GRE Model Question Paper 2

Time Allowed : 1 Hour 58 Minutes	**Maximum Marks :** 340

General Instructions

Read the following instructions very carefully and strictly follow them:

1. There is no penalty for incorrect answers on the Verbal Reasoning and Quantitative Reasoning sections. This means you should always answer every question, even if you have to guess.
2. Within any section of the test, you can mark questions you want to review and change your answers as long as the time for that section has not expired.
3. The Analytical Writing section is always presented first. The Verbal Reasoning and Quantitative Reasoning sections may appear in any order after the essay.
4. The test is taken on a computer, and test-takers are provided with scratch paper or a small whiteboard for notes.
5. The Quantitative Reasoning section includes an on-screen calculator.
6. There are no breaks during the test. Leaving your seat at any point will not stop the timer for the current section.

SECTION 1
Time: 30 Minutes
38 Questions

---

1. A computer program can provide information in ways that force students to — learning instead of being merely —- of knowledge.
(A) shore up.. reservoirs
(B) accede to.. consumers
(C) participate in .. recipients
(D) compensate for.. custodians
(E) profit from.. beneficiaries

---

2. The form and physiology of leaves vary according to the – in which they develop: for example, leaves display a wide range of adaptations to different degrees of light and moisture.
(A) relationship
(B) species
(C) sequence
(D) patterns
(E) environment

3. One theory about intelligence sees —- as the logical structure underlying thinking and insists that since animals are mute, they must be —- as well.
(A) behavior.. inactive
(B) instinct.. cooperative
(C) heredity.. thoughtful
(D) adaptation.. brutal
(E) language.. mindless

---

4. Though —- in her personal life, Edna St. Vincent Millay was nonetheless —- about her work, usually producing several pages of complicated rhyme in a day.
(A) jaded.. feckless
(B) verbose.. ascetic
(C) vain.. humble
(D) impulsive.. disciplined
(E) self-assured.. sanguine

---

5. The children's —- natures were in sharp contrast to the even-tempered dispositions of their parents.
(A) mercurial
(B) blithe
(C) phlegmatic
(D) introverted
(E) artless

---

6. By —- scientific rigor with a quantitative approach, researchers in the social sciences may often have —- their scope to those narrowly circumscribed topics that are well suited to quantitative methods.
(A) undermining.. diminished
(B) equating.. enlarged
(C) vitiating.. expanded
(D) identifying.. limited
(E) imbuing.. broadened

---

7. As early as the seventeenth century, philosophers called attention to the —- character of the issue, and their twentieth-century counterparts still approach it with —-.
(A) absorbing.. indifference
(B) unusual.. composure
(C) complex.. antipathy

(D) auspicious.. caution
(E) problematic.. uneasiness

---

8. TRIPOD: CAMERA::
(A) scaffolding: ceiling
(B) prop: set
(C) easel: canvas
(D) projector: film
(E) frame: photograph

---

9. AQUATIC: WATER::
(A) cumulus: clouds
(B) inorganic: elements
(C) variegated: leaves
(D) rural: soil
(E) arboreal: trees

---

10. EMOLLIENT: SUPPLENESS::
(A) unguent: elasticity
(B) precipitant: absorption
(C) additive: fusion
(D) desiccant: dryness
(E) retardant: permeability

---

11. DRAW: DOODLE::
(A) talk: whisper
(B) travel: ramble
(C) run: walk
(D) calculate: add
(E) eat: gobble

---

12. CONSPICUOUS: SEE::
(A) repulsive: forget
(B) prohibited: discount
(C) deceptive: delude
(D) impetuous: disregard
(E) transparent: understand

---

13. IMMATURE: DEVELOPED::
(A) accessible: exposed
(B) theoretical: conceived
(C) tangible: identified
(D) irregular: classified
(E) incipient: realized

---

14. PERSPICACITY: ACUTE::
(A) adaptability: prescient
(B) decorum: complacent
(C) caprice: whimsical
(D) discretion: literal
(E) ignorance: pedantic

---

15. PLAYFUL: BANTER::
(A) animated: originality
(B) exaggerated: hyperbole
(C) insidious: effrontery
(D) pompous: irrationality
(E) taciturn: solemnity

---

16. QUARANTINE: CONTAGION::
(A) blockage: obstacle
(B) strike: concession
(C) embargo: commerce
(D) vaccination: inoculation
(E) prison: reform

Passage for Questions 17-18:

Influenced by the view of some twentieth-century feminists that women's position within the family is one of the central factors determining women's social position, some historians have underestimated the significance of the woman suffrage movement. These historians contend that nineteenth-century suffragism was less radical and, hence, less important than, for example, the moral reform movement or domestic feminism—two nineteenth-century movements in which women struggled for more power and autonomy within the family. True, by emphasizing these struggles, such historians have broadened the conventional view of nineteenth-century feminism, but they do a historical disservice to suffragism. Nineteenth-century feminists and anti-feminist alike perceived the suffragists' demand for enfranchisement as the most radical element in women's protest, in part because suffragists were demanding power that was not

based on the institution of the family, women's traditional sphere. When evaluating nineteenth-century feminism as a social force, contemporary historians should consider the perceptions of actual participants in the historical events.

17. The author asserts that the historians discussed in the passage have
(A) influenced feminist theorists who concentrate on the family
(B) honored the perceptions of the women who participated in the women suffrage movement
(C) treated feminism as a social force rather than as an intellectual tradition
(D) paid little attention to feminist movements
(E) expanded the conventional view of nineteenth-century feminism

---

18. The author of the passage asserts that some twentieth-century feminists have influenced some historians view of the
(A) significance of the woman suffrage movement
(B) importance to society of the family as an institution
(C) degree to which feminism changed nineteenth-century society
(D) philosophical traditions on which contemporary feminism is based
(E) public response to domestic feminism in the nineteenth century

---

19. The author of the passage suggests that which of the following was true of nineteenth-century feminists?
(A) Those who participated in the moral reform movement were motivated primarily by a desire to reconcile their private lives with their public positions.
(B) Those who advocated domestic feminism, although less visible than the suffragists, were in some ways the more radical of the two groups.
(C) Those who participated in the woman suffrage movement sought social roles for women that were not defined by women's familial roles.
(D) Those who advocated domestic feminism regarded the gaining of more autonomy within the family as a step toward more participation in public life.
(E) Those who participated in the nineteenth-century moral reform movement stood midway between the positions of domestic feminism and suffragism.

---

20. The author implies that which of the following is true of the historians discussed in the passage?
(A) They argue that nineteenth-century feminism was not as significant a social force as twentieth-century feminism has been.
(B) They rely too greatly on the perceptions of the actual participants in the events they study.
(C) Their assessment of the relative success of nineteenth-century domestic feminism does not adequately take into account the effects of antifeminist rhetoric.
(D) Their assessment of the significance of nineteenth-century suffragism differs considerably from that of nineteenth-century feminists.
(E) They devote too much attention to nineteenth-century suffragism at the expense of more radical movements that emerged shortly after the turn of the century.

Passage for Questions 21-25:

Many objects in daily use have clearly been influenced by science, but their form and function, their dimensions and appearance, were determined by technologists artisans, designers, inventors, and engineers—using non-scientific modes of thought. Many features and qualities of the objects that a technologist thinks about cannot be reduced to unambiguous verbal descriptions; they are dealt with in the mind by a visual, nonverbal process. In the development of Western technology, it has been non-verbal thinking, by and large, that has fixed the outlines and filled in the details of our material surroundings. Pyramids, cathedrals, and rockets exist not because of geometry or thermodynamics, but because they were first a picture in the minds of those who built them. The creative shaping process of a technologist's mind can be seen in nearly every artifact that exists. For example, in designing a diesel engine, a technologist might impress individual ways of nonverbal thinking on the machine by continually using an intuitive sense of rightness and fitness. What would be the shape of the combustion chamber? Where should the valves be placed? Should it have a long or short piston? Such questions have a range of answers that are supplied by experience, by physical requirements, by limitations of available space, and not least by a sense of form. Some decisions, such as wall thickness and pin diameter, may depend on scientific calculations, but the nonscientific component of design remains primary.

Design courses, then, should be an essential element in engineering curricula. Nonverbal thinking, a central mechanism in engineering design, involves perceptions, the stock-in-trade of the artist, not the scientist. Because perceptive processes are not assumed to entail "hard thinking," nonverbal thought is sometimes seen as a primitive stage in the development of cognitive processes and inferior to verbal or mathematical thought. But it is paradoxical that when the staff of the Historic American Engineering Record wished to have drawings made of machines and isometric views of industrial processes for its historical record of American engineering, the only college students with the requisite abilities were not engineering students, but rather students attending architectural schools.

If courses in design, which in a strongly analytical engineering curriculum provide the background required for practical problem-solving, are not provided, we can expect to encounter silly but costly errors occurring in advanced engineering systems. For example, early models of high-speed railroad cars loaded with sophisticated controls were unable to operate in a snowstorm because a fan sucked snow into the electrical system. Absurd random failures that plague automatic control systems are not merely trivial aberrations; they are a reflection of the chaos that results when design is assumed to be primarily a problem in mathematics.

