practice test 4

Practice Test 4

NOTE: For the purposes of this book—making sure you're fully prepared to take the GRE exam—one Text Completion question (Verbal Reasoning section) and one numeric entry question (Quantitative Reasoning section) are included in each of the Practice Tests. On the actual GRE, however, you will not see both of these questions; in fact, you may not see either one.

ANALYTICAL WRITING

Issue Task

Time: 45 Minutes

Using a word processor, compose a response to the following statement and directive. Do not use any spell-checking or grammar-checking functions (they are not available on the actual GRE):

> "Most great achievements are the result of careful planning and a long, sustained effort rather than of sudden bursts of creativity or insight."
>
> In your view, how accurate is the above statement? Develop and support your viewpoint with relevant reasons and examples and by considering ways in which the statement may or may not be true.

Argument Task

Time: 30 Minutes

Using a word processor, compose an essay for the following argument and directive. Do not use any spell-checking or grammar-checking functions (they are not available on the actual GRE).

The following appeared in a speech by a prominent state politician:

"At Giant Industries, our state's largest private business, the average production worker is now forty-two years old. Recently, Giant's revenue from the sale of textiles and paper, which together account for the majority of Giant's manufacturing business, has declined significantly. Since an increasing percentage of new graduates from our state's colleges and universities are finding jobs in other states, our state will soon face a crisis in which the size of our workforce will be insufficient to replace our current workers as they retire, in turn resulting in widespread business failure and a reduced quality of life in our state."

Discuss how well-reasoned you find the above argument.

VERBAL REASONING

30 Questions 30 Minutes

NOTE: In this section, questions of different formats are interspersed, just as they are on the computer-based GRE. However, this practice session contains more challenging questions than easy ones, whereas the actual computer-based GRE adapts to your ability level.

1. COUNTERPOINT : MELODY ::
- **(A)** masonry : brick
- **(B)** curtain : window
- **(C)** coffee : bean
- **(D)** sketch : pencil
- **(E)** biography : book

2. FALLOW : PRODUCTIVITY ::
- **(A)** handsome : attraction
- **(B)** friendly : allegiance
- **(C)** bitter : taste
- **(D)** obscure : clarity
- **(E)** poisonous : protection

3. The qualities expected of a professional musician seem _____, for she must be studious, disciplined, and technically impeccable while bringing passion and _____ to each performance.
- **(A)** ambiguous . . capriciousness
- **(B)** eclectic . . impulsiveness
- **(C)** paradoxical . . spontaneity
- **(D)** multifarious . . virtuosity
- **(E)** unattainable . . emotion

4. RESOLUTION:
- **(A)** introduction
- **(B)** vacillation
- **(C)** revocation
- **(D)** denunciation
- **(E)** revulsion

5. TAUT:
- **(A)** workable
- **(B)** refined
- **(C)** slackened
- **(D)** durable
- **(E)** circular

6. LAUGHTER : AMUSEMENT ::
- **(A)** leisure : recreation
- **(B)** squalor : filth
- **(C)** pallor : illness
- **(D)** pride : humility
- **(E)** stealth : openness

7. GEM : SETTING ::
- **(A)** diamond : gold
- **(B)** painting : milieu
- **(C)** ring : necklace
- **(D)** building : scaffold
- **(E)** portrait : subject

Questions 8 and 9 are based on the following passage.

In nearly all human populations, a majority of individuals can taste the artificially synthesized chemical phenylthiocarbonide (PTC). However, the percentage varies dramatically—from as low as sixty percent in India to as high as ninety-five percent in Africa. That this polymorphism is observed in non-human primates as well indicates a long evolutionary history which, although obviously not acting on PTC, might reflect evolutionary selection for taste discrimination of other, more significant bitter substances, such as certain toxic plants.

A somewhat more puzzling human polymorphism is the genetic variability in earwax, or *cerumen,* which is observed in two varieties. Among European populations, ninety percent of individuals have a sticky yellow variety rather than a dry, gray one, whereas in northern China these numbers are approximately the reverse. Perhaps like PTC variability,

cerumen variability is an incidental expression of something more adaptively significant. Indeed, the observed relationship between cerumen and odorous bodily secretions, to which non-human primates and, to a lesser extent humans, pay attention suggests that during the course of human evolution genes affecting body secretions, including cerumen, came under selective influence.

8. It can be inferred from the passage that human populations vary considerably in their
- **(A)** sensitivity to certain bodily odors
- **(B)** capacity for hearing
- **(C)** ability to assimilate artificial chemicals
- **(D)** vulnerability to certain toxins found in plants
- **(E)** ability to discern bitterness in taste

9. Which of the following best summarizes the main idea of the passage?
- **(A)** Artificially synthesized chemicals might eventually alter the course of evolution by desensitizing humans to certain tastes and odors.
- **(B)** Polymorphism among human populations varies considerably from region to region throughout the world.
- **(C)** Sensitivity to taste and to odors has been subject to far greater natural selectivity during the evolution of primates than previously thought.
- **(D)** Some human polymorphisms might be explained as vestigial evidence of evolutionary adaptations that still serve vital purposes in other primates.
- **(E)** The human senses of taste and smell have evolved considerably over the course of evolutionary history.

