SECTION 1

THE GRADUATE RECORD EXAMINATIONS®

Analytical Writing 1

PRESENT YOUR PERSPECTIVE ON AN ISSUE

45 minutes

You will have a choice between two Issue topics. Each topic will appear as a brief quotation that states or implies an issue of general interest. Read each topic carefully; then decide on which topic you could write a more effective and well-reasoned response.

You will have 45 minutes to plan and compose a response that presents your perspective on the topic you select. A response on any other topic will receive a zero. You are free to accept, reject, or qualify the claim made in the topic you selected, as long as the ideas you present are clearly relevant to the topic. Support your views with reasons and examples drawn from such areas as your reading, experience, observations, or academic studies.

GRE readers, who are college and university faculty, will read your response and evaluate its overall quality, based on how well you do the following:

- consider the complexities and implications of the issue
- organize, develop, and express your ideas on the issue
- support your ideas with relevant reasons and examples
- control the elements of standard written English

You may want to take a few minutes to think about the issue and to plan a response before you begin writing. Because the space for writing your response is limited, **use the next page to plan your response**. Be sure to develop your ideas fully and organize them coherently, but leave time to reread what you have written and make any revisions that you think are necessary.

Present your perspective on one of the issues below, using relevant reasons and/or examples to support your views.

Topic No:	
C100.	"Both the development of technological tools and the uses to which humanity has put them have created modern civilizations in which loneliness is ever increasing."
C101.	"Our declining environment may bring the people of the world together as no politician, philosopher, or war ever could. Environmental problems are global in scope and respect no nation's boundaries. Therefore, people are faced with the choice of unity and cooperation on the one hand or disunity and a common tragedy on the other."

Write the topic number of the issue you choose on the line at the top right corner of the answer booklet labeled "Analytical Writing 1: Issue."

Plan your response on this page. This page will not be scored. **WRITE YOUR RESPONSE IN THE ANSWER BOOKLET LABELED "Analytical Writing 1: Issue."**

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.
DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

THE GRADUATE RECORD EXAMINATIONS®

Analytical Writing 2

ANALYZE AN ARGUMENT

30 minutes

You will have 30 minutes to plan and write a critique of an argument presented in the form of a short passage. A critique of any other argument will receive a score of zero.

Analyze the line of reasoning in the argument. Be sure to consider what, if any, questionable assumptions underlie the thinking and, if evidence is cited, how well it supports the conclusion.

You can also discuss what sort of evidence would strengthen or refute the argument, what changes in the argument would make it more logically sound, and what additional information might help you better evaluate its conclusion. *Note that you are NOT being asked to present your views on the subject.*

GRE readers, who are college and university faculty, will read your critique and evaluate its overall quality, based on how well you

- identify and analyze important features of the argument
- organize, develop, and express your critique of the argument
- support your critique with relevant reasons and examples
- control the elements of standard written English

Before you begin writing, you may want to take a few minutes to evaluate the argument and plan a response. Because the space for writing your response is limited, **use the next page to plan your response**. Be sure to develop your ideas fully and organize them coherently, but leave time to reread what you have written and make any revisions that you think are necessary.

Discuss how well reasoned you find this argument.

Topic No:

C103. Six months ago the region of Forestville increased the speed limit for vehicles traveling on the region's highways by ten miles per hour. Since that change took effect, the number of automobile accidents in that region has increased by 15 percent. But the speed limit in Elmsford, a region neighboring Forestville, remained unchanged, and automobile accidents declined slightly during the same six-month period. Therefore, if the citizens of Forestville want to reduce the number of automobile accidents on the region's highways, they should campaign to reduce Forestville's speed limit to what it was before the increase.

Write the topic number of the argument on the line at the top right corner of the answer booklet labeled "Analytical Writing 2: Argument."

Plan your response on this page. This page will not be scored. **WRITE YOUR RESPONSE ON THE ANSWER BOOKLET LABELED** "Analytical Writing 2: Argument."

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

SECTION 2

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. Nonviolent demonstrations often create such tensions that a community that has constantly refused to ------- its injustices is forced to correct them: the injustices can no longer be -------.

   (A) acknowledge. .ignored
   (B) decrease. .verified
   (C) tolerate. .accepted
   (D) address. .eliminated
   (E) explain. .discussed

2. Since 1813 reaction to Jane Austen's novels has oscillated between ------- and condescension; but in general later writers have esteemed her works more highly than did most of her literary -------.

   (A) dismissal. .admirers
   (B) adoration. .contemporaries
   (C) disapproval. .readers
   (D) indifference. .followers
   (E) approbation. .precursors

3. There are, as yet, no vegetation types or ecosystems whose study has been ------- to the extent that they no longer ------- ecologists.

   (A) perfected. .hinder (B) exhausted. .interest
   (C) prolonged. .require (D) prevented. .challenge
   (E) delayed. .benefit

4. Under ethical guidelines recently adopted by the National Institutes of Health, human genes are to be manipulated only to correct diseases for which ------- treatments are unsatisfactory.

   (A) similar (B) most (C) dangerous
   (D) uncommon (E) alternative

5. It was her view that the country's problems had been ------- by foreign technocrats, so that to invite them to come back would be counterproductive.

   (A) foreseen (B) attacked (C) ascertained
   (D) exacerbated (E) analyzed

6. Winsor McCay, the cartoonist, could draw with incredible -------: his comic strip about Little Nemo was characterized by marvelous draftsmanship and sequencing.

   (A) sincerity (B) efficiency (C) virtuosity
   (D) rapidity (E) energy

7. The actual ------- of Wilson's position was always ------- by his refusal to compromise after having initially agreed to negotiate a settlement.

   (A) outcome. .foreshadowed
   (B) logic. .enhanced
   (C) rigidity. .betrayed
   (D) uncertainty. .alleviated
   (E) cowardice. .highlighted

Directions: In each of the following questions, a related pair of words or phrases is followed by five lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

8. SEDATIVE : DROWSINESS ::
   (A) epidemic : contagiousness
   (B) vaccine : virus
   (C) laxative : drug
   (D) anesthetic : numbness
   (E) therapy : psychosis

9. LAWYER : COURTROOM ::
   (A) participant : team
   (B) commuter : train
   (C) gladiator : arena
   (D) senator : caucus
   (E) patient : ward

10. CURIOSITY : KNOW ::
    (A) temptation : conquer
    (B) starvation : eat
    (C) wanderlust : travel
    (D) humor : laugh
    (E) survival : live

11. FRUGAL : MISERLY ::
    (A) confident : arrogant
    (B) courageous : pugnacious
    (C) famous : aggressive
    (D) rash : foolhardy
    (E) quiet : timid

12. ANTIDOTE : POISON ::
    (A) cure : recovery
    (B) narcotic : sleep
    (C) stimulant : relapse
    (D) tonic : lethargy
    (E) resuscitation : breathing

GO ON TO THE NEXT PAGE.