21. In the passage, the author is primarily concerned with
(A) identifying the kinds of thinking that are used by technologists
(B) stressing the importance of nonverbal thinking in engineering design
(C) proposing a new role for nonscientific thinking in the development of technology
(D) contrasting the goals of engineers with those of technologists
(E) criticizing engineering schools for emphasizing science in engineering curricula

22. It can be inferred that the author thinks engineering curricula are
(A) strengthened when they include courses in design
(B) weakened by the substitution of physical science courses for courses designed to develop mathematical skills
(C) strong because nonverbal thinking is still emphasized by most of the courses
(D) strong despite the errors that graduates of such curricula have made in the development of automatic control systems
(E) strong despite the absence of nonscientific modes of thinking

---

23. Which of the following statements best illustrates the main point of lines 1-28 of the passage?
(A) When a machine like a rotary engine malfunctions, it is the technologist who is best equipped to repair it.
(B) Each component of an automobile—for example, the engine or the fuel tank—has a shape that has been scientifically determined to be best suited to that component's function.
(C) A telephone is a complex instrument designed by technologists using only nonverbal thought.
(D) The designer of a new refrigerator should consider the designs of other refrigerators before deciding on its final form.
(E) The distinctive features of a suspension bridge reflect its designer's conceptualization as well as the physical requirements of its site.

---

24. Which of the following statements would best serve as an introduction to the passage?
(A) The assumption that the knowledge incorporated in technological developments must be derived from science ignores the many non-scientific decisions made by technologists.
(B) Analytical thought is no longer a vital component in the success of technological development.
(C) As knowledge of technology has increased, the tendency has been to lose sight of the important role played by scientific thought in making decisions about form, arrangement, and texture.
(D) A movement in engineering colleges toward a technician's degree reflects a demand for graduates who have the nonverbal reasoning ability that was once common among engineers.
(E) A technologist thinking about a machine, reasoning through the successive steps in a dynamic process, can actually turn the machine over mentally.

---

25. The author calls the predicament faced by the Historic American Engineering Record "paradoxical" (lines 36-37) most probably because
(A) the publication needed drawings that its own staff could not make
(B) architectural schools offered but did not require engineering design courses for their students
(C) college students were qualified to make the drawings while practicing engineers were not
(D) the drawings needed were so complicated that even students in architectural schools had difficulty making them.

(E) engineering students were not trained to make the type of drawings needed to record the development of their own discipline.

---

26. According to the passage, random failures in automatic control systems are "not merely trivial aberrations" (line 53) because

(A) automatic control systems are designed by engineers who have little practical experience in the field

(B) the failures are characteristic of systems designed by engineers relying too heavily on concepts in mathematics

(C) the failures occur too often to be taken lightly

(D) designers of automatic control systems have too little training in the analysis of mechanical difficulties

(E) designers of automatic control systems need more help from scientists who have a better understanding of the analytical problems to be solved before such systems can work efficiently

---

27. The author uses the example of the early models of high-speed railroad cars primarily to

(A) weaken the argument that modern engineering systems have major defects because of an absence of design courses in engineering curricula

(B) support the thesis that the number of errors in modern engineering systems is likely to increase

(C) illustrate the idea that courses in design are the most effective means for reducing the cost of designing engineering systems

(D) support the contention that a lack of attention to the nonscientific aspects of design results in poor conceptualization by engineers

(E) weaken the proposition that mathematics is a necessary part of the study of design

---

28. IGNITE:

(A) amplify

(B) douse

(C) obscure

(D) blemish

(E) replicate

---

29. MUTATE:

(A) recede

(B) grow larger

(C) link together

(D) remain the same

(E) decrease in speed

---

30. FRAGMENT:
(A) ensue
(B) revive
(C) coalesce
(D) balance
(E) accommodate

---

31. OSTENSIBLE:
(A) gargantuan
(B) inauspicious
(C) intermittent
(D) perpetual
(E) inapparent

---

32. PROLIXITY:
(A) ceremoniousness
(B) flamboyance
(C) succinctness
(D) inventiveness
(E) lamentation

---

33. CONCERTED:
(A) meant to obstruct
(B) not intended to last
(C) enthusiastically supported
(D) run by volunteers
(E) individually devised

---

34. FORBEARANCE:
(A) fragility
(B) impatience
(C) freedom
(D) nervousness
(E) tactlessness

---

35. COSSETED:
(A) unspoiled
(B) irrepressible
(C) serviceable

(D) prone to change
(E) free from prejudice

---

36. PROBITY:
(A) timidity
(B) sagacity
(C) impertinence
(D) uncertainty
(E) unscrupulousness

---

37. ESCHEW:
(A) habitually indulge in
(B) take without authorization
(C) leave unsaid
(D) boast about
(E) handle carefully

---

38. REDOUBTABLE:
(A) trustworthy
(B) unschooled
(C) credulous
(D) not formidable
(E) not certain

SECTION 2
Time: 30 Minsutes
38 Questions

Questions 1-6

A newsstand will display exactly one copy each of six different magazines— M, O, P, S, T, and V— in a single row on a rack. Each magazine will occupy exactly one of the six positions, numbered consecutively 1 through 6. The magazines must be displayed in accordance with the following rules:

Either P or else T occupies position 1.
Either S or else T occupies position 6.
M and O, not necessarily in that order, occupy consecu- tively numbered positions.
V and T, not necessarily in that order, occupy consecu- tively numbered positions.

1. Which of the following is an order in which the six magazines can be arranged, from position 1 through position 6?
(A) M, O, P, S, V, T
(B) P, O, S, M, V, T
(C) P, V, T, O, M, S
(D) P, V, T, S, O, M
(E) T, P, V, M, O, S

---

2. If P occupies position 3, which of the following must be true?
(A) M occupies position 4.
(B) O occupies position 2.
(C) S occupies position 5.
(D) T occupies position 6.
(E) V occupies position 2.

---

3. If O and T, not necessarily in that order, occupy consecutively numbered positions, then T can be in position
(A) 1
(B) 2
(C) 4
(D) 5
(E) 6

---

4. Which of the following can be true?
(A) M occupies position 4 and P occupies position 5.
(B) P occupies position 4 and V occupies position 5.
(C) S occupies position 2 and P occupies position 3.
(D) P occupies position 2.
(E) S occupies position 5.

---

5. If V occupies position 4, then T must occupy the position that is numbered exactly one lower than the position occupied by
(A) M
(B) O
(C) P
(D) S
(E) V

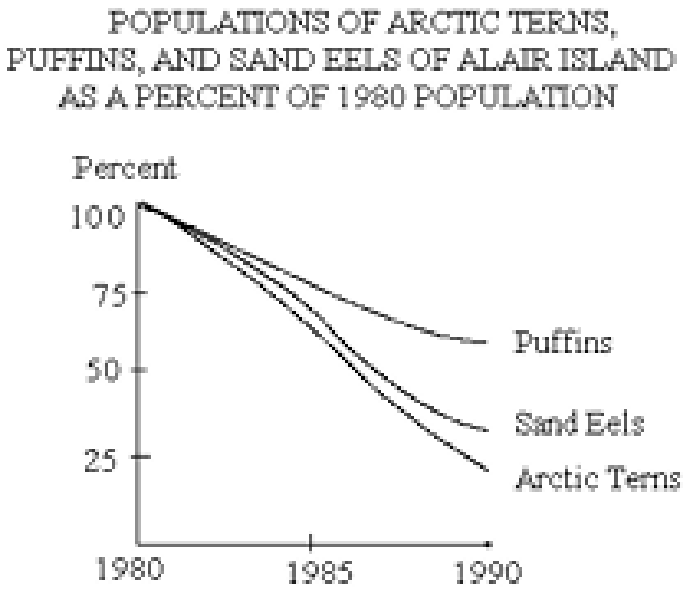
---

6. If S and V, not necessarily in that order, occupy consecutively numbered positions, which of the following must be true?

(A) M occupies position 4.
(B) O occupies position 2.
(C) P occupies position 1.
(D) S occupies position 6.
(E) T occupies position 6.

---

7. Patel: Although enrollment in the region's high school has been decreasing for several years, enrollment at the elementary school has grown considerably. Therefore, the regional school board proposes building a new elementary school. Quintero: Another solution would be to convert some high school classrooms temporarily into classrooms for elementary school students. Which of the following, if true, most helps to support Quintero's alternative proposal?
(A) Some rooms at the high school cannot be converted into rooms suitable for the use of elementary school students.
(B) The cost of building a high school is higher than the cost of building an elementary school.
(C) Although the birth rate has not increased, the number of families sending their children to the region's high school has increased markedly.
(D) A high school atmosphere could jeopardize the safety and self-confidence of elementary school students.
(E) Even before the region's high school population began to decrease, several high school classrooms rarely needed to be used.



8. Which of the following, if true, most helps explain the difference in the rates of decline between 1980 and 1990 in population of puffins and arctic terns, two kinds of seabirds for which sand eels serve as a primary source of food?
(A) Puffins switched in part from their preferred food of sand eels to rockfish and other fish,

but arctic terns did not.
(B) The marked decline in the populations of puffins and arctic terns that occurred on Alair Island did not occur on other similar islands nearby, where there are substantial populations of both species.
(C) The decline in sand eels was due to changes in environmental conditions that affected the reproduction of eels rather than to overfishing by people.
(D) The main diet of puffin and arctic tern chicks on Alair Island in 1980 consisted of young sand eels.
(E) Unusual severe weather that disrupted the breeding cycle of the sand eels of Alair Island in 1989 also damaged the nests of puffins but not those of arctic terns.