10. Hong Kong prospered as the center of trade with China, _____ until it suddenly fell to the Japanese in 1941.
- **(A)** increasing
- **(B)** succeeding
- **(C)** languishing
- **(D)** retreating
- **(E)** flourishing

11. EARNESTNESS:
- **(A)** insincerity
- **(B)** lack of discipline
- **(C)** rudeness
- **(D)** carelessness
- **(E)** arrogance

12. EVANESCENT : VANISH ::
- **(A)** effervescent : corrode
- **(B)** iridescent : shine
- **(C)** expressive : admonish
- **(D)** fluorescent : disappear
- **(E)** vacuous : expedite

13. DISPENSARY : REAPER ::
- **(A)** chisel : mortar
- **(B)** thermometer : aspirin
- **(C)** dye : seal
- **(D)** whip : harness
- **(E)** anesthetic : toxin

14. The fossil record reveals innumerable instances of environmental _____ by which one can draw an analogy between the evolution of life and a tree's branches, a few of which _____ but most of which branch again and again.
- **(A)** calamities . . end abruptly
- **(B)** adaptations . . progress linearly
- **(C)** safeguards . . wither and die
- **(D)** events . . intertwine
- **(E)** changes . . produce leaves

Questions 15–18 are based on the following passage.

American history scholars generally attribute formation of the League of Indian Nations to Degandawida, who convinced the warring and fiercely autonomous Iroquois nations to embrace his radical idea for a league by tying it to familiar Iroquois customs and institutions. He associated the notion of peace and partnership with the Iroquois custom by which the families of slain warriors adopted war prisoners into the tribe. He invoked unquestioned social institutions as symbols, comparing the League to the traditional Iroquois clan in which several families share a "Longhouse" and likening the Great Council, comprised of representatives from each nation, to the Longhouse's ever-burning Council Fire. And he assigned to each nation specific duties in order to assuage its fear of losing national identity. (For instance, he assigned to the Onondagas, who were centrally positioned geographically, the role of perpetual hosts.)

Iroquois unification under the League lasted about two centuries, when disagreement as to whether to become involved in the American Revolutionary war divided the Iroquois. The revolutionaries' success and their subsequent encroachment upon Iroquois lands forced many Iroquois to resettle in Canada, while those who remained behind lost respect from other Indian nations. The introduction of distilled spirits led to widespread alcoholism and, in turn, to a rapid decline of the culture and population. The Quakers' influence impeded, yet in another sense contributed, to this decline. By establishing schools for the Iroquois and by introducing them to modern technology for agriculture and husbandry, the Quakers instilled some hope for the future yet undermined their sense of national identity.

Ironically, it was Handsome Lake, the alcoholic half-brother of Seneca Cornplanter (the most outspoken proponent among the Iroquois for assimilation of white customs and institutions) who revived the Iroquois culture. Around 1800, Lake, a former member of the Great Council, established a new religion among the Iroquois that tied the more useful aspects of Christianity to traditional Indian beliefs and customs. Lake's teachings quickly became firmly entrenched among the Iroquois, sparking reunification and renewed confidence while also curbing rampant alcoholism. Lake's influence is still evident today: many modern-day Iroquois belong both to his religion and to one or another Christian sect.

15. The passage mentions all of the following developments as contributing factors in the decline of the Iroquois culture EXCEPT for

(A) new educational opportunities for the Iroquois people
(B) divisive power struggles among the leaders of the Iroquois nations
(C) introduction of new farming technologies
(D) territorial threats against the Iroquois nations
(E) discord among the nations regarding their role in the American Revolution

16. Among the following reasons, it is most likely that the author considers Handsome Lake's leading a revival of the Iroquois culture "ironic" because

(A) he was a former member of the Great Council
(B) he was not a full-blooded relative of Seneca Cornplanter
(C) he was related by blood to a chief proponent of assimilation
(D) he was alcoholic
(E) his religious beliefs conflicted with traditional Iroquois beliefs

17. Assuming that the reasons asserted in the passage for the decline of the Iroquois culture are historically representative of the decline of cultural minorities, which of the following developments would most likely contribute to the demise of a modern-day ethnic minority?

(A) A bilingual education program in which children who are members of the minority group learn to read and write in both their traditional language and the language prevalent in the present culture
(B) A tax credit for residential property owners who lease their property to members of the minority group
(C) Increased efforts by local government to eradicate the availability of illegal drugs
(D) A government-sponsored program to assist minority-owned businesses in using computer technology to improve efficiency
(E) The declaration of a national holiday commemorating a past war in which the minority group played an active role

18. Which of the following best characterizes the structure of the passage as a whole?

(A) A theory is presented and then applied to two related historical phenomena.
(B) Two historical figures are introduced; then the nature and extent of their influence are compared.
(C) The inception of an historical phenomenon is examined; then the subsequent life of the phenomenon is traced.
(D) Competing views respecting an historical phenomenon are presented and then evaluated based upon empirical evidence.
(E) An historical event is recounted; then possible explanations for the event are presented.

19. ROBUST : VIGOR ::

(A) massive : strength
(B) nervous : worry
(C) farsighted : glasses
(D) starving : appetite
(E) sanguine : hope

20. BUMPKIN : GAFFE ::

(A) gambler : windfall
(B) celebrity : ego
(C) monarch : power
(D) broker : deal
(E) commuter : excursion

21. Societal progress usually comes about through (i)_____ and challenge—that is, when people point out the mistakes of those who wield power; (ii)_____, without our challenging the mistaken notions of established institutions, political (iii)_____ and tyranny would go unchecked.

Blank (i)
perseverance
dissension
setback

Blank (ii)
nevertheless
in fact
in addition

Blank (iii)
opposition
corruption
oppression

22. VESTIGIAL:

(A) newfangled
(B) current
(C) effective
(D) functional
(E) appropriate

Questions 23 and 24 are based on the following passage.

