assumption that the phenomenon under study is \_\_\_\_\_, when in reality it is limited to a specific geographic area.

- (A) unusual
- (B) exceptional
- (C) ubiquitous
- (D) absolute
- (E) universal
- (F) restricted

18. The spy's repeated bungling was, above all else, \_\_\_\_\_ those who wished to thwart her efforts, since it was so unpredictable as to obscure any pattern that might otherwise lead to her capture.

- (A) an obstacle to
- (B) a signal to
- (C) a hindrance to
- (D) an indication for
- (E) a snare for
- (F) a boon to

19. Each member of the journalistic pair served as \_\_\_\_\_ the other: each refrained from publishing a given piece if the other doubted that it was ready to be printed.

- (A) a check on
- (B) an advocate for
- (C) an impediment to
- (D) a brake on
- (E) an apologist for
- (F) an intermediary for

GO ON TO THE NEXT PAGE.



For each of Questions 20 to 25, select one answer choice unless otherwise directed.

Questions 20 and 21 are based on this passage.

Line 5 While chocolate was highly esteemed in Mesoamerica, where it originated, its adoption in Europe was initially slow. There is a common belief that Europeans needed to “transform” chocolate to make it appetizing. However, while Spaniards did put sugar, which was unknown to indigenous Americans, into chocolate beverages, this additive was not completely innovative. Mesoamericans were already sweetening chocolate with honey, and the step from  
10 honey to sugar—increasingly more available than honey because of expanding sugar plantations in the Americas—is a small one. Likewise, although Spaniards adjusted Mesoamerican recipes by using European spices, the spices chosen suggest an  
15 attempt to replicate harder-to-find native flowers. There is no indication the Spaniards deliberately tried to change the original flavor of chocolate.

20. The author of the passage refers to the use of honey primarily to

- (A) identify the origins of an additive previously untried by Europeans
- (B) present an example of a product that was unknown to Europeans
- (C) correct the misapprehension that Mesoamericans used a sweetener that was not available in Europe
- (D) provide an example of an ingredient that was in the process of being displaced by a substitute
- (E) explain why the Spanish use of sugar in chocolate was not a sign of a need to transform chocolate

21. Which sentence presents a misconception that the passage challenges?

- (A) The second (“There is . . . appetizing”)
- (B) The third (“However . . . innovative”)
- (C) The fourth (“Mesoamericans . . . one”)
- (D) The fifth (“Likewise . . . flowers”)
- (E) The sixth (“There is . . . chocolate”)



Questions 22 and 23 are based on this passage.

Line 5 Biologists generally agree that birds and dinosaurs are somehow related to one another. The agreement ends there. Hypotheses regarding dinosaurian and avian evolution are unusually diverse—and often at odds with one another. Confusion consequently reigns over a broad spectrum of unanswered questions dealing with avian origins and the biology of dinosaurs and early birds. This confusion has been exacerbated by a paucity of serious attempts to synthesize and evaluate available data on the details of avian and dinosaurian evolution. Too often, the job of summarizing current knowledge of these subjects has fallen to well-meaning but naïve lay authors or reporters. Consequently, both the public and the scientific community have often been misled by widespread dissemination of sensational but weakly founded hypotheses.

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

22. The passage suggests that which of the following could help remedy the problem described in the final sentence (lines 14-17)?
- Ⓐ An article written by a biologist for the general public summarizing current theories about avian and dinosaurian evolution
  - Ⓑ A close examination of available data on avian and dinosaurian evolution
  - Ⓒ A new hypothesis regarding the connection between avian and dinosaurian evolution
23. In the context in which it appears, “sensational” (line 16) most nearly means
- Ⓐ dramatic
  - Ⓑ false
  - Ⓒ excellent
  - Ⓓ eminent
  - Ⓔ horrifying



Questions 24 and 25 are based on this passage.