---

9. Peter: More than ever before in Risland, college graduates with science degrees are accepting permanent jobs in other fields. That just goes to show that scientists in Risland are not being paid enough. Lila: No, it does not. These graduates are not working in science for the simple reason that there are not enough jobs in science in Risland to employ all of these graduates. Which of the following, if true in Risland, would most undermine the reasoning in Peter's argument?
(A) The college graduates with science degrees who are not working in science are currently earning lower salaries than they would earn as scientists.
(B) Fewer college students than ever before are receiving degrees in science.
(C) The number of jobs in science has steadily risen in the last decade.
(D) A significant number of college graduates with science degrees worked at low-paying jobs while they were in college.
(E) Every year some recent college graduates with science degrees accept permanent jobs in nonscientific fields.

Questions 10-15

Exactly six lec tures will be given one at a time at a one- day conference. Two of the lectures— S and T— will be given by resident speakers, the other four— W, X, Y, and Z— will be given by visiting speakers. At least two but no more than four of the lectures will be given before lunch; the remaining lectures will be given after lunch. The following conditions must be observed:

S will be the fourth lecture.
Exactly one of the lectures by a resident will be given before lunch.
Y will be given at some time before T is given.
If W is given before lunch, Y will be given after lunch.
10. Which of the following can be the order of lectures and lunch at the conference?
(A) W, X, Lunch, Y, S, T, Z
(B) X, Y, T, Lunch, S, Z, W
(C) Y, T, Lunch, S, W, X, Z
(D) Z, T, W, S, Lunch, Y, X
(E) Z, W, Y, S, Lunch, X, T

---

11. If exactly two lectures are given before lunch, they must be
(A) X and T
(B) Y and T
(C) Z and T
(D) Z and W
(E) Z and Y

---

12. If exactly three lectures, including Y and Z, are given before lunch, which of the following can be true?
(A) T is the second lecture.
(B) T is the fifth lecture.
(C) W is the third lecture.
(D) X is the first lecture.
(E) X is the third lecture.

---

13. If T is the sixth lecture, which of the following must be true?
(A) X is the first lecture.
(B) X is the second lecture.
(C) Exactly two lectures are given before lunch.
(D) Exactly three lectures are given before lunch.
(E) Exactly four lectures are given before lunch.

---

14. If S and Z are both given after lunch, which of the following must be true?
(A) X is given before lunch.
(B) X is given after lunch.
(C) Y is given before lunch.
(D) T is the third lecture.
(E) Z is the fifth lecture.

---

15. Which of the following lectures CANNOT be given immediately before lunch?
(A) S
(B) T
(C) X
(D) Y
(E) Z

Questions 16-22

A circus has seven fenced enclosures, numbered 1 through 7, for two animals: a lion and a tiger. Each enclosure is connected to adjacent enclosures by interior gates. There are exactly

eight such gates, each connecting one enclosure to exactly one other enclosure: enclosure 1 is connected to enclosures 2, 3 and 4; enclosure 3 to enclosures 1, 2, 4, and 5; and enclosure 5 to enclosures 3, 6, and 7. These gates provide the only connections between enclosures. Occasionally a trainer moves the animals. Taking either animals from one enclosure to an adjacent enclosure through a gate is called a "transfer." The following conditions are strictly observed:

The two animals cannot be together in any enclosure or gate.
Transfers cannot occur simultaneously
In moving either one animal or both to a specified enclosure or enclosures, the minimum number of transfers needed to achieve the specified result are used.

16. If the lion is in enclosure 1 and the tiger is in enclosure 3, and the lion is to be moved to enclosure 7, the tiger could be in which of the following enclosures when all of the transfers have been completed?
(A) 1
(B) 3
(C) 4
(D) 5
(E) 6

---

17. If the tiger is in enclosure 5 and the lion is in enclosure 3, moving the tiger to which of the following enclosures requires exactly two transfers?
(A) 2
(B) 3
(C) 4
(D) 6
(E) 7

---

18. If the lion is in enclosure 6 and the tiger is in enclosure 7, and the lion is to be moved to enclosure 7 and the tiger to enclosure 6, then which of the following must be true?
(A) The lion is transferred to enclosure 3 at some time during the move.
(B) The tiger is transferred to enclosure 5 twice.
(C) One of the two animals is transferred to enclosure 3 twice.
(D) Three transfers to enclosure 5 are made.
(E) At least one transfer is made to either enclosure 2 or enclosure 4.

---

19. If the lion is in enclosure 3 and the tiger is in enclosure 4, and the lion is to be moved to enclosure 5 and the tiger to enclosure 7, then exactly how many transfers must be made?
(A) Four
(B) Five
(C) Six

(D) Seven
(E) Eight

---

20. If the lion is in enclosure 1 and the tiger is in enclosure 7, and the lion is to be transferred to enclosure 3 and the tiger to enclosure 1, then which of the following CANNOT be true?
(A) The lion is transferred to enclosure 2 in the first transfer.
(B) The lion is transferred to enclosure 3 in the second transfer.
(C) The lion is transferred to enclosure 4 in the second transfer.
(D) The tiger is transferred to enclosure 5 in the first transfer.
(E) The tiger is transferred to enclosure 3 in the second transfer.

---

21. If the lion is in enclosure 1 and the tiger is in enclosure 3, and the lion is to be moved to enclosure 6 and the tiger to enclosure 5, then the second transfer could be a transfer of the

(A) lion to enclosure 2
(B) lion to enclosure 5
(C) tiger to enclosure 4
(D) tiger to enclosure 5
(E) tiger to enclosure 7

---

22. If the lion is in enclosure 3 and the tiger is in enclosure 6, and the lion is to be moved to enclosure 6 and the tiger to enclosure 3, then which of the following must be true?

(A) Exactly five enclosures are used in the move
(B) One animal is transferred exactly twice as many times as the other animal.
(C) All of the transfers of the lion are completed before any transfer of the tiger occurs.
(D) At one point one of the animals is transferred to either enclosure 2 or enclosure 4.
(E) At one point neither the lion nor the tiger is in enclosure 3, enclosure 5, or enclosure 6

---

23. Counselor: Every year a popular newsmagazine publishes a list of United States colleges, ranking them according to an overall numerical score that is a composite of ratings according to several criteria. However, the overall scores generally should not be used by students as the basis for deciding to which colleges to apply. Which of the following, if true, most helps to justify the counselor's recommendation?

(A) The vast majority of people who purchase the magazine in which the list appears are not college-bound students.

(B) Colleges that are ranked highest in the magazine's list use this fact in advertisements aimed at attracting students.
(C) The rankings seldom change from one year to the next.
(D) The significance that particular criteria have for any two students is likely to differ according to the students' differing needs.
(E) Some college students who are pleased with their schools considered the magazine's rankings before deciding which college to attend.

---

24. A thorough search of Edgar Allan Poe's correspondence has turned up not a single letter in which he mentions his reputed morphine addiction. On the basis of this evidence it is safe to say that Poe's reputation for having been a morphine addict is undeserved and that reports of his supposed addiction are untrue.
Which of the following is assumed by the argument above?

(A) Reports claiming that Poe was addicted to morphine did not begin to circulate until after his death.
(B) None of the reports of Poe's supposed morphine addiction can be traced to individuals who actually knew Poe.
(C) Poe's income from writing would not have been sufficient to support a morphine addiction.
(D) Poe would have been unable to carry on an extensive correspondence while under the influence of morphine.
(E) Fear of the consequences would not have prevented Poe from indicating in his correspondence that he was addicted to morphine.

---

25. Adelle: The government's program to reduce the unemployment rate in the province of Carthena by encouraging job creation has failed, since the rate there has not changed appreciably since the program began a year ago.
Fran: But the unemployment rate in Carthena had been rising for three years before the program began, so the program is helping.
Which of the following, if true, most strongly counters Fran's objection to Adelle's argument?

(A) The government is advised by expert economists, some of whom specialize in employment issues.
(B) The unemployment rate in the province of Carthena has historically been higher than that of the country as a whole.
(C) The current government was elected by a wide margin, because of its promises to reduce the unemployment rate in Carthena.
(D) Around the time the government program began, large numbers of unemployed Carthena residents began leaving the province to look for work elsewhere.
(E) The unemployment rate in Carthena had been relatively stable until shortly before the current government took office.

SECTION 3
Time: 30 Minutes
25 Questions

---

1. $x^2 - 1 = y$
$x = 3$
Column A: y^2
Column B: 80

---

2. The gross receipts from the sale of t tickets, at $17 per ticket, total $16,660.
Column A: t
Column B: 1,000

---

3. Points T and U are on a circle with center O.
Column A: The length of segment OT
Column B: The length of segment TU

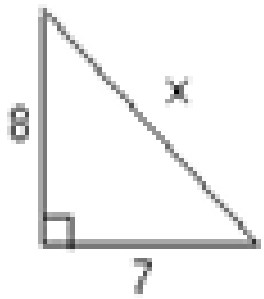
(A) The quantity in Column A is greater.
(B) The quantity in Column B is greater.
(C) The two quantities are equal.
(D) The relationship cannot be determined from the information given.