The striking consistencies among the folk tales of any region, especially the tale plots of independent origins, like those among a region's languages, are owing to the fact that folklore, like language, is a collective property—a socialized aspect of

the culture subject to stricter and more uniform laws than fields in which individual creation prevails. Folk tales do contain certain variable elements—for example, the distribution of points of emphasis and the nomenclature (vocation) and attributes of the *dramatic personae*—through which the teller's own personality and inclinations may find expression. Also, the teller's choice among the repertory of the available genres (for example, fairy tales and anecdotes) and among the known tales within each genre often reflect the teller's preferred manner of execution, while the teller-narrator typically assumes whichever character most closely resembles the teller. Nevertheless, whereas in written literature a creative personality is free to shape entirely new roles, including that of narrator, in storytelling all characters are predetermined by the tale. Attempts at biographical interpretation almost invariably fail to convince; the tale must come before the teller.

23. It can be inferred from the passage that the author would most probably agree with which of the following statements about classic novels?

(A) They should not be considered part of the collective property of a culture.
(B) They are sometimes adapted from a culture's well known folk tales.
(C) They place less emphasis on *dramatic personae*than fairy tales and anecdotes do.
(D) They use a culture's language in more imaginative ways than folk tales.
(E) They often resemble folk tales insofar as they belie their author's own values and attitudes.

24. The passage as a whole can appropriately be viewed as

(A) an examination of the ways in which story tellers imbue well-known folk tales with their own personalities
(B) an explanation as to why tellers of folk tales generally choose to conform to cultural expectations in how they tell their tales
(C) an investigation into certain parallels between language in general and folk tales in particular
(D) an argument that folk tales evolve over time as a result of both cultural shifts and individual creativity
(E) a description of the extent of the consistencies generally observed among a region's folk tales

25. When it was constructed, the gymnasium was highly _____; the students for whom it was planned were _____, but community members who faced losing their neighborhood park were outraged.

(A) controversial . . gratified
(B) warranted . . skeptical
(C) fortuitous . . euphoric
(D) unnecessary . . impartial
(E) desirable . . numerous

26. IMPEDE:

(A) comply
(B) hasten
(C) deny
(D) engulf
(E) progress

27. AGILE : DANCER ::

(A) delicious : fruit
(B) diligent : worker
(C) barren : desert
(D) tall : building
(E) dangerous : criminal

28. Shakespeare's _____ of Richard III is so _____ that it is difficult to imagine that the ruler had been dead for more than a century before the Bard cast him as the central character in one of his plays.

(A) rendition . . compelling
(B) criticism . . candid
(C) depiction . . vivid
(D) portrayal . . droll
(E) caricature . . inventive

29. VAGARY:

(A) full disclosure
(B) explicitness
(C) impartiality
(D) essential element
(E) foreseeable event

30. FAWN:

(A) insult
(B) dominate
(C) grow stronger
(D) win over
(E) boast

QUANTITATIVE REASONING

28 Questions 45 Minutes

NOTE: In this section, questions of different formats are interspersed, just as they are on the computer-based GRE. However, this practice session contains more challenging questions than easy ones, whereas the actual computer-based GRE adapts to your ability level.

1. The toll for driving on road A is \$1.20 for the first mile and 35 cents for each additional mile. The toll for driving on road B is \$2.25 for the first mile and 20 cents for each additional mile.

Column A	Column B
The toll for a 8-mile drive on road A	The toll for a 8-mile drive on road B

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

2. $k > 0$

Column A	Column B
$k^{1/2} + k^{1/2}$	$\sqrt{k}$

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

3. Each of 18 students is taking either Spanish or German, or both. More than 50 percent of the students are taking both languages.

Column A	Column B
The number taking German but not Spanish	The number taking Spanish but not German

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

4. If n is the least of two consecutive odd integers, and if the difference of their squares is 120, which of the following equations can be used to find their values?

(A) $(n + 1)^2 - n^2 = 120$
(B) $n^2 - (n + 2)^2 = 120$
(C) $[(n + 2) - n]^2 = 120$
(D) $n^2 - (n + 1)^2 = 120$
(E) $(n + 2)^2 - n^2 = 120$

5. A faucet is dripping at a constant rate. By noon on Sunday, 3 ounces of water have dripped from the faucet into a holding cup. If a total of 7 ounces have dripped into the cup as of 5 p.m. the same day, how many ounces altogether will have dripped into the tank by 2:00 a.m. the following day?

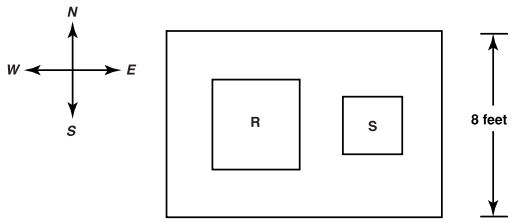
(A) 10

(B) $\frac{51}{5}$

(C) 12

(D) $\frac{71}{5}$

(E) $\frac{81}{5}$



6. Two square rugs R and S, which have a combined area of 20 square feet, are placed on a rectangular floor whose area is 112 square feet, as shown above. Measured east to west, each rug is placed the same distance from the other rug as from the nearest east or west edge of the floor. If the area of rug R is four times the area of rug S, how far apart are the rugs?

(A) 3 feet, 4 inches
(B) 3 feet
(C) 2 feet, 8 inches
(D) 2 feet
(E) 1 feet, 6 inches

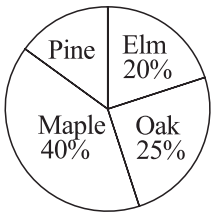
7. Shown below is a correct problem in addition, with R and S representing different digits.