A portrait type that appeared with relentless frequency in eighteenth-century England is the familiar image of a gentleman poised with one hand inside his partially unbuttoned waistcoat. Standard interpretations of this portrait posture offer observations of correspondence—demonstrating either that it mirrors actual social behavior or that it borrows from classical statuary. Such explanations, however, illuminate neither the source of this curious convention nor the reason for its popularity. It is true that in real life the “hand-in” was a common stance for elite men. Still, there were other ways of comporting the body that did not become winning portrait formulas. And even if the “hand-in” portrait does resemble certain classical statues, what accounts for the adoption of this particular pose?

24. In the context of the passage as a whole, the primary function of the sentence in lines 10-12 (“It is . . . men”) is to

- (A) emphasize the influence of a particular social class on the conventions of eighteenth-century English portraiture
- (B) account for the origin of a particular type of behavior frequently represented in eighteenth-century English portraiture
- (C) acknowledge a historical basis for two competing hypotheses about a particular portrait type
- (D) question the relevance of certain evidence frequently cited in support of an explanation for a particular portrait type
- (E) concede that one explanation for the prevalence of a particular portrait type has a basis in fact

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

25. Which of the following might provide an explanation for the popularity of hand-in portraits that would satisfy the author of the passage?

- (A) An eighteenth-century English etiquette manual discussing the social implications of the “hand-in” stance
- (B) A comprehensive catalogue of eighteenth-century English portraits that showed what proportion of portraits depicted gentlemen in the “hand-in” stance
- (C) A passage from an eighteenth-century English novel in which a gentleman considers what stance to adopt when his portrait is painted



**S T O P**

**If you finish before time is called, you may check your work on this section only.**

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.

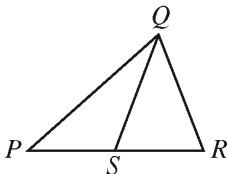
Graphical data presentations, such as bar graphs, circle graphs, and line graphs, **are** drawn to scale; therefore, you can read, estimate, or compare data values by sight or by measurement.

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 circle to the right of the question.

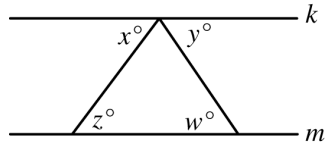
- (A) Quantity A is greater.
- (B) Quantity B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

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>
<b>Example 1:</b>	$(2)(6)$	$2 + 6$	<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>
<b>Example 2:</b>	$PS$	$SR$	<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)			

- (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.



Line  $k$  is parallel to line  $m$ .

Quantity A

Quantity B

1.                       $x + y$                                        $w + z$                                       (A)   (B)   (C)   (D)

In a decimal number, a bar over one or more consecutive digits means that the pattern of digits under the bar repeats without end. For example,  $0.\overline{387} = 0.387387387\dots$

Quantity A

Quantity B

2.                       $0.\overline{717}$                                        $0.\overline{71}$                                       (A)   (B)   (C)   (D)

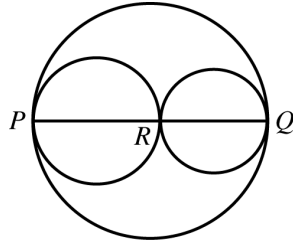
4 percent of  $s$  is equal to 3 percent of  $t$ , where  $s > 0$  and  $t > 0$ .

Quantity A

Quantity B

3.                       $s$                                        $t$                                       (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.



Three circles with their centers on line segment  $PQ$  are tangent at points  $P$ ,  $R$ , and  $Q$ , where point  $R$  lies on line segment  $PQ$ .

Quantity A

Quantity B

4. The circumference of the largest circle      The sum of the circumferences of the two smaller circles      (A) (B) (C) (D)

$$rt < 0 < -r$$

Quantity A

Quantity B

5.  $t$       0      (A) (B) (C) (D)

$$x > y$$

Quantity A

Quantity B

6.  $|x + y|$        $|x - y|$       (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.