13. STYGIAN : DARK ::
    (A) abysmal : low
    (B) cogent : contentious
    (C) fortuitous : accidental
    (D) reckless : threatening
    (E) cataclysmic : doomed

*14. WORSHIP : SACRIFICE ::
    (A) generation : pyre
    (B) burial : mortuary
    (C) weapon : centurion
    (D) massacre : invasion
    (E) prediction : augury

15. EVANESCENT : DISAPPEAR ::
    (A) transparent : penetrate
    (B) onerous : struggle
    (C) feckless : succeed
    (D) illusory : exist
    (E) pliant : yield

16. UPBRAID : REPROACH ::
    (A) dote : like
    (B) lag : stray
    (C) vex : please
    (D) earn : desire
    (E) recast : explain

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

It has been known for many decades that the appearance of sunspots is roughly periodic, with an average cycle of eleven years. Moreover, the incidence of solar flares and the flux of solar cosmic rays, ultraviolet radiation, and x-radiation all vary directly with the sunspot cycle. But after more than a century of investigation, the relation of these and other phenomena, known collectively as the solar-activity cycle, to terrestrial weather and climate remains unclear. For example, the sunspot cycle and the allied magnetic-polarity cycle have been linked to periodicities discerned in records of such variables as rainfall, temperature, and winds. Invariably, however, the relation is weak, and commonly of dubious statistical significance.

Effects of solar variability over longer terms have also been sought. The absence of recorded sunspot activity in the notes kept by European observers in the late seventeenth and early eighteenth centuries has led some scholars to postulate a brief cessation of sunspot activity at that time (a period called the Maunder minimum). The Maunder minimum has been linked to a span of unusual cold in Europe extending from the sixteenth to the early nineteenth centuries. The reality of the Maunder minimum has yet to be established, however, especially since the records that Chinese naked-eye observers of solar activity made at that time appear to contradict it. Scientists have also sought evidence of long-term solar periodicities by examining indirect climatological data, such as fossil records of the thickness of ancient tree rings. These studies, however, failed to link unequivocally terrestrial climate and the solar-activity cycle, or even to confirm the cycle's past existence.

If consistent and reliable geological or archaeological evidence tracing the solar-activity cycle in the distant past could be found, it might also resolve an important issue in solar physics: how to model solar activity. Currently, there are two models of solar activity. The first supposes that the Sun's internal motions (caused by rotation and convection) interact with its large-scale magnetic field to produce a dynamo, a device in which mechanical energy is converted into the energy of a magnetic field. In short, the Sun's large-scale magnetic field is taken to be self-sustaining, so that the solar-activity cycle it drives would be maintained with little overall change for perhaps billions of years. The alternative explanation supposes that the Sun's large-scale magnetic field is a remnant of the field the Sun acquired when it formed, and is not sustained against decay. In this model, the solar mechanism dependent on the Sun's magnetic field runs down more quickly. Thus, the characteristics of the solar-activity cycle could be expected to change over a long period of time. Modern solar observations span too short a time to reveal whether present cyclical solar activity is a long-lived feature of the Sun, or merely a transient phenomenon.

17. The author focuses primarily on
    (A) presenting two competing scientific theories concerning solar activity and evaluating geological evidence often cited to support them
    (B) giving a brief overview of some recent scientific developments in solar physics and assessing their impact on future climatological research
    (C) discussing the difficulties involved in linking terrestrial phenomena with solar activity and indicating how resolving that issue could have an impact on our understanding of solar physics
    (D) pointing out the futility of a certain line of scientific inquiry into the terrestrial effects of solar activity and recommending its abandonment in favor of purely physics-oriented research
    (E) outlining the specific reasons why a problem in solar physics has not yet been solved and faulting the overly theoretical approach of modern physicists

GO ON TO THE NEXT PAGE.

18. Which of the following statements about the two models of solar activity, as they are described in lines 37-55, is accurate?

(A) In both models cyclical solar activity is regarded as a long-lived feature of the Sun, persisting with little change over billions of years.
(B) In both models the solar-activity cycle is hypothesized as being dependent on the large-scale solar magnetic field.
(C) In one model the Sun's magnetic field is thought to play a role in causing solar activity, whereas in the other model it is not.
(D) In one model solar activity is presumed to be unrelated to terrestrial phenomena, whereas in the other model solar activity is thought to have observable effects on the Earth.
(E) In one model cycles of solar activity with periodicities longer than a few decades are considered to be impossible, whereas in the other model such cycles are predicted.

19. According to the passage, late seventeenth- and early eighteenth-century Chinese records are important for which of the following reasons?

(A) They suggest that the data on which the Maunder minimum was predicated were incorrect.
(B) They suggest that the Maunder minimum cannot be related to climate.
(C) They suggest that the Maunder minimum might be valid only for Europe.
(D) They establish the existence of a span of unusually cold weather worldwide at the time of the Maunder minimum.
(E) They establish that solar activity at the time of the Maunder minimum did not significantly vary from its present pattern.

20. The author implies which of the following about currently available geological and archaeological evidence concerning the solar-activity cycle?

(A) It best supports the model of solar activity described in lines 37-45.
(B) It best supports the model of solar activity described in lines 45-52.
(C) It is insufficient to confirm either model of solar activity described in the third paragraph.
(D) It contradicts both models of solar activity as they are presented in the third paragraph.
(E) It disproves the theory that terrestrial weather and solar activity are linked in some way.

21. It can be inferred from the passage that the argument in favor of the model described in lines 37-45 would be strengthened if which of the following were found to be true?

(A) Episodes of intense volcanic eruptions in the distant past occurred in cycles having very long periodicities.
(B) At the present time the global level of thunderstorm activity increases and decreases in cycles with periodicities of approximately 11 years.
(C) In the distant past cyclical climatic changes had periodicities of longer than 200 years.
(D) In the last century the length of the sunspot cycle has been known to vary by as much as 2 years from its average periodicity of 11 years.
(E) Hundreds of millions of years ago, solar-activity cycles displayed the same periodicities as do present-day solar-activity cycles.

22. It can be inferred from the passage that Chinese observations of the Sun during the late seventeenth and early eighteenth centuries

(A) are ambiguous because most sunspots cannot be seen with the naked eye
(B) probably were made under the same weather conditions as those made in Europe
(C) are more reliable than European observations made during this period
(D) record some sunspot activity during this period
(E) have been employed by scientists seeking to argue that a change in solar activity occurred during this period

23. It can be inferred from the passage that studies attempting to use tree-ring thickness to locate possible links between solar periodicity and terrestrial climate are based on which of the following assumptions?

(A) The solar-activity cycle existed in its present form during the time period in which the tree rings grew.
(B) The biological mechanisms causing tree growth are unaffected by short-term weather patterns.
(C) Average tree-ring thickness varies from species to species.
(D) Tree-ring thicknesses reflect changes in terrestrial climate.
(E) Both terrestrial climate and the solar-activity cycle randomly affect tree-ring thickness.