---

4. A box contains 20 marbles, all of which are solid colored; 5 of the marbles are green and 10 of the marbles are red.
Column A: The probability that a marble selected at random from the box will be green
Column B: The probability that a marble selected at random from the box will be neither red nor green

---

5. Column A: Eleven thousand plus eleven hundred plus eleven
Column B: 11,111



6.
Column A: x
Column B: 15

---

7. The cost c of an order of n special envelopes is given by $c = (\$0.50)n + \$15.00$.
Column A: The cost of an order of 500 special envelopes
Column B: $260

---

8. The average (arithmetic mean) of 7, 9, and x is greater than 9.
Column A: x
Column B: 11

---

9. $a > 0$
Column A: $(4\sqrt{5a})^2$
Column B: $40a$

---

10. Column A: $\frac{0.27}{0.53}$
Column B: $\frac{0.027}{0.053}$

---

11. Each of the numbers x, y, w, and z (not necessarily distinct) can have any of the values 2, 3, 9, or 14.
Column A: $\frac{x}{y}$
Column B: wz

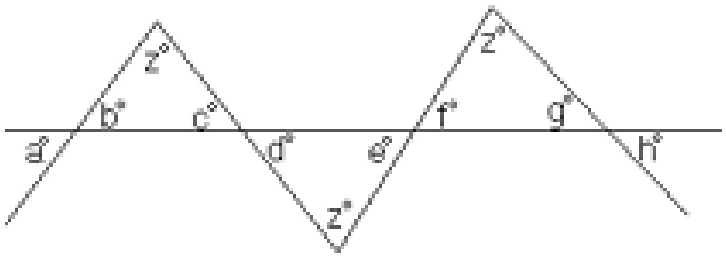
---

12. $a = -219$
Column A: $a^7 + a^5$

Column B: $a^8 + a^{18}$

---

13. Column A: $x^2 + 2x + 1$
Column B: x^2



14.
$a > 0$
Column A: d
Column B: e

---

15. w, x, y, and z are consecutive positive integers and w ¡ x ¡ y ¡ z.
Column A: The remainder when $(w + x)(x + y)(y + z)$ is divided by 2
Column B: 1

---

16. A certain machine drills 30 holes in 8 minutes. At that constant rate, how many holes will 4 such machines drill in $1\frac{1}{3}$ hours?

(A) 300
(B) 900
(C) 960
(D) 1,200
(E) 2,560

---

17. Tina, Ed, and Lauren agree to share the cost of a gift and to make their contributions in proportion to their ages. Ed's age is $\frac{1}{2}$ of Tina's age, and Lauren's age is $\frac{1}{3}$ of Ed's age. If Lauren's share of the cost is \$2.50, what is the cost of the gift?

(A) \$25
(B) \$20
(C) \$15

(D) $12
(E) $10

---

18. Three solid cubes of lead, each with edges 10 centimeters long, are melted together in a level, rectangular-shaped pan. The base of the pan has inside dimensions of 20 centimeters by 30 centimeters, and the pan is 15 centimeters deep. If the volume of the solid lead is approximately the same as the volume of the melted lead, approximately how many centimeters deep is the melted lead in the pan?

(A) 2.5
(B) 3
(C) 5
(D) 7.5
(E) 9

---

19. Which of the following CANNOT be the sum of two integers that have a product of 30?

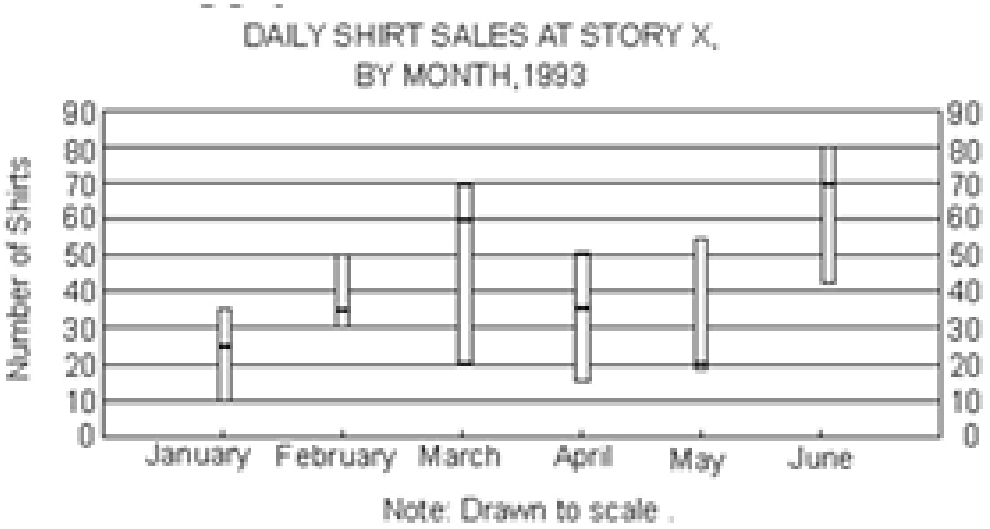
(A) 31
(B) 17
(C) -11
(D) -13
(E) -21

---

20. In the rectangular coordinate system above, if point (a, b), shown, and the two points (4a, b) and (2a, 2b), not shown, were connected by straight lines, then the area of the resulting triangular region, in terms of a and b, would be

(A) $\frac{ab}{2}$
(B) ab
(C) $\frac{3ab}{2}$
(D) 2ab
(E) 4ab

Questions 21-22 refer to the following graph.



21. What was the range in the daily number of shirts sold during March?

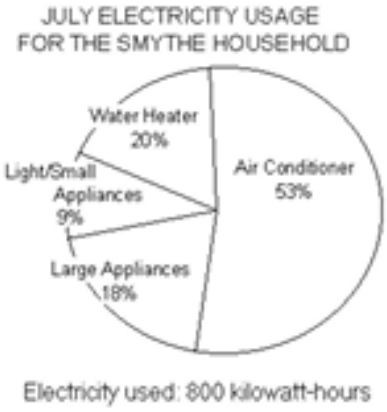
(A) 20
(B) 45
(C) 50
(D) 60
(E) 70

---

22. The average (arithmetic mean) number of shirts sold per day during February was approximately what percent greater than the average number sold during January?

(A) 10%
(B) 20%
(C) 30%
(D) 40%
(E) 70%

Questions 23-25 refer to the following graph.



23. For which two uses of electricity was the ratio of the amounts of electricity used most nearly 3 to 1?

(A) Water heater and lights/small appliances
(B) Large appliances and lights/small appliances
(C) Air conditioner and water heater
(D) Air conditioner and lights/small appliances
(E) Air conditioner and large appliances

---

24. The electricity used by the water heater was measured separately and its cost per kilowatt-hour was one-half the cost per kilowatt-hour of the rest of the electricity used. The cost of the electricity used by the water heater was most nearly what fraction of the total cost of all the electricity used?

(A) $\frac{1}{11}$
(B) $\frac{1}{9}$
(C) $\frac{1}{8}$
(D) $\frac{1}{5}$
(E) It cannot be determined from the information given.

---

25. In November the Smythe household used the same total amount of electricity as in July, but the water heater used 33 percent of this total amount. By approximately what percent did the amount of electricity used by the water heater increase from July to November?

(A) 13%
(B) 33%
(C) 50%
(D) 65%
(E) 130%

26. One integer will be randomly selected from the integers 11 to 60, inclusive. What is the probability that the selected integer will be a perfect square or a perfect cube?

(A) 0.1
(B) 0.125
(C) 0.16
(D) 0.5
(E) 0.9

---

27. The measures of two angles of a parallelogram differ by 52 degrees. The number of degrees in the smaller angle is

(A) 38
(B) 52
(C) 64
(D) 76
(E) 128

---

28. The odds in favor of winning a game can be found by computing the ratio of the probability of winning to the probability of not winning. If the probability that Pat will win a game is $\frac{4}{9}$, what are the odds that Pat will win the game?

(A) 4 to 5
(B) 4 to 9
(C) 5 to 4
(D) 5 to 9
(E) 9 to 5

---

29. If a, b, c, and d are consecutive integers such that a ¡ b ¡ c ¡ d, then in terms of a, the sum a + b + d =

(A) a + 4
(B) 2a + 3
(C) 3a + 2
(D) 3a + 3
(E) 3a + 4

---

30. $2^x + 2^x =$

(A) 2^{x+1}
(B) 2^{x+2}
(C) 2^{2x}
(D) 4^{x}
(E) 4^{2x}

SECTION 4
Time: 30 Minutes
30 Questions

---

1. Since most if not all learning occurs through —-, relating one observation to another, it would be strange indeed if the study of other cultures did not also illuminate the study of our own.

(A) assumptions
(B) experiments
(C) comparisons
(D) repetitions
(E) impressions

---

2. The new —- of knowledge has created —- people: everyone believes that his or her subject cannot and possibly should not be understood by others.

(A) specialization.. barriers between
(B) decline.. associations among
(C) redundancy.. complacency in
(D) disrepute.. concern for
(E) promulgation.. ignorance among

---

3. If a species of parasite is to survive, the host organisms must live long enough for the parasite to —-; if the host species becomes —-, so do its parasites.

(A) atrophy.. healthy
(B) reproduce.. extinct
(C) disappear.. widespread
(D) succumb.. nonviable
(E) mate.. infertile

---

4. The author argues for serious treatment of such arts as crochet and needlework, finding in too many art historians a cultural blindness —- to their —- textiles as a

medium in which women artists predominate.

(A) traceable.. prejudice against
(B) opposed.. distrust of
(C) referring.. need for
(D) reduced.. respect for
(E) corresponding.. expertise in

---

5. Those who fear the influence of television deliberately —- its persuasive power, hoping that they might keep knowledge of its potential to effect social change from being widely disseminated.