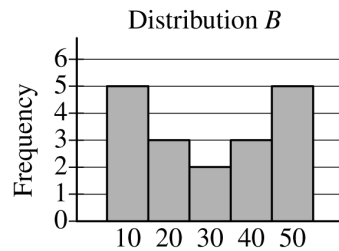
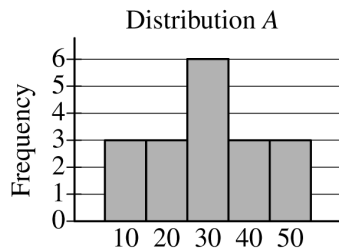
In the  $xy$ -plane, the points  $(a, 0)$  and  $(0, b)$  are on the line whose equation is

$$y = \frac{1}{2}x + 10.$$

Quantity A

Quantity B

7.  $a$   $b$  (A) (B) (C) (D)



The frequency distributions shown above represent two groups of data. Each of the data values is a multiple of 10.

Quantity A

Quantity B

8. The standard deviation of distribution A The standard deviation of distribution B (A) (B) (C) (D)

One person is to be selected at random from a group of 25 people. The probability that the selected person will be a male is 0.44, and the probability that the selected person will be a male who was born before 1960 is 0.28.

Quantity A

Quantity B

9. The number of males in the group who were born in 1960 or later 4 (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**

To answer these questions, enter a number by filling in circles in a grid.

- Your answer may be an integer, a decimal, or a fraction, and it may be negative.
- 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, though you may need to reduce your fraction to fit in the grid.
- Enter the exact answer unless the question asks you to round your answer.
- If a question asks for a fraction, the grid will have a built-in division slash (/). Otherwise, the grid will have a decimal point available.
- Start your answer in any column, space permitting. Fill in no more than one circle in any column of the grid. Columns not needed should be left blank.
- Write your answer in the boxes at the top of the grid and fill in the corresponding circles. **You will receive credit only if the circles are filled in correctly, regardless of the number written in the boxes at the top.**

**Examples of acceptable ways to use the grid:**

Integer answer: 502 (either position is correct)

		5	0	2					
⊖	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

				5	0	2			
⊖	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

Decimal answer: -4.13

				4	.	1	3		
⊖	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

Fraction answer:  $-\frac{2}{10}$

		2	/	1	0				
⊖	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

For the following question, use the grid to enter your answer.

10. At Company Y, the ratio of the number of female employees to the number of male employees is 3 to 2. If there are 150 female employees at the company, how many male employees are there at the company?

⊖	.	.	.	.	.	.	.	.	.
	0	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9	9

male employees

11. If  $\frac{a - b}{a + b} = 2$  and  $b = 1$ , what is the value of  $a$ ?

- (A) 1
- (B) 0
- (C) -1
- (D) -2
- (E) -3

12. The floor space in a certain market is rented for \$15 per 30 square feet for one day. In the market, Alice rented a rectangular floor space that measured 8 feet by 15 feet, and Betty rented a rectangular floor space that measured 15 feet by 20 feet. If each woman rented her floor space for one day, how much more did Betty pay than Alice?

- (A) \$27
- (B) \$36
- (C) \$54
- (D) \$90
- (E) \$180

13. A business owner obtained a \$6,000 loan at a simple annual interest rate of  $r$  percent in order to purchase a computer. After one year, the owner made a single payment of \$6,840 to repay the loan, including the interest. What is the value of  $r$ ?

- (A) 7.0
- (B) 8.4
- (C) 12.3
- (D) 14.0
- (E) 16.8

For the following question, use the grid to enter your answer.

List  $L$ : 2,  $x$ ,  $y$

List  $M$ : 1, 2, 3,  $x$ ,  $y$

14. If the average (arithmetic mean) of the 3 numbers in list  $L$  is  $\frac{10}{3}$ , what is the average of the 5 numbers in list  $M$ ?

Give your answer as a fraction.