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The common belief of some linguists that each language is a perfect vehicle for the thoughts of the nation speaking it is in some ways the exact counterpart of the conviction of the Manchester school of economics that supply and demand will regulate everything for the best. Just as economists were blind to the numerous cases in which the law of supply and demand left actual wants unsatisfied, so also many linguists are deaf to those instances in which the very nature of a language calls forth misunderstandings in everyday conversation, and in which, consequently, a word has to be modified or defined in order to present the idea intended by the speaker: "He took his stick—no, not John's, but his own." No language is perfect, and if we admit this truth, we must also admit that it is not unreasonable to investigate the relative merits of different languages or of different details in languages.

Line
(5)
(10)
(15)

24. The primary purpose of the passage is to

(A) analyze an interesting feature of the English language
(B) refute a belief held by some linguists
(C) show that economic theory is relevant to linguistic study
(D) illustrate the confusion that can result from the improper use of language
(E) suggest a way in which languages can be made more nearly perfect

25. The misunderstanding presented by the author in lines 13-14 is similar to which of the following?

I. X uses the word "you" to refer to a group, but Y thinks that X is referring to one person only.
II. X mistakenly uses the word "anomaly" to refer to a typical example, but Y knows that "anomaly" means "exception."
III. X uses the word "bachelor" to mean "unmarried man," but Y mistakenly thinks that bachelor means "unmarried woman."

(A) I only
(B) II only
(C) III only
(D) I and II only
(E) II and III only

26. In presenting the argument, the author does all of the following EXCEPT

(A) give an example
(B) draw a conclusion
(C) make a generalization
(D) make a comparison
(E) present a paradox

27. Which of the following contributes to the misunderstanding described by the author in lines 13-14 ?

(A) It is unclear whom the speaker of the sentence is addressing.
(B) It is unclear to whom the word "his" refers the first time it is used.
(C) It is unclear to whom the word "his" refers the second time it is used.
(D) The meaning of "took" is ambiguous.
(E) It is unclear to whom "He" refers.

GO ON TO THE NEXT PAGE.

Directions: Each question below consists of a word printed in capital letters, followed by five lettered words or phrases. Choose the lettered word or phrase that is most nearly opposite in meaning to the word in capital letters.

Since some of the questions require you to distinguish fine shades of meaning, be sure to consider all the choices before deciding which one is best.

28. FALLACY: (A) personal philosophy (B) imaginative idea (C) unconfirmed theory (D) tentative opinion (E) valid argument

29. DIVULGE: (A) keep secret (B) evaluate by oneself (C) refine (D) restore (E) copy

30. BOYCOTT: (A) extort (B) underwrite (C) underbid (D) stipulate (E) patronize

31. ADULTERATION: (A) consternation (B) purification (C) normalization (D) approximation (E) rejuvenation

32. DEPOSITION: (A) process of congealing (B) process of distilling (C) process of eroding (D) process of evolving (E) process of condensing

33. ENERVATE: (A) recuperate (B) resurrect (C) renovate (D) gather (E) strengthen

34. LOQUACIOUS: (A) tranquil (B) skeptical (C) morose (D) taciturn (E) witty

35. REPINE: (A) intensify (B) excuse (C) express joy (D) feel sure (E) rush forward

36. VENERATION: (A) derision (B) blame (C) avoidance (D) ostracism (E) defiance

37. INVETERATE: (A) casual (B) public (C) satisfactory (D) trustworthy (E) sophisticated

38. UNDERMINE: (A) submerge (B) supersede (C) overhaul (D) undergird (E) intersperse

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

SECTION 3

Time—30 minutes

30 Questions

Numbers: All numbers used are real numbers.

Figures: Position of points, angles, regions, etc. can be assumed to be in the order shown; and angle measures can be assumed to be positive.

Lines shown as straight can be assumed to be straight.

Figures can be assumed to lie in a plane unless otherwise indicated.

Figures that accompany questions are intended to provide information useful in answering the questions. However, unless a note states that a figure is drawn to scale, you should solve these problems NOT by estimating sizes by sight or by measurement, but by using your knowledge of mathematics (see Example 2 below).

Directions: Each of the Questions 1-15 consists of two quantities, one in Column A and one in Column B. You are to compare the two quantities and choose

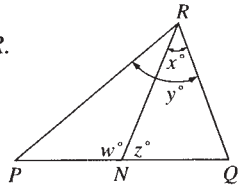
A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Note: Since there are only four choices, NEVER MARK (E).

Common Information: In a question, there may be additional information, centered above the two columns, that concerns one or both of the quantities to be compared. A symbol that appears in both columns represents the same thing in Column A as it does in Column B.

	Column A	Column B	Sample Answers
Example 1:	2×6	$2 + 6$	● Ⓑ Ⓒ Ⓓ Ⓔ

Examples 2-4 refer to ΔPQR.



Example 2:	PN	NQ	Ⓐ Ⓑ Ⓒ ● Ⓔ (since equal measures cannot be assumed, even though PN and NQ appear equal)
Example 3:	x	y	Ⓐ ● Ⓒ Ⓓ Ⓔ (since N is between P and Q)
Example 4:	$w + z$	180	Ⓐ Ⓑ ● Ⓓ Ⓔ (since PQ is a straight line)

	Column A	Column B
1.	3^4	4^3

$x = 2y + 3$

$y = -2$

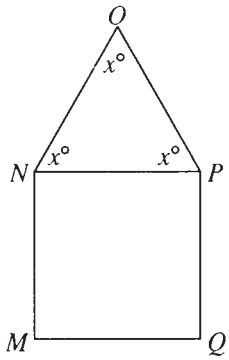
2.	x	-1

$d = 5.03894$ and $\boxed{d}$ is the decimal expression for d rounded to the nearest thousandth.

3.	The number of decimal places where d and $\boxed{d}$ differ	4

$x + 2y > 8$

4.	$2x + 4y$	20



Square $MNPQ$ has area 36.

5.	The perimeter of pentagon $MNOPQ$	30

p and q are different prime numbers. r is the least prime number greater than p, and s is the least prime number greater than q.

6.	$r - p$	$s - q$

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B
	$\lvert -3 \rvert = -m$	
7.	m	3

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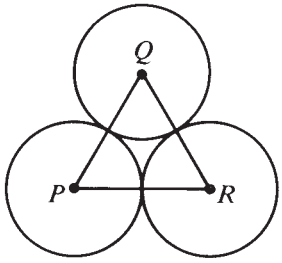
n is an even integer and a multiple of 3.

8.	The remainder when n is divided by 12	6



Equilateral triangle PQR is formed by joining centers P, Q, and R of the circles. Each pair of circles has exactly one point in common.

9.	The perimeter of triangle PQR	The circumference of the circle with center Q

10.	The volume of a cylindrical tank that has a radius of 2 meters and a height of 10 meters	The volume of a cylindrical tank that has a radius of 1 meter and a height of 20 meters

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$ds \neq 0$

11.	The time required to travel d miles at s miles per hour	The time required to travel $\frac{d}{2}$ miles at $2s$ miles per hour

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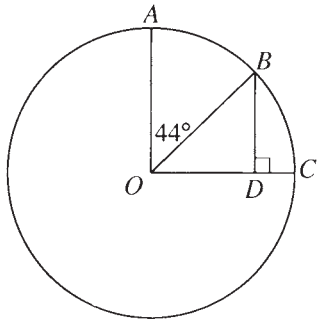
$\triangle RST$ is isosceles and $\angle RST = 40°$.