7R
RS
RR

117

What is the value of S ?

Write a number in the box.



TREES ON MAIN STREET

8. Referring to the above graph, if there are 140 trees altogether on Main Street, how many of the trees are pine?

(A) 40
(B) 24
(C) 21
(D) 15
(E) 14

	Column A	**Column B**
9.	The least common multiple of 4, 6, and 8	The greatest common factor of 44, 66, and 88

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

10. A spinner containing seven equal regions numbered 1 through 7 is spun two times in a row. What is the probability that the first spin yields an odd number and the second spin yields an even number?

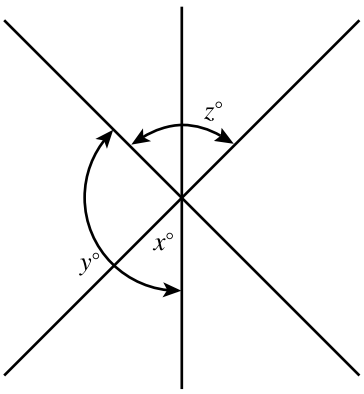
(A) $\frac{2}{7}$

(B) $\frac{12}{49}$

(C) $\frac{24}{49}$

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

(E) $\frac{4}{7}$



11. In the figure shown, if $y = 130$ and $z = 100$, then $x =$

(A) 40
(B) 45
(C) 50
(D) 55
(E) 60

12. The median of four numbers is zero (0), and the difference between the smallest and largest of the four numbers is 4.

Column A	Column B
The smallest number's absolute value	4

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

13. P's age is twice Q's age.
Two years ago, R's age was exactly half of P's age at that time.

Column A	**Column B**
R's age	Q's age

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

14. $ab<0$
$a<b$

Column A	**Column B**
$\frac{b}{a}$	$\frac{a}{b}$

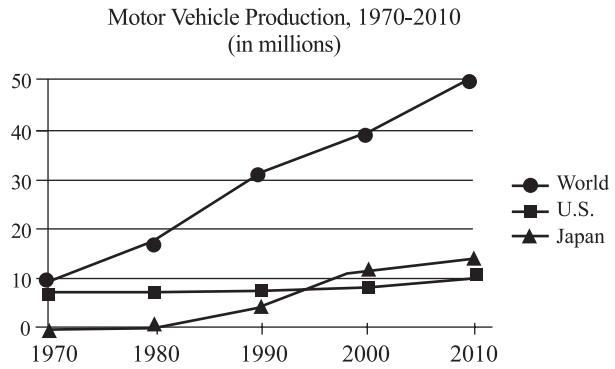
(A) The quantity in Column A is greater.
(B) The quantity in Column B is greater.
(C) The quantities are equal.
(D) The relationship cannot be determined from the information given.

15.

Column A	**Column B**
The standard deviation of a distribution of two numbers having a range of 2.	The standard deviation of a distribution of three numbers having a range of 2.

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

Questions 16 and 17 are based on the following figure.



16. In 2000, world production of motor vehicles exceeded U.S. production by approximately how many units?

(A) 38 million
(B) 35 million
(C) 31 million
(D) 27 million
(E) 19 million

17. Which of the following statements about motor vehicle production from 1970 to 2010 is most accurate?

(A) As a percentage of world production, U.S. production neither increased nor decreased.
(B) Production outside the countries of U.S. and Japan increased, then leveled off, then increased again.
(C) World production increased steadily while U.S. production declined.
(D) As a percentage of world production, Japan production neither increased nor decreased.
(E) Japan production increased steadily while U.S. production declined.

18. In triangle ABC, side AB is congruent to side BC. If the degree measure of $\angle B$ is b, which of the following represents the degree measure of $\angle A$?

(A) b

(B) $180 - b$

(C) $180 - \frac{b}{2}$

(D) $90 - b$

(E) $90 - \frac{b}{2}$

19. At ABC Corporation, five executives earn $150,000 each per year, three executives earn $170,000 each per year, and one executive earns $180,000 per year. What is the average salary of these executives?

(A) $156,250
(B) $160,000
(C) $164,480
(D) $166,670
(E) $170,000

20.

In the figure above, the vertical marks are equally spaced.

Column A	Column B
B	2.38

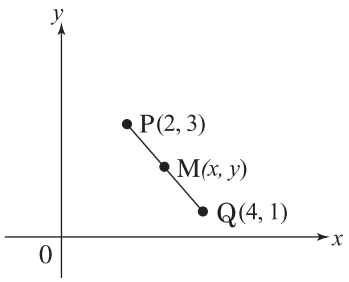
(A) The quantity in Column A is greater.
(B) The quantity in Column B is greater.
(C) The quantities are equal.
(D) The relationship cannot be determined from the information given.

21.

Column A	Column B
The sum of all integers from 19 to 50, including 19 and 50	The sum of all integers from 21 to 51, including 21 and 51

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

22.



M is the midpoint of PQ

Column A	Column B
x	y

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

	Column A	Column B
23.	The number of fifths in eight sixteenths	The number of fifteenths in one sixth

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

24. If $a > 0$ and $f(a) = a^2 + a$, then $\frac{f(a)}{f(-a)} =$

(A) -1

(B) a

(C) $\frac{a}{a_2 1+}$

(D) $\frac{a+1}{a\square 1}$

(E) None of the above

25. It takes Paul m minutes to mow the lawn. Assuming he mows at a constant rate, after Paul mows for k minutes, what part of the lawn remains to be mowed?