			/		
⊖	0	0	0	0	0
	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6
	7	7	7	7	7
	8	8	8	8	8
	9	9	9	9	9

16. If  $(5^{5x})(25) = 5^n$ , where  $n$  and  $x$  are integers, what is the value of  $n$  in terms of  $x$ ?

- (A)  $5x + 1$
- (B)  $5x + 2$
- (C)  $5x + 5$
- (D)  $10x$
- (E)  $10x + 2$

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

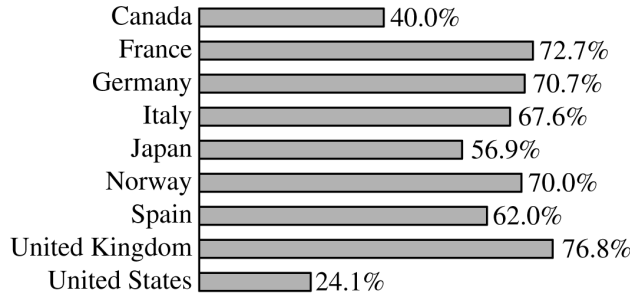
15. Which of the following inequalities have at least one positive solution and at least one negative solution?

Indicate all such inequalities.

- (A)  $\frac{5}{3}x < x$
- (B)  $x^3 < x$
- (C)  $x - 6 < x - 7$

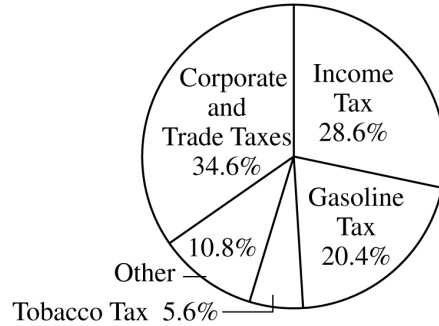
Questions 17 to 20 are based on the following data.

GASOLINE TAX REVENUE AS A PERCENT OF TOTAL RETAIL GASOLINE SALES\* IN 2000



\*Total retail sales include tax.

DISTRIBUTION OF GERMANY'S TOTAL TAX REVENUE IN 2000



17. What is the median of the percent values representing gasoline tax revenue as a percent of total retail gasoline sales for the nine countries listed in the bar graph?

- (A) 67.6%
- (B) 68.0%
- (C) 70.0%
- (D) 70.7%
- (E) 72.7%

19. In 2000 the amount of Germany's gasoline tax revenue was approximately what percent less than the amount of its income tax revenue?

- (A) 10%
- (B) 20%
- (C) 30%
- (D) 40%
- (E) 50%

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

18. Based on the information given, which of the following statements must be true?

Indicate all such statements.

- (A) In 2000 France's gasoline tax revenue as a percent of its total tax revenue was greater than 20.4 percent.
- (B) In 2000 the price per gallon of gasoline was greater in Norway than it was in Spain.
- (C) In 2000 Germany's gasoline tax revenue was more than 3 times its tobacco tax revenue.

20. If Germany's total tax revenue in 2000 was approximately \$170 billion, approximately what was the amount of the total retail gasoline sales in Germany that year?

- (A) \$10 billion
- (B) \$20 billion
- (C) \$30 billion
- (D) \$40 billion
- (E) \$50 billion

21. Of the 180 judges appointed by a certain President, 30 percent were women and 25 percent were from minority groups. If  $\frac{1}{9}$  of the women appointed were from minority groups, how many of the judges appointed were neither women nor from minority groups?

- (A) 75
- (B) 81
- (C) 87
- (D) 93
- (E) 99

22. If an integer is divisible by both 8 and 15, then the integer also must be divisible by which of the following?

- (A) 16
- (B) 24
- (C) 32
- (D) 36
- (E) 45

23. A certain experiment has three possible outcomes.

The outcomes are mutually exclusive and have probabilities  $p$ ,  $\frac{p}{2}$ , and  $\frac{p}{4}$ , respectively. What is the value of  $p$ ?

- (A)  $\frac{1}{7}$
- (B)  $\frac{2}{7}$
- (C)  $\frac{3}{7}$
- (D)  $\frac{4}{7}$
- (E)  $\frac{5}{7}$

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

24. In triangle  $ABC$ , the measure of angle  $B$  is  $90^\circ$ , the length of side  $AB$  is 4, and the length of side  $BC$  is  $x$ . If the length of hypotenuse  $AC$  is between 4 and 8, which of the following could be the value of  $x$ ?

Indicate all such values.