12.	The sum of the measures of the two angles of $\triangle RST$ that have equal measure	120°

13.	$\sqrt{x^4 + 6x^2 + 9}$	$x^2 + 3$

	Column A	Column B



O is the center of the circle and $\angle AOC$ is a right angle.

14.	OD	BD

Before Maria changed jobs, her salary was 24 percent more than Julio's salary. After Maria changed jobs, her new salary was 24 percent less than her old salary.

15.	Julio's salary	Maria's new salary

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

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16. $(19 - 18 - 17 - 16) - (20 - 19 - 18 - 17) =$

(A) -36
(B) -6
(C) -4
(D) 1
(E) 2

17. If $3x - 2 = 7$, then $4x =$

(A) 3
(B) 5
(C) $\frac{20}{3}$
(D) 9
(E) 12

18. Of the following, which is closest to $\sqrt[3]{30}$?

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

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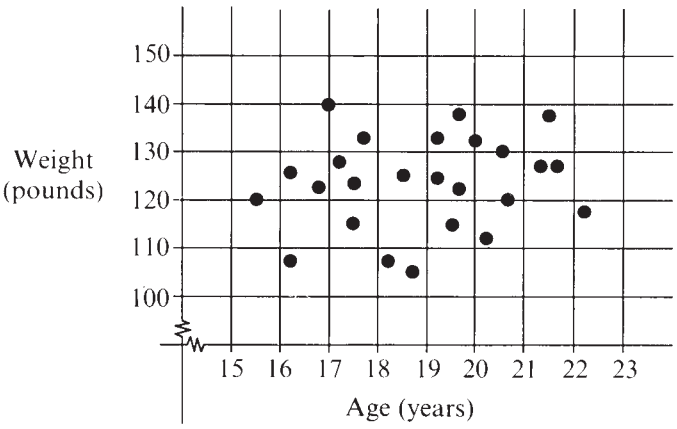


19. The dots on the graph above indicate age and weight for a sample of 25 students. What percent of these students are less than 19 years old and weigh more than 110 pounds?

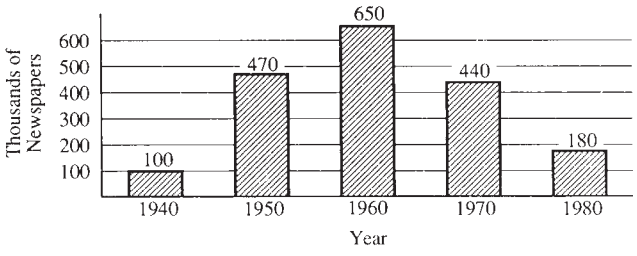
(A) 36% (B) 40% (C) 44%
(D) 48% (E) 52%

20. The greatest number of diagonals that can be drawn from one vertex of a regular 6-sided polygon is

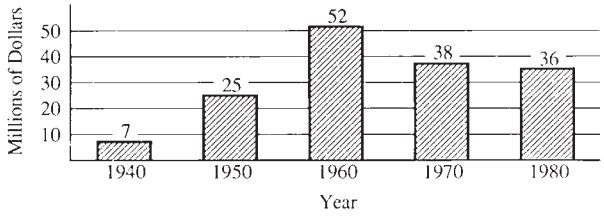
(A) 2 (B) 3 (C) 4
(D) 5 (E) 6

Questions 21-25 refer to the following graphs.

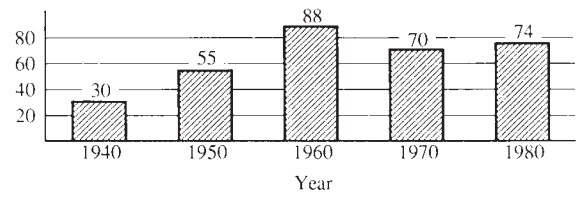
AVERAGE DAILY CIRCULATION FOR NEWSPAPER *X*



TOTAL YEARLY ADVERTISING REVENUE FOR NEWSPAPER *X*



AVERAGE NUMBER OF PAGES PER NEWSPAPER FOR NEWSPAPER *X*



21. In how many of the years shown was the average number of pages per newspaper at least twice as much as the average in 1940 ?

(A) Four
(B) Three
(C) Two
(D) One
(E) None

22. In 1950, if the printing cost per newspaper was \$0.05, what would have been the total cost of printing the average daily circulation?

(A) \$32,500
(B) \$26,000
(C) \$23,500
(D) \$22,000
(E) \$2,600

23. In 1980 the number of dollars of advertising revenue was how many times as great as the average daily circulation?

(A) 500
(B) 200
(C) 100
(D) 50
(E) 20

24. The percent decrease in average daily circulation from 1960 to 1970 was approximately

(A) 10%
(B) 12%
(C) 20%
(D) 26%
(E) 32%

25. Which of the following statements can be inferred from the data?

I. The greatest increase in total yearly advertising revenue over any 10-year period shown was \$27 million.
II. In each of the 10-year periods shown in which yearly advertising revenue decreased, average daily circulation also decreased.
III. From 1970 to 1980 the average number of pages per newspaper increased by 10.

(A) I only
(B) II only
(C) III only
(D) I and II
(E) II and III

GO ON TO THE NEXT PAGE.

26. If $0 < st < 1$, then which of the following can be true?

(A) $s < -1$ and $t > 0$
(B) $s < -1$ and $t < -1$
(C) $s > -1$ and $t < -1$
(D) $s > 1$ and $t < -1$
(E) $s > 1$ and $t > 1$

27. On segment WZ above, if $WY = 21$, $XZ = 26$, and YZ is twice WX, what is the value of XY?

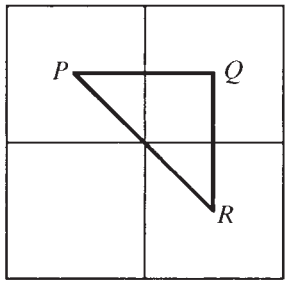
(A) 5
(B) 10
(C) 11
(D) 16
(E) It cannot be determined from the information given.

28. To reproduce an old photograph, a photographer charges x dollars to make a negative, $\frac{3x}{5}$ dollars for each of the first 10 prints, and $\frac{x}{5}$ dollars for each print in excess of 10 prints. If \$45 is the total charge to make a negative and 20 prints from an old photograph, what is the value of x?

(A) 3
(B) 3.5
(C) 4
(D) 4.5
(E) 5

29. Which of the following is equal to $\frac{1}{4}$ of 0.01 percent?

(A) 0.000025
(B) 0.00025
(C) 0.0025
(D) 0.025
(E) 0.25



30. In the figure above, each of the four squares has sides of length x. If $\triangle PQR$ is formed by joining the centers of three of the squares, what is the perimeter of $\triangle PQR$ in terms of x?