(A) promote
(B) underplay
(C) excuse
(D) laud
(E) suspect

---

6. Because the high seriousness of their narratives resulted in part from their metaphysics, Southern writers were praised for their —- bent.

(A) technical
(B) discursive
(C) hedonistic
(D) philosophical
(E) scientific

---

7. Far from being —-, Pat was always —- to appear acquiescent.

(A) unctuous.. loath
(B) brazen.. reluctant
(C) ignoble.. concerned
(D) obsequious.. eager
(E) gregarious.. willing

---

8. CHUCKLE: LAUGHING::

(A) uproar: shouting
(B) whisper: speaking
(C) hum: whistling
(D) lecture: conversing
(E) murmur: mimicking

9. PARAGRAPH: ESSAY::

(A) object: verb
(B) phrase: preposition
(C) interjection: parenthesis
(D) clause: sentence
(E) colloquialism: expression

---

10. STUPOR: ALERT::

(A) rebellion: defiant
(B) despair: hopeful
(C) expectation: unfulfilled
(D) circumspection: careful
(E) ennui: listless

---

11. PAEAN: JOY::

(A) dirge: grief
(B) oratory: persuasion
(C) aria: opera
(D) chant: choir
(E) lecture: instruction

---

12. RENEGADE: ALLEGIANCE::

(A) revolutionary: reform
(B) aesthete: discernment
(C) apostate: faith
(D) politician: challenge
(E) criminal: imprisonment

---

13. DEVOTED: ZEALOUS::

(A) affectionate: demonstrative
(B) animated: lively
(C) rabid: extreme
(D) objective: indifferent
(E) careful: fastidious

---

14. VESTIGE: REMAINDER::

(A) figurine: statue
(B) knife: cutlery
(C) hub: wheel
(D) angle: slope
(E) inventory: goods

---

15. EPHEMERAL: ENDURE::

(A) insensitive: cooperate
(B) infirm: react
(C) ineffectual: proceed
(D) inelastic: stretch
(E) inflammable: ignite

---

16. MISDEMEANOR: CRIME::

(A) interview: conversation
(B) lapse: error
(C) oath: promise
(D) rebuke: criticism
(E) vendetta: feud

One explanation for the tendency of animals to be more vigilant in smaller groups than in larger ones assumes that the vigilant behavior—looking up, for example—is aimed at predators. If individuals on the edge of a group are more vigilant because they are at greater risk of being captured, then individuals on average would have to be more vigilant in smaller groups, because the animals on the periphery of a group form a greater proportion of the whole group as the size of the group diminishes.

However, a different explanation is necessary in cases where the vigilant behavior is not directed at predators. J. Krebs has discovered that great blue herons look up more often when in smaller flocks than when in larger ones, solely as a consequence of poor feeding conditions. Krebs hypothesizes that the herons in smaller flocks are watching for herons that they might follow to better feeding pools, which usually attract larger numbers of the birds.

17. It can be inferred from the passage that in species in which vigilant behavior is directed at predators, the tendency of the animals to be more vigilant in smaller

groups than in larger ones would most likely be minimized if which of the following were true?

(A) The vigilance of animals on the periphery of a group always exceeded that of animals located in its interior, even when predators were not in the area.
(B) The risk of capture for individuals in a group was the same, whether they were located in the interior of the group or on its periphery.
(C) Animals on the periphery of a group tended to be less capable of defending themselves from attack by predators than animals located in the interior of the group.
(D) Animals on the periphery of a group tended to bear marks that were more distinctive to predators than animals located in the interior of the group.
(E) Animals on the periphery of a group tended to have shorter life spans than animals located in the interior of the group.

---

18. Which of the following best describes the relationship of the second paragraph to the first?

(A) The second paragraph relies on different evidence in drawing a conclusion similar to that expressed in the first paragraph.
(B) The second paragraph provides further elaboration on why an assertion made at the end of the first paragraph proves to be true in most cases.
(C) The second paragraph provides additional information in support of a hypothesis stated in the first paragraph.
(D) The second paragraph provides an example of a case in which the assumption described in the first paragraph is unwarranted.
(E) The second paragraph describes a phenomenon that has the same cause as the phenomenon described in the first paragraph.

---

19. It can be inferred from the passage that the author of the passage would be most likely to agree with which of the following assertions about vigilant behavior?

(A) The larger the group of animals, the higher the probability that individuals in the interior of the group will exhibit vigilant behavior.
(B) Vigilant behavior exhibited by individuals in small groups is more effective at warding off predators than the same behavior exhibited by individuals in larger groups.
(C) Vigilant behavior is easier to analyze in species that are preyed upon by many different predators than in species that are preyed upon by relatively few of them.
(D) The term "vigilant," when used in reference to the behavior of animals, does not refer exclusively to behavior aimed at avoiding predators.
(E) The term "vigilant," when used in reference to the behavior of animals, usually refers to behavior exhibited by large groups of animals.

The passage provides information in support of which of the following assertions?

20. The passage provides information in support of which of the following assertions?

(A) The avoidance of predators is more important to an animal's survival than is the quest for food.
(B) Vigilant behavior aimed at predators is seldom more beneficial to groups of animals than to individual animals.
(C) Different species of animals often develop different strategies for dealing with predators.
(D) The size of a group of animals does not necessarily reflect its success in finding food.
(E) Similar behavior in different species of animals does not necessarily serve the same purpose.

The earliest controversies about the relationship between photography and art centered on whether photography's fidelity to appearances and dependence on a machine allowed it to be a fine art as distinct from merely a practical art. Throughout the nineteenth century, the defense of photography was identical with the struggle to establish it as a fine art. Against the charge that photography was a soulless, mechanical copying of reality, photographers asserted that it was instead a privileged way of seeing, a revolt against commonplace vision, and no less worthy an art than painting.

Ironically, now that photography is securely established as a fine art, many photographers find it pretentious or irrelevant to label it as such. Serious photographers variously claim to be finding, recording, impartially observing, witnessing events, exploring themselves—anything but making works of art. In the nineteenth century, photography's association with the real world placed it in an ambivalent relation to art; late in the twentieth century, an ambivalent relation exists because of the Modernist heritage in art. That important photographers are no longer willing to debate whether photography is or is not a fine art, except to proclaim that their own work is not involved with art, shows the extent to which they simply take for granted the concept of art imposed by the triumph of Modernism: the better the art, the more subversive it is of the traditional aims of art.

Photographers' disclaimers of any interest in making art tell us more about the harried status of the contemporary notion of art than about whether photography is or is not art. For example, those photographers who suppose that, by taking pictures, they are getting away from the pretensions of art as exemplified by painting remind us of those Abstract Expressionist painters who imagined they were getting away from the intellectual austerity of classical Modernist painting by concentrating on the physical act of painting. Much of photography's prestige today derives from the convergence of its aims with those of recent art, particularly with the dismissal of abstract art implicit in the phenomenon of Pop painting during the 1960's. Appreciating photographs is a relief to sensibilities tired of the mental exertions demanded by abstract art. Classical Modernist painting—that

is, abstract art as developed in different ways by Picasso, Kandinsky, and Matisse—presupposes highly developed skills of looking and a familiarity with other paintings and the history of art. Photography, like Pop painting, reassures viewers that art is not hard; photography seems to be more about its subjects than about art.

Photography, however, has developed all the anxieties and self-consciousness of a classic Modernist art. Many professionals privately have begun to worry that the promotion of photography as an activity subversive of the traditional pretensions of art has gone so far that the public will forget that photography is a distinctive and exalted activity—in short, an art.

21. In the passage, the author is primarily concerned with

(A) defining the Modernist attitude toward art
(B) explaining how photography emerged as a fine art after the controversies of the nineteenth century
(C) explaining the attitudes of serious contemporary photographers toward photography as art and placing those attitudes in their historical context
(D) defining the various approaches that serious contemporary photographers take toward their art and assessing the value of each of those approaches
(E) identifying the ways that recent movements in painting and sculpture have influenced the techniques employed by serious photographers

---

22. Which of the following adjectives best describes "the concept of art imposed by the triumph of Modernism" as the author represents it in lines 25-27?

(A) Objective
(B) Mechanical
(C) Superficial
(D) Dramatic
(E) Paradoxical

---

23. The author introduces Abstract Expressionist painters (lines 34) in order to

(A) provide an example of artists who, like serious contemporary photographers, disavowed traditionally accepted aims of modern art
(B) call attention to artists whose works often bear a physical resemblance to the works of serious contemporary photographers
(C) set forth an analogy between the Abstract Expressionist painters and classical Modernist painters
(D) provide a contrast to Pop artists and others who created works that exemplify the Modernist heritage in art
(E) provide an explanation of why serious photography, like other contemporary visual forms, is not and should not pretend to be an art

24. According to the author, the nineteenth-century defenders of photography mentioned in the passage stressed that photography was

(A) a means of making people familiar with remote locales and unfamiliar things
(B) a technologically advanced activity
(C) a device for observing the world impartially
(D) an art comparable to painting
(E) an art that would eventually replace the traditional arts

---

25. According to the passage, which of the following best explains the reaction of serious contemporary photographers to the question of whether photography is an art?

(A) The photographers' belief that their reliance on an impersonal machine to produce their art requires the surrender of the authority of their personal vision
(B) The photographers' fear that serious photography may not be accepted as an art by the contemporary art public
(C) The influence of Abstract Expressionist painting and Pop Art on the subject matter of the modern photograph
(D) The photographers' belief that the best art is subversive of art as it has previously been defined
(E) The notorious difficulty of defining art in its relation to realistic representation

---

26. According to the passage, certain serious contemporary photographers expressly make which of the following claims about their photographs?