- (A) 1
- (B) 2
- (C) 3
- (D) 4
- (E) 5
- (F) 6

25. Each month, a certain manufacturing company's total expenses are equal to a fixed monthly expense plus a variable expense that is directly proportional to the number of units produced by the company during that month. If the company's total expenses for a month in which it produces 20,000 units are \$570,000, and the total expenses for a month in which it produces 25,000 units are \$705,000, what is the company's fixed monthly expense?

- Ⓐ \$27,000
- Ⓑ \$30,000
- Ⓒ \$67,500
- Ⓓ \$109,800
- Ⓔ \$135,000

**STOP**

**If you finish before time is called, you may check your work on this section only.**

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.

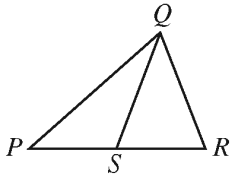
Graphical data presentations, such as bar graphs, circle graphs, and line graphs, **are** drawn to scale; therefore, you can read, estimate, or compare data values by sight or by measurement.

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 circle 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>
<b>Example 1:</b>	(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>
<b>Example 2:</b>	$PS$	$SR$	<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)			



- (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 length of each side of equilateral triangle  $T$  is 6 times the length of each side of equilateral triangle  $X$ .

Quantity A

Quantity B

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. The ratio of the length of one side of $T$ to the length of another side of $T$ | The ratio of the length of one side of $X$ to the length of another side of $X$ | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
|--|---|---|---|---|---|

Of 30 theater tickets sold, 20 tickets were sold at prices between \$10 and \$30 each and 10 tickets were sold at prices between \$40 and \$60 each.

Quantity A

Quantity B

- |  |      |   |   |   |   |
|--|------|---|---|---|---|
| 2. The average (arithmetic mean) of the prices of the 30 tickets | \$50 | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
|--|------|---|---|---|---|

$$x > 1$$

Quantity A

Quantity B

- |                    |                  |   |   |   |   |
|--------------------|------------------|---|---|---|---|
| 3. $\frac{x}{x+1}$ | $\frac{-x}{1-x}$ | Ⓐ | Ⓑ | Ⓒ | Ⓓ |
|--------------------|------------------|---|---|---|---|

- (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 the  $xy$ -plane, the point  $(1, 2)$  is on line  $j$ , and the point  $(2, 1)$  is on line  $k$ . Each of the lines has a positive slope.

- |    | <u>Quantity A</u>     | <u>Quantity B</u>     |                 |
|----|-----------------------|-----------------------|-----------------|
| 4. | The slope of line $j$ | The slope of line $k$ | (A) (B) (C) (D) |
- 

$T$  is a list of 100 different numbers that are greater than 0 and less than 50. The number  $x$  is greater than 60 percent of the numbers in  $T$ , and the number  $y$  is greater than 40 percent of the numbers in  $T$ .

- |    | <u>Quantity A</u> | <u>Quantity B</u> |                 |
|----|-------------------|-------------------|-----------------|
| 5. | $x - y$           | 20                | (A) (B) (C) (D) |
- 

$n$  is a positive integer.

- |    | <u>Quantity A</u>                      | <u>Quantity B</u>                           |                 |
|----|--|---|-----------------|
| 6. | The remainder when $n$ is divided by 5 | The remainder when $n + 10$ is divided by 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.
- 

A right circular cylinder with radius 2 inches has volume 15 cubic inches.

- |    | <u>Quantity A</u>          | <u>Quantity B</u> |                 |
|----|----------------------------|-------------------|-----------------|
| 7. | The height of the cylinder | 2 inches          | (A) (B) (C) (D) |
- 

$k$  is an integer for which  $\frac{1}{2^{1-k}} < \frac{1}{8}$ .

- |    | <u>Quantity A</u> | <u>Quantity B</u> |                 |
|----|-------------------|-------------------|-----------------|
| 8. | $k$               | -2                | (A) (B) (C) (D) |
- 

$n$  is an integer greater than 0.

- |    | <u>Quantity A</u>                             | <u>Quantity B</u>                             |                 |
|----|---|---|-----------------|
| 9. | The number of different prime factors of $9n$ | The number of different prime factors of $8n$ | (A) (B) (C) (D) |

GO ON TO THE NEXT PAGE.