(A) $\frac{m\square k}{m}$

(B) $\frac{m}{k}$

(C) $1-\frac{m}{k}$

(D) $\frac{k\square m}{k}$

(E) $\frac{k}{m}$

26.

Average (Mean) Gasoline Price Among 50 Stations	Number of Stations Charging More Than Average Price	Number of Stations Charging Less Than Average Price
January 1st: $2.50	22	17
February 1st: $2.65	15	28
March 1st: $2.40	23	23

The table shows the average price of gasoline among 50 gasoline-service stations on three different days, along with the number of stations charging more and less than the average on each day.

Based on the information in the table, which of the following statements about the price of gasoline among all 50 stations must be true?

I. On February 1st, the median price was less than the average price.
II. On March 1st, the average price was equal to the median price.
III. The average price on March 1st was less than the median price on January 1st.

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

27. As two wheels—A and B—roll across the ground, they both rotate at a rate of 60 revolutions per minute. The radius of wheel A is 3 centimeters. The radius of wheel B is 150 centimeters.

Column A	Column B
The distance wheel A travels per hour	The distance wheel B travels per minute

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

28. $3x-3-4x=x-7-2x \qquad +4$

Column A	Column B
x	0

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

ANSWER KEY AND EXPLANATIONS

Analytical WritingISSUE TASK: EVALUATION AND SCORING

Evaluate your Issue task essay on a scale of 0 to 6 (6 being the highest score) according to the following five criteria:

1. Does your essay develop a position on the issue through the use of incisive reasons and persuasive examples?
2. Are your essay's ideas conveyed clearly and articulately?
3. Does your essay maintain proper focus on the issue, and is it well organized?
4. Does your essay demonstrate proficiency, fluency, and maturity in its use of sentence structure, vocabulary, and idiom?
5. Does your essay demonstrate command of the elements of Standard Written English, including grammar, word usage, spelling, and punctuation?

ARGUMENT TASK: EVALUATION AND SCORING

Evaluate your Argument task essay on a scale of 0 to 6 (6 being the highest score) according to the following five criteria:

1. Does your essay identify and articulate the argument's key unstated assumptions?
2. Does your essay explain how the argument relies on these unstated assumptions, and what the implications are if these assumptions are unwarranted?
3. Does your essay develop its ideas in a clear, organized manner, with appropriate transitions to help connect ideas together?
4. Does your essay demonstrate proficiency, fluency, and maturity in its use of sentence structure, vocabulary, and idiom?
5. Does your essay demonstrate command of the elements of Standard Written English, including grammar, word usage, spelling, and punctuation?

To help you evaluate your essay in terms of criteria 1 and 2, the following is a series of questions that identify *five* distinct unstated assumptions upon which the argument relies. To earn a score of 4 or higher, your essay should identify and explain at least three of these assumptions. Identifying and explaining at least four of the unstated assumptions would help earn you an even higher score.

- Are key characteristics of one group member (Giant Industries) also characteristics of the group as a whole—i.e., all employers in a certain state? (Perhaps Giant is not typical of the state's employers, as a group, with respect to either its financial strength or the average age of its workforce.)
- Does the term "largest private business" necessarily mean that Giant employs more workers than any other business in the state? (The smaller the workforce at

Giant, the less likely that Giant is representative of the state's employers as a group.)

- Doesn't the prediction's accuracy require that other future conditions remain unchanged? (For example, the argument ignores a possible influx of workers from other states.)
- Would a reduced workforce necessarily result in business failure? (Perhaps businesses will be more profitable by trimming their workforce.)
- What is the definition of "quality of life"? (The argument's ultimate prediction depends on this missing definition.)

answers

Verbal Reasoning

1. A	9. D	17. D	23. A
2. E	10. E	18. C	24. E
3. C	11. A	19. E	25. A
4. B	12. B	20. D	26. B
5. C	13. A	21. (i) dissension	27. B
6. C	14. B	(ii) in fact	28. C
7. D	15. B	(iii) oppression	29. E
8. E	16. C	22. D	30. B

1. **The correct answer is (A).**This is a "component of" analogy. COUNTERPOINT refers to the interplay between one MELODY and one or more others. So each MELODY is a distinct and necessary component of COUNTERPOINT. Similarly, each *brick*is a distinct and necessary component of *masonry* (brick or stone work, such as a chimney). As for choice (C),*beans*are ingredients that are combined to make*coffee*, but the bean itself is not, as a whole bean, part of the product.

2. **The correct answer is (E).**This is an "inherent purpose of" analogy. FALLOW means "to leave a field uncultivated for the purpose of restoring PRODUCTIVITY." Similarly, the reason some animals are *poisonous*is for their own*protection* from predators and other enemies.

3. **The correct answer is (C).** Discipline, studiousness, and technical precision are generally thought of as contrary to "passion." So, the sentence suggests that a professional musician must possess contradictory or opposing qualities. The word *paradoxical* captures the sense of contradiction, while the *spontaneity* fits nicely with "passion" and contrasts appropriately with "disciplined."

4. **The correct answer is (B).**RESOLUTION means "determination or a clear sense of purpose"; *vacillation* refers to a "state of indecision or lack of clear purpose."

5. **The correct answer is (C).** TAUT means "tense or rigid." *Slackened* means "loosened."

6. **The correct answer is (C).**This is a "sign or symptom of" analogy. LAUGHTER is a common sign of AMUSEMENT, and*pallor*(paleness) is a common sign of*illness* .