(A) Their photographs could be created by almost anyone who had a camera and the time to devote to the activity.
(B) Their photographs are not examples of art but are examples of the photographers' impartial observation of the world.
(C) Their photographs are important because of their subjects but not because of the responses they evoke in viewers.
(D) Their photographs exhibit the same ageless principles of form and shading that have been used in painting.
(E) Their photographs represent a conscious glorification of the mechanical aspects of twentieth-century life.

---

27. It can be inferred from the passage that the author most probably considers serious contemporary photography to be a

(A) contemporary art that is struggling to be accepted as fine art
(B) craft requiring sensitivity but by no means an art

(C) mechanical copying of reality
(D) modern art that displays the Modernist tendency to try to subvert the prevailing aims of art
(E) modern art that displays the tendency of all Modernist art to become increasingly formal and abstract

---

28. PREOCCUPATION:

(A) finality
(B) innocence
(C) liberality
(D) unconcern
(E) tolerance

---

29. CHROMATIC:

(A) opaque
(B) colorless
(C) lengthy
(D) profound
(E) diffuse

---

30. PEDESTRIAN:

(A) widely known
(B) strongly motivated
(C) discernible
(D) uncommon
(E) productive

---

31. EQUIVOCATE:

(A) communicate straightforwardly
(B) articulate persuasively
(C) instruct exhaustively
(D) study painstakingly
(E) reproach sternly

---

32. DENUDE:

(A) crowd out
(B) skim over
(C) change color
(D) cover
(E) sustain

---

33. RANCOR:

(A) deference
(B) optimism
(C) courage
(D) superiority
(E) goodwill

---

34. OSSIFIED:

(A) vulnerable to destruction
(B) subject to illusion
(C) worthy of consideration
(D) capable of repetition
(E) amenable to change

---

35. CONTROVERT:

(A) substantiate
(B) transform
(C) ameliorate
(D) simplify
(E) differentiate

---

36. PROTRACT:

(A) thrust
(B) reverse
(C) curtail
(D) disperse
(E) forestall

---

37. ABRADE:

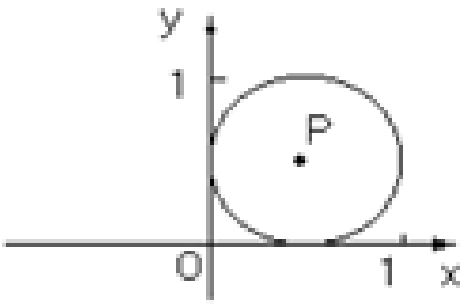
(A) unfasten
(B) prolong
(C) augment
(D) extinguish
(E) transmit

---

38. APOLOGIST:

(A) egotist
(B) wrongdoer
(C) freethinker
(D) detractor
(E) spendthrift

SECTION 5
Time: 30 Minutes
38 Questions



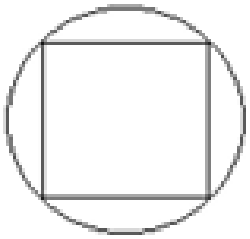
1.
In the rectangular coordinate system, the circle with center P is tangent to both the x- and y-axes.
Column A: The x-coordinate of P
Column B: The y-coordinate of P

---

2. Column A: $\frac{3}{5} + \frac{2}{3}$
Column B: 1

---

3. Column A: $|x^2|$
Column B: $|x|^2$



4.
The square is inscribed in the circle.
Column A: The length of a diagonal of the square
Column B: The length of a diameter of the circle

---

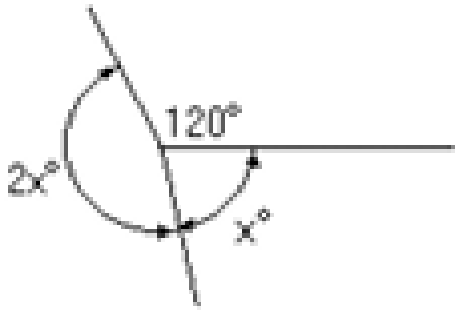
5. $x < y < 20$
Column A: $x + y$
Column B: 35

---

6. In college M the average (arithmetic mean) number of students per course is 30 and the ratio of the number of students to the number of faculty is 20 to 1.
Column A: The total number of students in College M
Column B: 600

---

7. $x > 0$
Column A: $\frac{590+x}{800}$
Column B: $\frac{600+x}{790}$



8.
Column A: x
Column B: 80

---

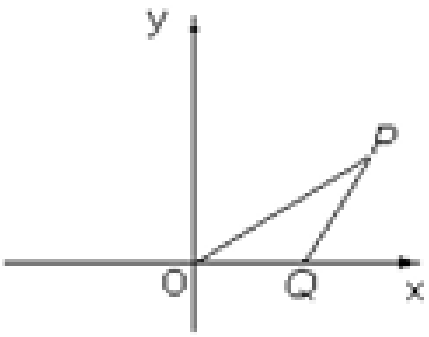
9. Integer n will be randomly selected from the integers 1 to 13, inclusive.
Column A: The probability that n will be even
Column B: The probability that n will be odd

---

10. $p + q = 1$
$0 < p < q$
Column A: $\frac{1}{pq}$
Column B: 1

---

11. $2x + 3y = 29$
$3x + 4y = 41$
Column A: $x + y$
Column B: 12



12.
$PQ = OQ = 5$
Column A: The area of region OPQ
Column B: 10

---

13. Column A: $(\sqrt{5} + \sqrt{5})^2$
Column B: 20

---

14. $\frac{n}{4} + \frac{r}{8} = \frac{s}{8} + \frac{t}{6}$**, where n, r, s, and t are positive integers.**
Column A: $2n + r$
Column B: $2s + t$

15. In the xy-coordinate system, the point (x, y) lies on the circle with equation $x^2 + y^2 = 1$.
Column A: $x + y$
Column B: 1.01

---

16. A health food store prepares a breakfast food that consists of oats, raisins, and nuts mixed in the ratio 9:2:1, respectively, by weight. If the nuts in the mixture weigh 9.2 pounds, how many pounds does the total mixture weigh?

(A) 82.2
(B) 92.2
(C) 101.2
(D) 110.4
(E) 165.6

---

17. $3 - 2[5 - 7(3 + 2)] =$

(A) -30
(B) -10
(C) 23
(D) 63
(E) 77

---

18. For every positive integer n greater than 1, n! is defined as the product of the first n positive integers. For example, $4! = (1)(2)(3)(4) = 24$**. What is the value of** $\frac{12!}{10!}$**?**

(A) 2
(B) 66
(C) 121
(D) 132
(E) 144

---

19. A market survey showed that 76 percent of the visitors at a certain resort came from Pacific or southwestern states. Of these, $\frac{2}{3}$ **were from California, and 87 percent of the Californians were from southern California. Approximately what percent of the visitors at the resort were from southern California?**

(A) 40%
(B) 45%

(C) 50%
(D) 55%
(E) 65%

---

20. If $\frac{5^4-1}{n}$ is an integer an n is an integer, then n could be each of the following EXCEPT

(A) 4
(B) 6
(C) 13
(D) 25
(E) 26

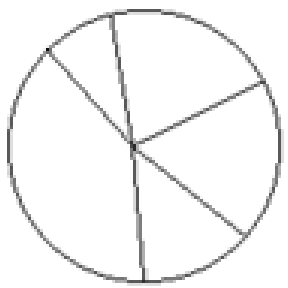
Questions 21-22 refer to the following table.

DISTRIBUTION OF A FAMILY'S ANNUAL BUDGET OF $42,000

Category	Percent
Food	20%
Housing	18%
Entertainment	5%
Savings	15%
Goods and Services	42%

21. What is the ratio of the amount budgeted annually for food to the amount budgeted annually for savings?

(A) 4 to 3
(B) 4 to 7
(C) 5 to 3
(D) 7 to 3
(E) 7 to 4

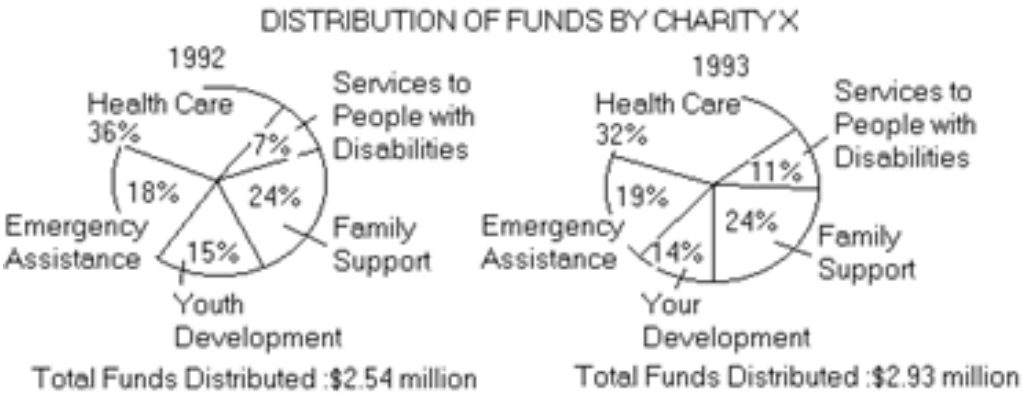


22. If a pie graph (such as the one above) were drawn to scale to represent the budget distribution into the five categories, what would be the measure of the

central angle of the sector representing savings?