(A) $2x\sqrt{2}$

(B) $\frac{x\sqrt{2}}{2} + x$

(C) $2x + \sqrt{2}$

(D) $x\sqrt{2} + 2$

(E) $2x + x\sqrt{2}$

STOP

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

SECTION 4

Time—30 minutes

38 Questions

Directions: Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five lettered words or sets of words. Choose the word or set of words for each blank that best fits the meaning of the sentence as a whole.

1. The senator's reputation, though ------- by false allegations of misconduct, emerged from the ordeal -------.

   (A) shaken. .unscathed
   (B) destroyed. .intact
   (C) damaged. .impaired
   (D) impugned. .unclear
   (E) tarnished. .sullied

2. This poetry is not -------; it is more likely to appeal to an international audience than is poetry with strictly regional themes.

   (A) familiar (B) democratic (C) technical (D) complex (E) provincial

3. Experienced employers recognize that business students who can ------- different points of view are ultimately more effective as managers than are the brilliant and original students who ------- dogmatically to their own formulations.

   (A) discredit. .revert (B) assimilate. .adhere (C) impose. .refer (D) disregard. .incline (E) advocate. .relate

4. Poe's ------- reviews of contemporary fiction, which often find great merit in otherwise ------- literary gems, must make us respect his critical judgment in addition to his well-known literary talent.

   (A) thorough. .completed
   (B) petulant. .unpopular
   (C) insightful. .unappreciated
   (D) enthusiastic. .acclaimed
   (E) harsh. .undeserving

5. The significance of the Magna Carta lies not in its ------- provisions, but in its broader impact: it made the king subject to the law.

   (A) specific (B) revolutionary (C) implicit (D) controversial (E) finite

6. The theory of cosmic evolution states that the universe, having begun in a state of simplicity and -------, has ------- into great variety.

   (A) equilibrium. .modulated
   (B) homogeneity. .differentiated
   (C) contrast. .metamorphosed
   (D) proportion. .accelerated
   (E) intelligibility. .developed

7. Not wishing to appear -------, the junior member of the research group refrained from ------- any criticism of the senior members' plan for dividing up responsibility for the entire project.

   (A) reluctant. .evaluating
   (B) inquisitive. .offering
   (C) presumptuous. .venturing
   (D) censorious. .undercutting
   (E) moralistic. .observing

Directions: In each of the following questions, a related pair of words or phrases is followed by five lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

8. FRAGILE : BREAK ::
   (A) invisible : see
   (B) erratic : control
   (C) flammable : burn
   (D) noxious : escape
   (E) industrial : manufacture

9. MUTTER : INDISTINCT ::
   (A) demand : obedient
   (B) plead : obligatory
   (C) flatter : commendable
   (D) drone : monotonous
   (E) confirm : proven

10. FAULTFINDER : CRITICIZE ::
    (A) luminary : recognize
    (B) athlete : cheer
    (C) arbitrator : mediate
    (D) pharmacist : prescribe
    (E) dawdler : toil

11. PEST : IRKSOME ::
    (A) salesclerk : courteous
    (B) expert : proficient
    (C) enigma : unexpected
    (D) leader : nondescript
    (E) accuser : indicted

12. PROLOGUE : NOVEL ::
    (A) preamble : statute
    (B) sketch : drawing
    (C) movement : symphony
    (D) index : book
    (E) blueprint : building

GO ON TO THE NEXT PAGE.

13. EXPAND : VOLUME ::
    (A) ascend : flight
    (B) proliferate : number
    (C) bend : flexibility
    (D) cool : temperature
    (E) deflect : heading

14. CONTIGUOUS : ABUT ::
    (A) possible : occur
    (B) simultaneous : coincide
    (C) comprehensive : except
    (D) synthetic : create
    (E) constant : stabilize

15. SUITCASE : LUGGAGE ::
    (A) gift : package
    (B) necklace : garment
    (C) room : house
    (D) hat : millinery
    (E) faucet : sink

16. PROHIBITIVE : PURCHASE ::
    (A) preventive : heal
    (B) laudatory : praise
    (C) admonitory : fear
    (D) peremptory : dispute
    (E) imperative : comply

Directions: Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

* It is frequently assumed that the mechanization of work has a revolutionary effect on the lives of the people who operate the new machines and on the society into which the machines have been introduced. For example, it has been suggested that the employment of women in industry took them out of the household, their traditional sphere, and fundamentally altered their position in society. In the nineteenth century, when women began to enter factories, Jules Simon, a French politician, warned that by doing so, women would give up their femininity. Friedrich Engels, however, predicted that women would be liberated from the "social, legal, and economic subordination" of the family by technological developments that made possible the recruitment of "the whole female sex . . . into public industry." Observers thus differed concerning the social desirability of mechanization's effects, but they agreed that it would transform women's lives.

Historians, particularly those investigating the history of women, now seriously question this assumption of transforming power. They conclude that such dramatic technological innovations as the spinning jenny, the sewing machine, the typewriter, and the vacuum cleaner have not resulted in equally dramatic social changes in women's economic position or in the prevailing evaluation of women's work. The employment of young women in textile mills during the Industrial Revolution was largely an extension of an older pattern of employment of young, single women as domestics. It was not the change in office technology, but rather the separation of secretarial work, previously seen as an apprenticeship for beginning managers, from administrative work that in the 1880's created a new class of "dead-end" jobs, thenceforth considered "women's work." The increase in the numbers of married women employed outside the home in the twentieth century had less to do with the mechanization of housework and an increase in leisure time for these women than it did with their own economic necessity and with high marriage rates that shrank the available pool of single women workers, previously, in many cases, the only women employers would hire.

Women's work has changed considerably in the past 200 years, moving from the household to the office or the factory, and later becoming mostly white-collar instead of blue-collar work. Fundamentally, however, the conditions under which women work have changed little since before the Industrial Revolution: the segregation of occupations by gender, lower pay for women as a group, jobs that require relatively low levels of skill and offer women little opportunity for advancement all persist, while women's household labor remains demanding. Recent historical investigation has led to a major revision of the notion that technology is always inherently revolutionary in its effects on society. Mechanization may even have slowed any change in the traditional position of women both in the labor market and in the home.

17. Which of the following statements best summarizes the main idea of the passage?
    (A) The effects of the mechanization of women's work have not borne out the frequently held assumption that new technology is inherently revolutionary.
    (B) Recent studies have shown that mechanization revolutionizes a society's traditional values and the customary roles of its members.
    (C) Mechanization has caused the nature of women's work to change since the Industrial Revolution.
    (D) The mechanization of work creates whole new classes of jobs that did not previously exist.
    (E) The mechanization of women's work, while extremely revolutionary in its effects, has not, on the whole, had the deleterious effects that some critics had feared.

18. The author mentions all of the following inventions as examples of dramatic technological innovations EXCEPT the
    (A) sewing machine (B) vacuum cleaner
    (C) typewriter (D) telephone
    (E) spinning jenny

GO ON TO THE NEXT PAGE.

19. It can be inferred from the passage that, before the Industrial Revolution, the majority of women's work was done in which of the following settings?