7. **The correct answer is (D).**This is a "place for" analogy. A GEM is placed within a SETTING (framework) in jewelry, much like a *building* is constructed within the framework of a*scaffold* .

8. **The correct answer is (E).**In the passage's first paragraph, the author points out that the ability to taste PTC varies among human populations, then in the final sentence of that paragraph refers to "other, more significant bitter substances." It can reasonably be inferred from these two statements, considered together, that PTC is a bitter substance.

9. **The correct answer is (D).**In the first paragraph, the author's main

concern is to point out that the variability among human populations regarding sensitivity to PTC might be a trace of the evolutionary process of natural selectivity. In the second paragraph, the author offers a similar suggestion about variability in earwax type. To support these assertions, the author infers that both characteristics still serve useful purposes among non-primates, from whom humans presumably evolved. This inference is especially clear with respect to identifying bitter substances that might be toxic. Choice (D) accurately reflects the author's main assertion and supporting evidence.

10. **The correct answer is (E).** In this sentence, the missing word should continue in the same direction as the first. You're looking for a word that is consistent with and that complements *prospered*. You can easily eliminate choices (C) and (D), both of which contradict the first clause. (*Languish* means "weaken.") Choice (A) makes for a vague sentence: What was Hong Kong increasing? Choice (B) also makes for a vague sentence: What was Hong Kong succeeding in? That leaves choice (E). *Flourishing* means "thriving or growing"—a good complement to the idea of *prospering*. So choice (E) provides the best completion.

11. **The correct answer is (A).** EARNESTNESS means "deep sincerity"—the opposite of *insincerity* .

12. **The correct answer is (B).** This is a "defining characteristic" analogy. EVANESCENT means "tending to VANISH." *Iridescent* means "tending to *shine*."

13. **The correct answer is (A).** This is an "opposing function" analogy. A DISPENSARY is a distribution center for medicines, and a REAPER is a farming machine that cuts and gathers crops. Since a dispensary distributes but a reaper gathers, they serve opposing functions. A *chisel* is used to break apart material such as stone; *mortar* is used to bond stones or bricks; hence, they also serve opposing functions. Moreover, in both pairs, the relationship involves disbursing versus joining, further strengthening the analogy.

14. **The correct answer is (B).** A key phrase in this sentence is "by which." What precedes this phrase must adequately explain the analogy that follows it. Choice (B) fits the bill. In the context of evolution, many organisms have continually *adapted* to environmental changes, resulting in a large variety of species (in a continual branching manner); in other words, for most organisms, evolution is not *linear* .

15. **The correct answer is (B).** Nowhere in this passage does the author mention any power struggles among the leaders of the Iroquois nations. Although the third paragraph does refer to a dispute among the Iroquois leaders, the dispute involved the role that the Iroquois should play in the American Revolution (choice E).

16. **The correct answer is (C).** In the final paragraph's first sentence, the author tells us that Cornplanter was an outspoken proponent of assimilation. The next sentence suggests in context that Handsome Lake was

related to Cornplanter as a half-brother. The fact that Lake was responsible for the Iroquois reasserting their national identity is ironic, then, in light of Lake's blood relationship to Cornplanter.

17. **The correct answer is (D).** According to the passage, the Quakers' introduction of new technology to the Iroquois was partly responsible for the decline of the Iroquois culture in that it contributed to their loss of national identity. Choice (D) presents a similar situation. Choice (A) is the second-best choice. Insofar as the children referred to in scenario choice (A) learn the language of the prevailing culture, assimilation and a resulting loss of ethnic identity might tend to occur. However, this sense of identity might be reinforced by their learning to read and write in their traditional language as well. Therefore, choice (A) is not as likely to lead to the demise of the minority group as choice (D), based upon the Iroquois' experience as discussed in the passage.

18. **The correct answer is (C).** The first paragraph is concerned with the inception of the Iroquois League, while the second and third paragraphs outline the subsequent history of the League from its decline through its subsequent resurgence under Handsome Lake. Choice (C) recapitulates this overall structure.

19. **The correct answer is (E).**This is a "degree of" analogy. ROBUST means full of VIGOR, just as *sanguine*means full of*hope* .

20. **The correct answer is (D).**This is a "defining characteristic" analogy. A BUMPKIN (socially inept person) is a person prone to committing a GAFFE (a social blunder, or *faux pas*). Similarly, a *broker* is a person who facilitates a*deal*(usually a sale or trade) between two principal parties. Further strengthening the analogy is that in each word pair, the second word describes the activity performed by the person (first word).

21. **The correct answer is (i) dissension, (ii) in fact, and (iii) oppression.** In the first sentence, the phrase*that is*signals that what precedes it should be similar in meaning to what follows it. Pointing out the mistakes of those in power could be characterized either as a challenge or as part of *dissention*, which means "rebellion or disobedience." The second part of the sentence (following the semicolon) reiterates and expresses more pointedly the idea in the first part. The connecting phrase*in fact*works well to signal this reiteration. As for blank (iii), *oppression* (which means "persecution or tyranny") is the only choice that makes sense in context.

22. **The correct answer is (D).** The word VESTIGIAL describes something that no longer functions usefully, and so it's a good antonym of *functional*.

23. **The correct answer is (A).**In the first sentence of the passage, the author tells us that the folk lore is "collective property . . . subject to stricter and more uniform laws than fields in which individual creation prevails." Then, later in the passage, the author distinguishes between

written literature (which includes novels) and folk tales in that in the former "a creative personality is free to shape entirely new roles." The implication here is that written literature (including novels) is one of the fields in which "individual creation prevails" and therefore should not be considered part of a culture's collective property.