(A) 15°
(B) 30°
(C) 36°
(D) 42°
(E) 54°

Questions 23-25 refer to the following graphs.



23. The funds distributed in 1992 for youth development were approximately

(A) $38,000
(B) $170,000
(C) $380,000
(D) $450,000
(E) $1,700,000

---

24. The increase in the amount of money distributed for family support from 1992 to 1993 was closest to which of the following?

(A) $0
(B) $24,000
(C) $40,000
(D) $60,000
(E) $94,000

---

25. If all of the emergency assistance funds in 1993 were distributed among 40 groups, which of the following is closest to the average (arithmetic mean) amount

distributed per group?

(A) \$10,000
(B) \$11,000
(C) \$12,000
(D) \$13,000
(E) \$14,000

26. The curve above consists of three semicircles: AB, BC, and CD. The diameter of AB is 2, the diameter of BC is twice the diameter of AB, and the diameter of CD is twice the diameter of BC. What is the total length of the curve?

(A) 2π
(B) 4π
(C) 6π
(D) 7π
(E) 8π

---

27. What is the cost, in cents, of using a certain fax machine to send n pages of a report if the total cost for sending the first k pages is r cents and the cost for sending each additional page is s cents? (Assume that n ¿ k)

(A) $r + s(n - k)$
(B) $r + s(n + k)$
(C) $rs(n + k)$
(D) $kr + s(n - k)$
(E) $kr + ns$

---

28. A rectangular solid has a square base and altitude of 7. If the volume of the solid is 252, then the perimeter of the square base is

(A) 9
(B) 24
(C) 28
(D) 36
(E) 49

29. In a series of races, 10 toy cars are raced, 2 cars at a time. If each car must race each of the other cars exactly twice, how many races must be held?

(A) 40
(B) 90
(C) 100
(D) 180
(E) 200

---

30. $(2^{10} - 2^9)(2^8 - 2^7) =$

(A) 2
(B) 2^2
(C) 2^4
(D) 2^8
(E) 2^{16}

SECTION 6
Time: 30 Minutes
25 Questions

---

1. Soft Drink Manufacturer: Our new children's soft drink, RipeCal, is fortified with calcium. Since calcium is essential for developing healthy bones, drinking RipeCal regularly will help make children healthy.
Consumer Advocate: But RipeCal also contains large amounts of sugar, and regularly consuming large amounts of sugar is unhealthful, especially for children.
In responding to the soft drink manufacturer, the consumer advocate does which of the following?

(A) Challenges the manufacturer's claim about the nutritional value of calcium in children's diets
(B) Argues that the evidence cited by the manufacturer, when properly considered, leads to a conclusion opposite to that reached by the manufacturer.
(C) Implies that the manufacturer of a product is typically unconcerned with the nutritional value of that product.
(D) Questions whether a substance that is healthful when eaten in moderation can be unhealthful when eaten in excessive amounts.
(E) Presents additional facts that call into question the conclusion drawn by the manufacturer.

---

2. Over a period of several months, researchers attached small lights to the backs of wetas—flightless insects native to New Zealand—enabling researchers for the

first time to make comprehensive observations of the insects' nighttime activities. Thus, since wetas forage only at night, the researchers' observations will significantly improve knowledge of the normal foraging habits of wetas.
Which of the following is an assumption on which the argument depends?

(A) Researchers were interested only in observing the wetas' foraging habits and so did not keep track of other types of behavior.
(B) No pattern of behavior that is exhibited by wetas during the nighttime is also exhibited by wetas during the daytime.
(C) Attaching the small lights to the wetas' backs did not greatly alter the wetas' normal nighttime foraging habits.
(D) Wetas typically forage more frequently during the months in which the researchers studied them than they do at other times.
(E) The researchers did not use other observational techniques to supplement their method of using small lights to track the nighttime behavior of wetas.

Questions 3-8
On each day of the Monday through Friday workweek, exactly two of three employees—George, Hilda, and Irene—must remain on duty in the office to answer telephones during the noon to 1 p.m. lunch break. In the scheduling of telephone duty the following constraints must be met:

- **Hilda and Irene have telephone duty together on Tuesday.**
- **George and Hilda have telephone duty together on Thursday.**
- **No one can have telephone duty on more than four of the five days of the week.**

3. Which of the following can be the week's telephone duty schedule?

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
(A)	George	George	Hilda	George	Hilda
	Hilda	Irene	Irene	Hilda	Irene
(B)	George	Hilda	George	Hilda	George
	Hilda	Irene	Hilda	Irene	Irene
(C)	George	Hilda	George	George	George
	Irene	Irene	Hilda	Hilda	Irene
(D)	Hilda	Hilda	George	George	Hilda
	Irene	Irene	Hilda	Hilda	Irene
(E)	Hilda	Hilda	George	George	George
	Irene	Irene	Irene	Irene	Irene

---

4. If Hilda has telephone duty for exactly two days of the week, which of the following must be true?

(A) George and Irene have telephone duty together on Wednesday.
(B) George and Hilda have telephone duty together on Friday.
(C) Hilda and Irene have telephone duty together on Wednesday.
(D) Hilda and Irene have telephone duty together on Friday.
(E) Irene has telephone duty for exactly three days of the week.

---

5. If Hilda and Irene have telephone duty together on Monday and on Wednesday, which of the following must be true?

(A) George and Hilda have telephone duty together on Friday.
(B) George and Irene have telephone duty together on Friday.
(C) George has telephone duty on exactly three of the days of the week.
(D) Hilda has telephone duty on exactly three of the days of the week.
(E) Irene has telephone duty on exactly three of the days of the week.

---

6. If George and Hilda have telephone duty together on Monday and George and Irene have telephone duty together on Friday, any of the following can be true EXCEPT:

(A) George and Hilda have telephone duty together on Wednesday.
(B) George and Irene have telephone duty together on Wednesday.
(C) George has telephone duty for four days of the week.
(D) Irene has telephone duty for four days of the week.
(E) Hilda and Irene have telephone duty together for two days of the week.

---

7. If there is one pair of employees who have telephone duty together for three of the five days, which of the following must be true?

(A) George has telephone duty on Wednesday.
(B) George and Hilda have telephone duty together for three days of the week.
(C) Hilda and Irene have telephone duty together for three days of the week.
(D) One of the three employees has telephone duty for exactly two days of the week.
(E) Exactly one of the workers has telephone duty for exactly three days of the week.

---

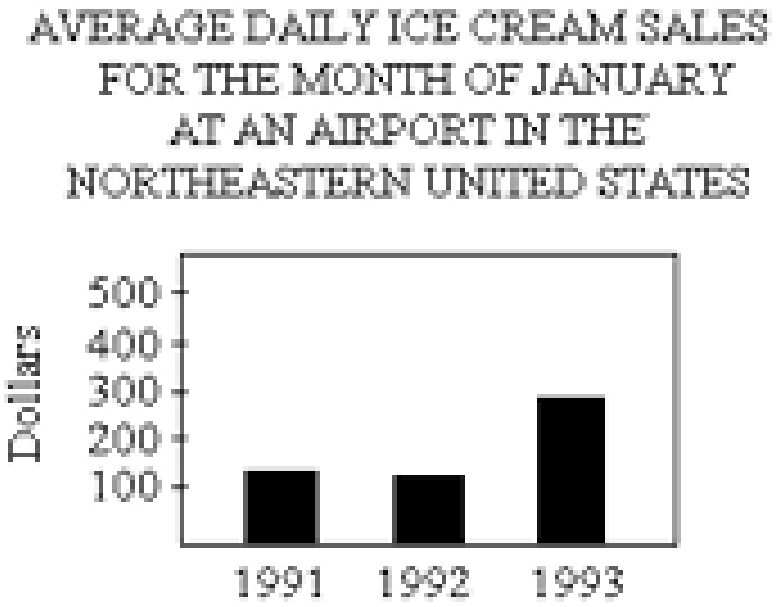
8. Any of the following can be true EXCEPT:

(A) One pair of employees has telephone duty together for exactly one day of the week
(B) One pair of employees has telephone duty together for exactly four days of the week
(C) The pair of employees that has telephone duty together on Monday also has telephone duty together on Wednesday
(D) The pair of employees that has telephone duty together on Tuesday also has telephone

duty together on Wednesday
(E) The pair of employees that has telephone duty together on Thursday also has telephone duty together on Friday

---

9.



Question 9 is based on the following graph.
Which of the following, if true, contributes most to an explanation of the change in ice cream sales?

(A) Because of low demand for its transcontinental flights departing from the airport, one airline ceased offering such flights as of December 31, 1993.
(B) There were fewer airline passengers who were traveling to destinations outside the United States in January 1993 than there were in January 1992.
(C) The average daily number of passengers at the airport in the month of January was the same for each of the three years.
(D) In January 1993 a blizzard forced all flights out of the airport to be canceled for three days, stranding many passengers at the airport.
(E) There were five percent fewer commuter flights scheduled to depart from the airport in January 1993 than there were in January of either 1991 or 1992.

---

10. People whose bodies cannot produce the substance cytochrome P450 are three times as likely to develop Parkinson's disease, a disease that affects the brain, as are people whose bodies do produce this substance. Since cytochrome P450 protects the brain from toxic chemicals, toxic chemicals probably play a role in the development of Parkinson's disease.
Which of the following, if true, most strongly supports the argument?