(A) Textile mills (B) Private households
(C) Offices (D) Factories (E) Small shops

20. It can be inferred from the passage that the author would consider which of the following to be an indication of a fundamental alteration in the conditions of women's work?

(A) Statistics showing that the majority of women now occupy white-collar positions
(B) Interviews with married men indicating that they are now doing some household tasks
(C) Surveys of the labor market documenting the recent creation of a new class of jobs in electronics in which women workers outnumber men four to one
(D) Census results showing that working women's wages and salaries are, on the average, as high as those of working men
(E) Enrollment figures from universities demonstrating that increasing numbers of young women are choosing to continue their education beyond the undergraduate level

21. The passage states that, before the twentieth century, which of the following was true of many employers?

(A) They did not employ women in factories.
(B) They tended to employ single rather than married women.
(C) They employed women in only those jobs that were related to women's traditional household work.
(D) They resisted technological innovations that would radically change women's roles in the family.
(E) They hired women only when qualified men were not available to fill the open positions.

22. It can be inferred from the passage that the author most probably believes which of the following to be true concerning those historians who study the history of women?

(A) Their work provides insights important to those examining social phenomena affecting the lives of both sexes.
(B) Their work can only be used cautiously by scholars in other disciplines.
(C) Because they concentrate only on the role of women in the workplace, they draw more reliable conclusions than do other historians.
(D) While highly interesting, their work has not had an impact on most historians' current assumptions concerning the revolutionary effect of technology in the workplace.
(E) They oppose the further mechanization of work, which, according to their findings, tends to perpetuate existing inequalities in society.

23. Which of the following best describes the function of the concluding sentence of the passage?

(A) It sums up the general points concerning the mechanization of work made in the passage as a whole.
(B) It draws a conclusion concerning the effects of the mechanization of work which goes beyond the evidence presented in the passage as a whole.
(C) It restates the point concerning technology made in the sentence immediately preceding it.
(D) It qualifies the author's agreement with scholars who argue for a major revision in the assessment of the impact of mechanization on society.
(E) It suggests a compromise between two seemingly contradictory views concerning the effects of mechanization on society.

(This passage is excerpted from an article that was published in 1982.)

Warm-blooded animals have elaborate physiological controls to maintain constant body temperature (in humans, 37° C). Why then during sickness should temperature rise, apparently increasing stress on the infected organism? It has long been known that the level of serum iron in animals falls during infection. Garibaldi first suggested a relationship between fever and iron. He found that microbial synthesis of siderophores—substances that bind iron—in bacteria of the genus *Salmonella* declined at environmental temperatures above 37° C and stopped at 40.3° C. Thus, fever would make it more difficult for an infecting bacterium to acquire iron and thus to multiply. Cold-blooded animals were used to test this hypothesis because their body temperature can be controlled in the laboratory. Kluger reported that of iguanas infected with the potentially lethal bacterium *A. hydrophilia*, more survived at temperatures of 42° C than at 37° C, even though healthy animals prefer the lower temperature. When animals at 42° C were injected with an iron solution, however, mortality rates increased significantly. Research to determine whether similar phenomena occur in warm-blooded animals is sorely needed.

Line (5) (10) (15) (20)

24. The passage is primarily concerned with attempts to determine

(A) the role of siderophores in the synthesis of serum iron
(B) new treatments for infections that are caused by *A. hydrophilia*
(C) the function of fever in warm-blooded animals
(D) the mechanisms that ensure constant body temperature
(E) iron utilization in cold-blooded animals

GO ON TO THE NEXT PAGE.

25. According to the passage, Garibaldi determined which of the following?

(A) That serum iron is produced through microbial synthesis
(B) That microbial synthesis of siderophores in warm-blooded animals is more efficient at higher temperatures
(C) That only iron bound to other substances can be used by bacteria
(D) That there is a relationship between the synthesis of siderophores in bacteria of the genus *Salmonella* and environmental temperature
(E) That bacteria of the genus *Salmonella* require iron as a nutrient

26. Which of the following can be inferred about warm-blooded animals solely on the basis of information in the passage?

(A) The body temperatures of warm-blooded animals cannot be easily controlled in the laboratory.
(B) Warm-blooded animals require more iron in periods of stress than they do at other times.
(C) Warm-blooded animals are more comfortable at an environmental temperature of 37° C than they are at a temperature of 42° C.
(D) In warm-blooded animals, bacteria are responsible for the production of siderophores, which, in turn, make iron available to the animal.
(E) In warm-blooded animals, infections that lead to fever are usually traceable to bacteria.

27. If it were to be determined that "similar phenomena occur in warm-blooded animals" (lines 22-23), which of the following, assuming each is possible, is likely to be the most effective treatment for warm-blooded animals with bacterial infections?

(A) Administering a medication that lowers the animals' body temperature
(B) Injecting the animals with an iron solution
(C) Administering a medication that makes serum iron unavailable to bacteria
(D) Providing the animals with reduced-iron diets
(E) Keeping the animals in an environment with temperatures higher than 37° C

Directions: Each question below consists of a word printed in capital letters, followed by five lettered words or phrases. Choose the lettered word or phrase that is most nearly opposite in meaning to the word in capital letters.

Since some of the questions require you to distinguish fine shades of meaning, be sure to consider all the choices before deciding which one is best.

28. PERTAIN: (A) be apathetic (B) be illegitimate (C) be irrevocable (D) be incongruous (E) be irrelevant

29. FREQUENCY: (A) unity (B) rarity (C) gradualness (D) persistency (E) moderation

30. AMALGAMATE: (A) study (B) circulate (C) reduce (D) endure (E) separate

31. ARRHYTHMIC: (A) timely (B) subordinate (C) terminal (D) lacking precision (E) exhibiting regularity

32. BLITHE: (A) conceited (B) dim (C) sturdy (D) laconic (E) grave

33. POLEMICAL: (A) imitative (B) lavish (C) conciliatory (D) attractive (E) modest

34. PRECIPITATE: (A) deliberate (B) determined (C) dissident (D) desperate (E) divided

35. DEFERENCE: (A) aversion (B) resignation (C) suspicion (D) inattention (E) contempt

36. UNTOWARD: (A) direct (B) decisive (C) necessary (D) favorable and anticipated (E) confident and prepared

37. OPPROBRIOUS: (A) meretricious (B) innocuous (C) invulnerable (D) irreproachable (E) ambitious

38. VERITABLE: (A) impetuous (B) pernicious (C) inefficacious (D) disastrous (E) specious

S T O P

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

SECTION 5

Time—30 minutes

30 Questions

Numbers: All numbers used are real numbers.

Figures: Position of points, angles, regions, etc. can be assumed to be in the order shown; and angle measures can be assumed to be positive.

Lines shown as straight can be assumed to be straight.

Figures can be assumed to lie in a plane unless otherwise indicated.

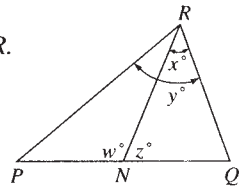
Figures that accompany questions are intended to provide information useful in answering the questions. However, unless a note states that a figure is drawn to scale, you should solve these problems NOT by estimating sizes by sight or by measurement, but by using your knowledge of mathematics (see Example 2 below).