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**

To answer these questions, enter a number by filling in circles in a grid.

- Your answer may be an integer, a decimal, or a fraction, and it may be negative.
- 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, though you may need to reduce your fraction to fit in the grid.
- Enter the exact answer unless the question asks you to round your answer.
- If a question asks for a fraction, the grid will have a built-in division slash (/). Otherwise, the grid will have a decimal point available.
- Start your answer in any column, space permitting. Fill in no more than one circle in any column of the grid. Columns not needed should be left blank.
- Write your answer in the boxes at the top of the grid and fill in the corresponding circles. **You will receive credit only if the circles are filled in correctly, regardless of the number written in the boxes at the top.**

**Examples of acceptable ways to use the grid:**

Integer answer: 502 (either position is correct)

		5	0	2		
⊖	⊖	⊖	⊖	⊖	⊖	⊖
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

				5	0	2
⊖	⊖	⊖	⊖	⊖	⊖	⊖
0	0	0	0	0	0	0
1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

Decimal answer: -4.13

⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9

Fraction answer:  $-\frac{2}{10}$

⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9



14. A base of a triangle has length  $b$ , the altitude corresponding to the base has length  $h$ , and  $b = 2h$ . Which of the following expresses the area of the triangle, in terms of  $h$ ?

(A)  $\frac{1}{2}h^2$

(B)  $\frac{3}{4}h^2$

(C)  $h^2$

(D)  $\frac{3}{2}h^2$

(E)  $2h^2$

15. How many different two-digit positive integers are there in which the tens digit is greater than 6 and the units digit is less than 4?

(A) 7

(B) 9

(C) 10

(D) 12

(E) 24

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

16. Chris entered a number in his calculator and erroneously multiplied the number by 2,073 instead of 2.073, getting an incorrect product. Which of the following is a single operation that Chris could perform on his calculator to correct the error?

Indicate all such operations.

(A) Multiply the incorrect product by 0.001

(B) Divide the incorrect product by 0.001

(C) Multiply the incorrect product by 1,000

(D) Divide the incorrect product by 1,000

Questions 17 to 20 are based on the following data.

DISTRIBUTION OF THE 50 STATES OF THE UNITED STATES BY POPULATION,\* 2000

Population Category	Population (millions)	Number of States
A	0.0–1.9	15
B	2.0–3.9	9
C	4.0–5.9	12
D	6.0–7.9	3
E	8.0–9.9	4
F	10.0–11.9	1
G	12.0–13.9	2
H	14.0 and over	3

\*Population of each state is rounded to the nearest 0.1 million.

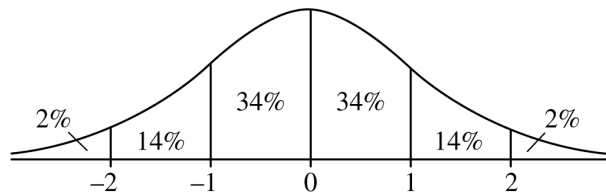
- 17. How many of the 50 states were in the five population categories from A through E ?
  - (A) 47
  - (B) 43
  - (C) 35
  - (D) 20
  - (E) 19
- 18. In 2000 the population of West Virginia was 1.8 million. If the ratio of the population of Georgia to that of West Virginia was 9 to 2, in which population category was Georgia?
  - (A) B
  - (B) C
  - (C) D
  - (D) E
  - (E) F
- 19. The number of states in the two population categories C and D was approximately what percent greater than the number in the four population categories from E through H ?
  - (A) 36%
  - (B) 33%
  - (C) 30%
  - (D) 27%
  - (E) 20%
- 20. The median of the 50 state populations was in which population category?
  - (A) A
  - (B) B
  - (C) C
  - (D) D
  - (E) E

For the following question, use the grid to enter your answer.

21. If  $\sqrt[3]{x} = 3$  and  $x = \sqrt{y}$ , what is the value of  $y$ ?

$y =$ 

-	.	.	.	.	.	.	.
0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9



22. The figure shows the standard normal distribution, with mean 0 and standard deviation 1, including approximate percents of the distribution corresponding to the six regions shown.