24. The correct answer is (E). In the passage, the author first makes the broad point that a culture's various folk tales are remarkably consistent. The author then acknowledges and describes limited ways in which folk tales legitimately vary according to certain preferences of the teller, but then emphasizes the limited extent of the story teller's discretion. Of the five choices, choice (E) best sums up these ideas.

25. The correct answer is (A). The word "but" shows that the reaction of the students and faculty was different from that of the community members. The word *gratified* describes a reaction that is contrary to "outraged," and *controversial* describes the fact that the two groups had such opposite opinions.

26. The correct answer is (B). To IMPEDE is to "hinder or obstruct" (as in*impede progress*); to*hasten* is to cause an event to occur sooner than it otherwise might.

27. The correct answer is (B). This is an "ideal characteristic" analogy. An effective, or ideal, DANCER is AGILE (nimble), although agility is not a defining characteristic of a dancer. Similarly, an effective, or ideal, *worker* is *diligent* (not lazy), although diligence is not a defining characteristic of a worker.

28. The correct answer is (C). The first part of the sentence (containing both missing words) must explain why it is difficult to imagine that Richard III had been dead for so long when Shakespeare wrote the play. A *vivid* (lifelike or realistic) *depiction* (characterization or description) of the ruler would provide just such an explanation.

29. The correct answer is (E). A VAGARY is an unpredictable, erratic, or whimsical idea or occurrence, just the opposite of a *foreseeable event*.

30. The correct answer is (B). To FAWN is to "behave in a servile, cringing, manner" (like a dog toward its master). To*dominate*is to act in an opposite manner.

answers

Quantitative Reasoning

1. C	7. 3	13. A	19. B	24. D
2. A	8. C	14. D	20. C	25. A
3. D	9. A	15. D	21. B	26. C
4. E	10. B	16. C	22. A	27. A
5. D	11. C	17. B	23. C	28. D
6. C	12. B	18. E		

1. **The correct answer is (C).** Here's how to calculate the two quantities:

   Quantity A = \$1.20 + (7)(\$.35) = \$1.20 + \$2.45 = \$3.65

   Quantity B = \$2.25 + (7)(\$.20) = \$2.25 + \$1.40 = \$3.65

2. **The correct answer is (A).** $k^{1/2} + k^{1/2} = \sqrt{k} + \sqrt{k} = 2\sqrt{k}$, which is clearly greater than $\sqrt{k}$.

3. **The correct answer is (D).** We're given no information to determine how many students are taking only one of the two languages (all we know is that the number is less than 9), let alone which is greater: Quantity A or Quantity B.

4. **The correct answer is (E).** The other integer is $n + 2$. The difference between n and $(n + 2)$ must be positive (it is given as 120), so the term $(n + 2)$ must appear first in the equation.

5. **The correct answer is (D).** Between noon and 5 p.m. on Sunday, 4 ounces dripped into the tank. The drip rate is 4 ounces in 5 hours, or $\frac{4}{5}$ ounce per hour. 9 hours later, at 2:00 a.m. on Monday, an additional $\frac{4}{5} \times 9 = \frac{36}{5}$ ounces will have dripped into the tank. The total accumulation of water is $7 + \frac{36}{5} = \frac{71}{5}$ ounces.

6. **The correct answer is (C).** Rug R must be 4' × 4', and rug S must be 2' × 2'. Also, since the floor's area is 112 and its length is 8, the floor's width = 14, which in turn equals the sum of the following five lengths (let x = the distance between the two rugs, as well as from each rug to the nearest east or west edge):

   $$x + 4 + x + 2 + x = 14$$
   $$3x = 8$$
   $$x = \frac{8}{3} = 2\frac{2}{3} \text{ feet or}$$

   2 feet, 8 inches

7. **The correct answer is 3.** First, notice that R must equal either 1 or 2; otherwise, the sum of the three numbers would greatly exceed 117. Assuming R = 1, the "ones" column tells us that the value of S would necessarily be 5. But the "tens" column would not add up correctly. Hence, R must equal 2 and, accordingly, S must equal 3.

8. **The correct answer is (C).** First, determine the percentage of trees on Main Street that are pine: 100% − 40% − 25% − 20% = 15%. Next, calculate the number of trees that are pine: 15% of 140 = (0.15)(140) = 21.

9. **The correct answer is (A).** The least common multiple of 4, 6, and 8 is 24. The greatest common factor of 44, 66, and 88 is 22.

10. **The correct answer is (B).** There are four odd numbers (1, 3, 5, and 7) and three even numbers (2, 4, and 6) on the spinner. So, the chances of yielding an odd number with the first spin are 4 in 7, or $\frac{4}{7}$. The chances of yielding an even number with the second spin are 3 in 7, or $\frac{3}{7}$. To determine the probability of both events occurring, combine the two individual probabilities by multiplication: $\frac{4}{7} \cdot \frac{3}{7} = \frac{12}{49}$.

11. **The correct answer is (C).** Angles $y°$ and $z°$ combine to form an angle whose measure exceeds 180° (a straight line) by $x°$. Hence, $y+z-x = 180$. Substitute the values for y and z given in the problem, and solve for x: $130 + 100 - x = 180$; $x = 50$.