Directions: Each of the Questions 1-15 consists of two quantities, one in Column A and one in Column B. You are to compare the two quantities and choose

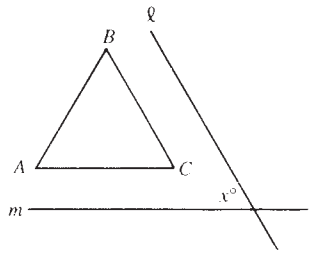
A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

Note: Since there are only four choices, NEVER MARK (E).

Common Information: In a question, there may be additional information, centered above the two columns, that concerns one or both of the questions to be compared. A symbol that appears in both columns represents the same thing in Column A as it does in Column B.

	Column A	Column B	Sample Answers
Example 1:	2×6	$2 + 6$	● Ⓑ Ⓒ Ⓓ Ⓔ
Examples 2-4 refer to ΔPQR.			
Example 2:	PN	NQ	Ⓐ Ⓑ Ⓒ ● Ⓔ (since equal measures cannot be assumed, even though PN and NQ appear equal)
Example 3:	x	y	Ⓐ ● Ⓒ Ⓓ Ⓔ (since N is between P and Q)
Example 4:	$w + z$	180	Ⓐ Ⓑ ● Ⓓ Ⓔ (since PQ is a straight line)

	Column A	Column B
1.	The number of months in 7 years	The number of days in 12 weeks
2.	$1 - \frac{1}{27}$	$\frac{8}{9} + \frac{1}{81}$



$\triangle ABC$ is equilateral. Line ℓ is parallel to side BC and line m is parallel to side AC.

3.	x	60

$r > s > 0$

4.	$\frac{rs}{r}$	$\frac{rs}{s}$

The circumference of circle C is 18π.

5.	The diameter of circle C	9
6.	9^7	10,000,000

The volume of a cube is 64.

7.	The area of the base of the cube	32

t is a positive integer.

$$\frac{4}{7} = \frac{t}{s}$$

8.	s	7
9.	$(0.82)^2(0.82)^3$	$(0.82)^6$

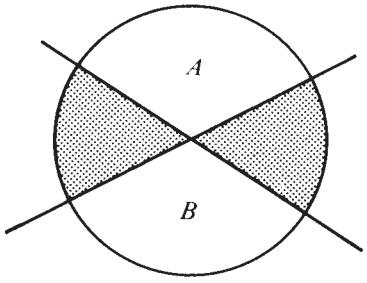
For all real numbers a, let $a^* = 1 - a$.

10.	$((-1)^*)^*$	2^*

GO ON TO THE NEXT PAGE.

A if the quantity in Column A is greater;
B if the quantity in Column B is greater;
C if the two quantities are equal;
D if the relationship cannot be determined from the information given.

	Column A	Column B



The areas of the two shaded regions of the circle are equal.

11. The area of unshaded region A of the circle | The area of unshaded region B of the circle

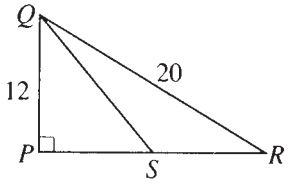
$x \neq 0$

12. $\frac{x}{|x|}$ | 1

Team X scored p points more than team Y, and the two teams together scored a total of 10 points.

13. Twice the number of points team Y scored | $10 - p$

14. $(x - 1)(x)(x + 1)$ | $(x)(x)(x)$



The area of $\triangle PQS$ is 45.

15. The length of segment PS | The length of segment SR

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

16. In a certain shop, notebooks that normally sell for 59 cents each are on sale at 2 for 99 cents. How much can be saved by purchasing 10 of these notebooks at the sale price?

(A) \$0.85 (B) \$0.95 (C) \$1.10 (D) \$1.15 (E) \$2.00

17. Which of the following is a solution to $x + x^2 = 1$?

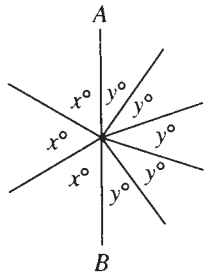
(A) -1

(B) 0

(C) $\frac{1}{2}$

(D) 1

(E) None of the above

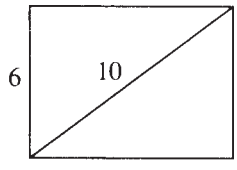


18. In the figure above, AB is a line segment. What is the value of $\frac{x - y}{x + y}$?

(A) $\frac{5}{24}$ (B) $\frac{1}{4}$ (C) $\frac{7}{16}$ (D) $\frac{11}{24}$ (E) $\frac{7}{13}$

19. If the average (arithmetic mean) of 5 consecutive integers is 12, what is the sum of the least and greatest of the 5 integers?

(A) 24 (B) 14 (C) 12 (D) 11 (E) 10



20. What is the perimeter of the rectangle shown above?

(A) 14 (B) 24 (C) 28 (D) 38 (E) 48

GO ON TO THE NEXT PAGE.

Questions 21-25 refer to the following chart.

PROFILE OF CONGRESS IN YEAR X
(total membership: 535)

House of Representatives		Senate
	Party	
292	Democratic	62
143	Republican	38
435	Total	100
	Sex	
418	Male	100
17	Female	0
	Age	
27	Youngest	34
77	Oldest	80
48	Average (arithmetic mean)	54
	Religion	
255	Protestant	69
107	Catholic	12
18	Jewish	5
4	Mormon	3
51	Other	11
	Profession	
215	Lawyer	63
81	Business Executive or Banker	15
45	Educator	6
14	Farmer or Rancher	6
22	Career Government Official	0
24	Journalist or Communications Executive	4
2	Physician	0
1	Veterinarian	1
0	Geologist	2
6	Worker or Skilled Tradesperson	0
25	Other	3
	Ethnic Group	
17	Black American	1
2	Asian American	3
4	Hispanic American	0

21. In the Senate, if 25 male members were replaced by 25 female members, the ratio of male members to female members would be

(A) 4 to 1
(B) 3 to 1
(C) 3 to 2
(D) 2 to 1
(E) 1 to 1

22. Approximately what percent of the members of Congress are lawyers?

(A) 63%
(B) 58%
(C) 56%
(D) 52%
(E) 49%

23. If 5 senators are Catholic Democrats, how many senators are neither Catholic nor Democratic?

(A) 79
(B) 74
(C) 69
(D) 31
(E) 21

24. If all lawyers and all women in the House of Representatives vote for the passage of a bill, how many more votes will be needed for a majority?

(A) 435
(B) 220
(C) 3
(D) 0
(E) It cannot be determined from the information given.

25. Which of the following can be inferred from the information given in the chart?

I. More than 80 percent of the men in Congress are members of the House of Representatives.
II. The percent of members who are categorized as farmers or ranchers is greater for the House of Representatives than for the Senate.
III. The median age in the Senate is 57.

(A) I only
(B) II only
(C) III only
(D) I and II
(E) I and III

GO ON TO THE NEXT PAGE.