Ian rode the bus to work last year. His travel times to work were approximately normally distributed, with a mean of 35 minutes and a standard deviation of 5 minutes. According to the figure shown, approximately what percent of Ian’s travel times to work last year were less than 40 minutes?

- (A) 14%
- (B) 34%
- (C) 60%
- (D) 68%
- (E) 84%



23. For all integers  $x$ , the function  $f$  is defined as follows.

$$f(x) = \begin{cases} x - 1 & \text{if } x \text{ is even} \\ x + 1 & \text{if } x \text{ is odd} \end{cases}$$

If  $a$  and  $b$  are integers and  $f(a) + f(b) = a + b$ , which of the following statements must be true?

- (A)  $a = b$   
 (B)  $a = -b$   
 (C)  $a + b$  is odd.  
 (D) Both  $a$  and  $b$  are even.  
 (E) Both  $a$  and  $b$  are odd.
24. If  $y^{-2} + 2y^{-1} - 15 = 0$ , which of the following could be the value of  $y$ ?

- (A) 3  
 (B)  $\frac{1}{5}$   
 (C)  $-\frac{1}{5}$   
 (D)  $-\frac{1}{3}$   
 (E)  $-5$

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

3.7, 4.1,  $a$ , 8.5, 9.2,  $2a$

25. The six numbers shown are listed in increasing order. Which of the following values could be the range of the six numbers?

Indicate all such values.

- (A) 4.0  
 (B) 5.2  
 (C) 7.3  
 (D) 11.6  
 (E) 12.9  
 (F) 14.1

**STOP**

If you finish before time is called, you may check your work on this section only.

# Appendix D

## Interpretive Information for the Verbal Reasoning and Quantitative Reasoning Measures of the Practice Test

### Answer Key and Percentage of Examinees Answering Each Question Correctly\*

Verbal Reasoning						Quantitative Reasoning					
Section 3			Section 4			Section 5			Section 6		
Question Number	Correct Answer	P+	Question Number	Correct Answer	P+	Question Number	Correct Answer	P+	Question Number	Correct Answer	P+
1	E	57	1	A	60	1	C	76	1	C	85
2	E	49	2	C	75	2	A	78	2	B	74
3	C	72	3	A, E	60	3	B	72	3	B	63
4	A, E	43	4	C, D	61	4	C	61	4	D	60
5	A, D	79	5	B, F	76	5	A	56	5	D	48
6	C, E	61	6	C, D, G	48	6	D	51	6	C	55
7	C, F, G	59	7	C, D, G	22	7	B	67	7	B	47
8	A, E, H	69	8	B, E, I	36	8	B	27	8	B	50
9	B	58	9	E	42	9	C	31	9	D	30
10	D	76	10	B	62	10	100	84	10	B	88
11	B	53	11	B	52	11	E	87	11	14.4	71
12	C	60	12	D	42	12	D	88	12	C	67
13	C	80	13	A, B	69	13	D	82	13	A	63
14	C	36	14	A	83	14	14/5	63	14	C	63
15	C, F	89	15	D	26	15	B	55	15	D	58
16	A, F	50	16	A, C	67	16	B	46	16	A, D	73
17	A, B	77	17	C, E	68	17	A	89	17	B	94
18	A, B	62	18	A, C	82	18	C	54	18	D	78
19	B, D	33	19	A, D	26	19	C	30	19	A	36
20	B	90	20	E	65	20	E	28	20	C	47
21	A	60	21	A	67	21	C	43	21	729	41
22	C	23	22	A, B	43	22	B	59	22	E	61
23	A, C	81	23	A	72	23	D	34	23	C	40
24	A	20	24	E	53	24	A, B, C, D, E, F	26	24	C	38
25	C	19	25	A, C	50	25	B	44	25	C, D, E,	24

\* The P+ is the percentage of examinees who answered the question correctly at a previous examination.

Note: There is no partial credit for partially correct answers. You should treat as incorrect any question for which you did not select all the correct answer choices.