(A) It will soon be possible for cytochrome P450 to be synthesized for the treatment of people whose bodies cannot produce this substance.
(B) Many people whose bodies are unable to produce cytochrome P450 lack the ability to produce certain other substances as well.
(C) Cytochrome P450 has no effect on the brain other than to protect it from toxic chemicals.
(D) People with Parkinson's disease often exhibit a marked lessening in the severity of their symptoms when they are treated with dopamine, a chemical produced naturally in the brain.
(E) Many people with Parkinson's disease have the ability to produce cytochrome P450 naturally.

---

11. The early universe contained only the lightest elements, hydrogen and helium. Heavier elements, such as carbon, form only in nuclear reactions in stars and are dispersed when the stars explode. A recently discovered gas cloud contained carbon several billion years ago, when the universe was no more than two billion years old.
If the statements above are true, which of the following must, on the basis of them, also be true?

(A) The earliest stars contained only hydrogen.
(B) Some stars were formed before the universe was two billion years old.
(C) The carbon in the gas cloud later formed part of some stars.
(D) No stars identified to date are as old as the gas cloud.
(E) The gas cloud also contained hydrogen and helium.

---

12. Sleep deprivation is a known cause of workplace error, and many physicians frequently go without sleep for periods of 24 hours or more. However, few of these physicians have, in the course of a routine examination by a peer, been diagnosed with sleep deprivation. So there is little cause for concern that habitual sleep deprivation will cause widespread physician error.
The answer to which of the following questions would be most helpful in evaluating the argument?

(A) Do physicians who have been diagnosed with sleep disorders also show signs of other ills not related to sleep deprivation?
(B) Is the ability to recognize the symptoms of sleep deprivation in others significantly impaired by habitual sleep deprivation?
(C) Do factors other than habitual sleep deprivation ever lead to errors in the workplace on the part of physicians?
(D) Of people who have recently been treated by physicians, what percentage believe that many physicians have occasionally suffered from sleep deprivation?
(E) Is the incidence of sleep deprivation higher among physicians than it is among other health care workers?

Questions 13-18
In a benefit concert each of exactly seven solo performers—Harris, Jones, McIntyre, Nelson, Strapp, Trevino, and Williams—will sing. The concert director is deciding the order in which the performers will sing and is assigning each to exactly one of seven time slots, numbered consecutively 1 through 7, according to the following conditions:
Harris must sing at some time before McIntyre sings.
Strapp must sing at some time before Jones sings.
Trevino must sing either immediately before or immediately after Nelson sings.
Williams must be assigned to time slot 3.

Questions 13-18
In a benefit concert each of exactly seven solo performers—Harris, Jones, McIntyre, Nelson, Strapp, Trevino, and Williams—will sing. The concert director is deciding the order in which the performers will sing and is assigning each to exactly one of seven time slots, numbered consecutively 1 through 7, according to the following conditions:

- **Harris must sing at some time before McIntyre sings (H ... M).**
- **Strapp must sing at some time before Jones sings (S ... J).**
- **Trevino must sing either immediately before or immediately after Nelson sings (TN or NT).**
- **Williams must be assigned to time slot 3 (W=3).**

13. Which of the following could be the order, from first through seventh, in which the performers sing?

(A) Harris, McIntyre, Williams, Trevino, Nelson, Strapp, Jones
(B) Jones, Harris, Williams, Strapp, McIntyre, Nelson, Trevino
(C) Strapp, McIntyre, Williams, Nelson, Trevino, Harris, Jones
(D) Trevino, Harris, Williams, Strapp, Nelson, Jones, McIntyre
(E) Trevino, Nelson, Harris, Strapp, Williams, McIntyre, Jones

---

14. If there are exactly four performers who are to sing after Nelson sings but before Strapp sings, Harris must be assigned to time slot

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

---

15. If Williams is to sing immediately after Harris sings and immediately before Trevino sings, which of the following performers could be assigned to time slot 6?

(A) Harris
(B) Jones
(C) Nelson
(D) Strapp
(E) Trevino

---

16. If Jones is to sing immediately before Harris sings, which of the following must be assigned to time slot 7?

(A) Harris
(B) Jones
(C) McIntyre
(D) Strapp
(E) Trevino

---

17. If McIntyre is to sing immediately before Strapp sings, Trevino could be assigned to which of the following time slots?

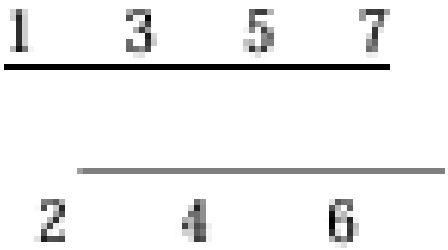
(A) 2
(B) 4
(C) 5
(D) 6
(E) 7

---

18. If McIntyre is assigned to time slot 4, which of the following must be true?

(A) Harris is assigned to a lower-numbered time slot than Strapp.
(B) Jones is assigned to a lower-numbered time slot than Trevino.
(C) Nelson is assigned to a lower-numbered time slot than McIntyre.
(D) Strapp is assigned to a lower-numbered time slot than Williams.
(E) Trevino is assigned to a lower-numbered time slot than Jones.

Questions 19-22
Along a street that is currently without trees, seven trees are to be planted in the pattern.



Where each number designates the position of a tree. No more than two kinds of trees can be planted. If maples are used, no maple can be planted adjacent to or immediately diagonally opposite another maple. Two trees are adjacent to each other if the numbers of their positions differ by two, and immediately diagonally opposite if their numbers differ by one. The following trees, of three kinds, are available for planting:

Three red oaks
Four maples
Four sycamores

19. Which of the following can be the trees planted along the side of the street that has four trees, in order of their positions beginning with position 1?
There seems to be a slight confusion in the prompt here, as the pattern shows a total of seven trees. The question "the side of the street that has four trees" might refer to the row 1-3-5-7. I will assume this is the case.
(A) Maple, sycamore, maple, sycamore
(B) Maple, sycamore, red oak, maple
(C) Red oak, maple, maple, red oak
(D) Sycamore, sycamore, maple, maple
(E) Sycamore, sycamore, red oak, red oak

---

20. If red oaks are used, then which of the following must be true?

(A) The other trees used are all maples.
(B) The other trees used are all sycamores.
(C) The red oaks are in positions 1, 2, and 3.
(D) The red oaks are in positions 3, 4, and 5.
(E) The red oaks are in positions 4, 5, and 6.

---

21. Among the trees left over after the planting is done there must be

(A) at least one maple
(B) at least one red oak

(C) at least one sycamore
(D) at most one maple
(E) at most one red oak

---

22. If maples are planted, the side of the street that has four trees must have

(A) red oaks in positions 1 and 7
(B) red oaks in positions 3 and 5
(C) sycamores in positions 1 and 3
(D) sycamores in positions 1 and 7
(E) sycamores in positions 3 and 5

---

23. A list of the fifteen operas most frequently performed in recent times includes no works by the nineteenth-century German composer Richard Wagner. Although music producers tend to produce what audiences want, relative infrequency of performance probably does not indicate lack of popularity in Wagner's case, since Wagner's operas are notoriously expensive to perform on stage.
Which of the following, if true, most strongly supports the conclusion of the argument above?

(A) The list of most frequently performed operas does not include operas produced by small amateur groups.
(B) Some opera companies are backed by patrons who are willing to commit large sums of money in order to enjoy lavish productions.
(C) All of the fifteen most frequently performed operas of recent times are works that have been popular for at least 75 years.
(D) More recordings have been produced recently of the works of Wagner than of the works of any other composer of opera.
(E) Operatic works of all kinds have been increasing in popularity in recent years.

---

24. The bodies of dwarf individuals of mammalian species are generally smaller in relation to those of nondwarf individuals than are the teeth of the dwarf individuals in relation to those of the nondwarf individuals. Fragmentary skeletal remains of an adult dwarf woolly mammoth were recently found. The teeth are three-fourths the size of the teeth of an average adult nondwarf woolly mammoth.
The statements above, if true, most strongly support which of the following?

(A) The body of the dwarf woolly mammoth was less than three-fourths the size of the body of an average adult nondwarf woolly mammoth.
(B) None of the teeth of the dwarf woolly mammoth that were recently discovered was as large as any of the teeth of nondwarf woolly mammoths that have been discovered.
(C) The teeth of most adult dwarf individuals of mammalian species are three-fourths the size of the teeth of the adult nondwarf individuals of the same species.

(D) Dwarf woolly mammoths had the same number of teeth as did nondwarf woolly mammoths.
(E) Dwarf individuals of most mammalian species are generally no more than three-fourths the size of the adult nondwarf individuals of those species.

---

25. Excluding purchases by businesses, the average amount spent on a factory-new car has risen 30 percent in the last five years. In the average household budget, the proportion spent on car purchases has remained unchanged in that period. Therefore the average household budget must have increased by 30 percent over the last five years.
Which of the following is an assumption on which the argument relies?

(A) The average number of factory-new cars purchased per household has remained unchanged over the last five years.
(B) The average amount spent per car by businesses buying factory-new cars has risen 30 percent in the last five years.
(C) The proportion of the average household budget spent on all car-related expenses has remained unchanged over the last five years.
(D) The proportion of the average household budget spent on food and housing has remained unchanged over the last five years.
(E) The total amount spent nationwide on factory-new cars has increased by 30 percent over the last five years.