26. If $xy \neq 0$, $\frac{x-1}{xy} =$

(A) $\frac{1}{x} - \frac{1}{xy}$

(B) $\frac{x}{y} - \frac{1}{xy}$

(C) $\frac{1}{y} - x$

(D) $\frac{1}{y} - \frac{1}{xy}$

(E) $\frac{1}{xy} - \frac{1}{y}$

27. The number 0.01 is how many times as great as the number $(0.0001)^2$?

(A) 10^2

(B) 10^4

(C) 10^6

(D) 10^8

(E) 10^{10}

28. A certain cake recipe states that the cake should be baked in a pan 8 inches in diameter. If Jules wants to use the recipe to make a cake of the same depth but 12 inches in diameter, by what factor should he multiply the recipe ingredients?

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

(B) $2\frac{1}{4}$

(C) $1\frac{1}{2}$

(D) $1\frac{4}{9}$

(E) $1\frac{1}{3}$

29. If $x > 0$ and $y > 0$, which of the following is equivalent to $\frac{x}{y}\sqrt{\frac{y}{x^2}}$?

(A) 1

(B) $\frac{\sqrt{x}}{\sqrt{y}}$

(C) $\sqrt{x}$

(D) $\frac{1}{\sqrt{x}}$

(E) $\frac{1}{\sqrt{y}}$

30. The cost, in dollars, of manufacturing x refrigerators is $9{,}000 + 400x$. The amount received when selling these x refrigerators is $500x$ dollars. What is the least number of refrigerators that must be manufactured and sold so that the amount received is at least equal to the manufacturing cost?

(A) 10
(B) 18
(C) 45
(D) 90
(E) 100

STOP

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

Appendix B

Interpretive Data for the Verbal and Quantitative Sections

Answer Key and Percentages* of Examinees Answering Each Question Correctly

VERBAL ABILITY					
Section II			Section IV		
Number	Answer	P+	Number	Answer	P+
1	A	90	1	A	84
2	B	82	2	E	86
3	B	81	3	B	87
4	E	77	4	C	80
5	D	70	5	A	74
6	C	62	6	B	71
7	C	28	7	C	68
8	D	96	8	C	98
9	C	85	9	D	76
10	C	46	10	C	70
11	A	46	11	B	63
12	D	46	12	A	60
13	A	39	13	B	48
14	E	36	14	B	48
15	E	35	15	D	26
16	A	26	16	D	35
17	C	63	17	A	58
18	B	63	18	D	97
19	A	64	19	B	89
20	C	75	20	D	51
21	E	64	21	B	66
22	D	46	22	A	33
23	D	51	23	B	48
24	B	62	24	C	74
25	A	59	25	D	70
26	E	52	26	A	51
27	B	66	27	C	48
28	E	89	28	E	89
29	A	86	29	B	87
30	E	76	30	E	69
31	B	78	31	E	58
32	C	41	32	E	30
33	E	37	33	C	44
34	D	36	34	A	25
35	C	35	35	E	31
36	A	29	36	D	36
37	A	18	37	D	25
38	D	21	38	E	19

QUANTITATIVE ABILITY					
Section III			Section V		
Number	Answer	P+	Number	Answer	P+
1	A	85	1	C	94
2	C	84	2	A	80
3	B	79	3	C	85
4	D	76	4	B	76
5	C	57	5	A	64
6	D	70	6	B	67
7	B	69	7	B	72
8	D	52	8	D	69
9	B	52	9	A	34
10	A	50	10	C	38
11	A	42	11	D	19
12	D	26	12	D	59
13	C	57	13	C	42
14	B	52	14	D	28
15	A	35	15	B	40
16	E	75	16	B	88
17	E	86	17	E	80
18	D	81	18	B	77
19	A	83	19	A	74
20	B	63	20	C	71
21	B	92	21	B	84
22	C	90	22	D	58
23	B	71	23	D	54
24	E	58	24	E	63
25	D	71	25	A	34
26	C	47	26	D	51
27	D	32	27	C	52
28	E	44	28	B	32
29	A	19	29	E	49
30	E	47	30	D	57

* Estimated P + is based on those examinees who took the General Test between October 1, 1989 and September 30, 1992.

Score Conversions and Percents Below* for the Verbal and Quantitative Sections

	VERBAL		QUANTITATIVE			VERBAL		QUANTITATIVE	
Raw Score	Scaled Score	% Below	Scaled Score	% Below	Raw Score	Scaled Score	% Below	Scaled Score	% Below
74-76	800	99			39	430	39	610	53
73	790	99			38	420	36	600	50
72	780	99			37	410	33	580	46
71	760	99			36	400	30	570	44
70	750	99			35	390	27	560	42
					34	380	25	550	40
69	740	99			33	380	25	540	37
68	730	99			32	370	22	530	36
67	720	98			31	360	19	520	34
66	710	97			30	350	17	500	29
65	700	97							
64	680	95			29	340	14	490	27
63	670	94			28	340	14	480	25
62	660	93			27	330	12	470	23
61	650	92			26	320	9	450	20
60	640	91	800	94	25	310	7	440	18
					24	310	7	420	15
59	630	89	800	94	23	300	5	410	14
58	620	88	800	94	22	290	4	390	11
57	600	85	800	94	21	280	3	380	10
56	590	82	790	91	20	280	3	370	9
55	580	80	780	89					
54	570	78	770	86	19	270	2	350	6
53	560	76	760	84	18	260	1	340	6
52	550	73	740	80	17	260	1	320	4
51	540	70	730	78	16	250	1	300	3
50	540	70	720	75	15	240	1	290	2
					14	230	1	270	1
49	530	67	710	73	13	220	1	260	1
48	520	65	700	71	12	210	1	240	1
47	510	62	690	69	11	210	1	220	1
46	490	57	680	68	10	200	1	200	1
45	480	54	670	66					
44	470	51	660	64	9	200	1	200	1
43	460	48	650	61	8	200	1	200	1
42	460	48	640	59	7	200	1	200	1
41	450	45	630	57	6	200	1	200	1
40	440	42	620	55	5	200	1	200	1
					0-4	200	1	200	1

* Percent scoring below the scaled score is based on the performance of all examinees who took the General Test between October 1, 1998, and September 30, 2001.

Verbal and Quantitative Mean Scores Classified by Broad Intended Graduate Major Field

(Based on the performance of seniors and nonenrolled college graduates** who tested between October 1, 1998, and September 30, 2001)

Broad Intended Graduate Major Field	Approximate Number of Examinees	Verbal Ability	Quantitative Ability
Life Sciences	107,600	464	568
Physical Sciences	45,700	491	694
Engineering	46,600	474	721
Social Sciences	79,500	484	548
Humanities and Arts	39,300	541	549
Education	36,200	450	521
Business	6,500	444	570

** Limited to those who earned their college degrees up to two years prior to the test date. Note that this table does not include summary information on the approximately 45,388 examinees whose response was invalid (misgrids, blanks, etc.) or the approximately 17,474 examinees whose response was "undecided." Most of the standard deviations of the score distribution represented by the means in this table are between 90 and 125.