12. **The correct answer is (B).** The median is the arithmetic mean of the two middle numbers. Since that median is zero (0), the two numbers must have the same absolute value, although either both are zero (0) or one is negative while the other is positive (for example, -1 and 1). Hence the smallest of the four numbers must be negative, while the largest must be positive. Given that the difference between these two numbers on the number line is 4, the smallest number must be greater than -4 (but less than zero (0)). Otherwise, the largest number would not be positive. So the smallest number's absolute value must be less than 4.

13. **The correct answer is (A).** To make the comparison, set up two equations based on the centered information:

$$P = 2Q$$
$$2(R - 2) = P - 2$$

Solving for P in the second equation gives you $P = 2R - 2$. Substitute $2R - 2$ for P in the first equation: $2R - 2 = 2Q$. This equation simplifies to $R - 2 = Q$, which shows clearly that $R > Q$.

14. **The correct answer is (D).** The inequality $ab < 0$ tells you that either a or b, but not both, is negative. Since $a < b$, a must be negative and b must be positive. But you cannot make the comparison between Quantity A and Quantity B. Which is greater depends on the absolute values of the two variables. For example, if $a = -1$ and $b = 2$, then $\frac{b}{a} < \frac{a}{b}$. On the other hand, if $a = -2$ and $b = 1$, then $\frac{b}{a} > \frac{a}{b}$.

15. **The correct answer is (D).** In the distribution described in Column B, if the third term is the precise average (arithmetic mean) of the other two terms, then Quantity A would equal Quantity B (for example, if the two distributions are {2,4} and {2,3,4}). Otherwise, Quantity B would be greater, since its middle term deviates from the mean of the other two terms.

16. **The correct answer is (C).** In 2000, worldwide (U.S. and non-U.S.) production was 39 million, while U.S. production was 8 million. The difference between the two numbers is 31 million.

17. **The correct answer is (B).** Between 1990 and 2000, the increase in worldwide production (which includes Japan and the United States) was about the same as the net (combined) increase in Japan and U.S. production during the same decade, indicating no significant change in worldwide production, excluding the U.S. and Japan. However, during the previous two decades (1970–1990) and during 2000–2010, worldwide increases exceeded net (combined) increases in the U.S. and Japan.

18. **The correct answer is (E).** The triangle is isosceles, and so $m\angle A = m\angle C$. Letting a, b, and c represent the degree measures of $\angle A$, $\angle B$, and $\angle C$, respectively, solve for a:

$$a + b + c = 180$$
$$2a + b = 180 \quad [a = c]$$
$$\frac{2a}{2} = \frac{180}{2} - \frac{b}{2}$$
$$a = 90 - \frac{b}{2}$$

19. **The correct answer is (B).** Assign a "weight" to each of the three salary figures (to save time, express all numbers in thousands):

5(150) = 750
3(170) = 510
1(180) = 180

Then determine the weighted average of the nine salaries:

$$750 + 510 + 180 = 1{,}440$$
$$\frac{1{,}440}{9} = 160$$

20. **The correct answer is (C).** The region of the number line from 2.3 to 2.5 has been divided into 10 congruent regions. The distance from 2.3 to 2.5 is 0.2. Thus, the vertical marks are spaced at intervals of 0.02. Accordingly, B = 2.38.

21. **The correct answer is (B).** The two number series have in common integers 21 through 50. So you can subtract (or cancel) all of these integers from both sides of the comparison. That leaves you to compare (19 + 20) to 51. You can now see clearly that Quantity B is greater.

22. **The correct answer is (A).** First, Quantity A: x is the average of 2 and 4; that is, $x = 3$. Next, Quantity B: y is the average of 3 and 1; that is, $y = 2$.

23. **The correct answer is (C).** To make the comparison, set up two proportions. Quantity A is x in the equation $\frac{8}{16} = \frac{x}{5}$, and Quantity B is y in the equation $\frac{1}{6} = \frac{y}{15}$. You can easily see that $x = 2.5$ and that $y = 2.5$.

24. **The correct answer is (D).** To solve the problem, first set up a fraction, and then factor the numerator and the denominator:

$$\frac{f(a)}{f(-a)} = \frac{a^2 + a}{(-a)^2 + (-a)}$$
$$= \frac{a^2 + a}{a^2 - a} = \frac{a(a+1)}{a(a-1)}$$
$$= \frac{a+1}{a-1}$$

25. The correct answer is (A). Paul has mowed $\frac{k}{m}$ of the lawn in k minutes. Still not mowed, then, is $1-\frac{k}{m}$, or $\frac{m-k}{m}$.

26. The correct answer is (C). Statement I must be true. On February 1st, more stations charged less than the average price than greater than the average price; in other words, the median price was less than the average price. Statement II is not necessarily true. On March 1st, the number of stations charging more than the average price was the same as the number of stations charging less than the average price; the median price is the average of the two middle prices, which may or may not be the same as the average of all 50 prices. Statement III must be true. The average price on March 1st was $2.40. The median price on January 1st was greater than the average price of $2.50.

27. The correct answer is (A). wheel B's radius, and therefore its circumference as well, is 50 times greater than wheel A's (3:150 = 1:50). In order to travel as far each minute as wheel A travels per hour, wheel B's circumference would need to be 60 times greater (since there are 60 minutes per hour), but it's not that big. Thus, wheel A travels farther in one minute than wheel B does in one hour. (The number of revolutions per minute is not relevant, since the rotation rate is the same for both wheels.)

28. The correct answer is (D). All terms on both sides cancel out:

$$3x - 3 - 4x = x - 7 - 2x + 4$$
$$-x - 3 = -x - 3$$
$$0 = 0$$

Therefore, x = any real number.