

GRE Sample Paper 03

A) Test Components: Analytical Writing — Verbal Reasoning — Quantitative Reasoning

B) Total Questions: 108 Questions

C) Total Time Allowed: 3 Hours 45 Minutes

- **Analytical Writing:** 2 Essays — 60 Minutes
- **Verbal Reasoning:** 2 Sections — 82 Minutes Total
- **Quantitative Reasoning:** 2 Sections — 94 Minutes Total

D) Marking Scheme:

- **Correct Answer:** +1 Point
- **Incorrect/Unattempted:** 0 Points (No Negative Marking)
- **Multi-blank/Equivalence:** No partial credit.

SECTION I: ANALYTICAL WRITING

1. Analyze an Issue (30 Minutes)

"The surest indicator of a great nation is not the achievements of its rulers, artists, or scientists, but the general welfare of its average citizens."

2. Analyze an Argument (30 Minutes)

The following appeared in a memorandum from the marketing director of the "Health-First" snack food company.

"Last year, our primary competitor, Vital-Bites, switched from plastic packaging to biodegradable corn-starch bags for all products sold in their flagship San Francisco store. Since that change, their sales at that location have increased by 25 percent. To reverse our own declining national sales and improve our brand image, Health-First should immediately switch all of our product packaging nationwide to the same biodegradable materials. This will ensure we capture the same market growth experienced by Vital-Bites while reducing our environmental impact."

SECTION II: VERBAL REASONING - PART 1

Q1. While the startup's business plan was initially _____, lacking clear financial projections or a defined target market, it eventually matured into a sophisticated strategy that attracted major investors.

- A. Inchoate
- B. Prophetic
- C. Redundant
- D. Fastidious

Q2. The CEO's reputation for _____ was well-earned; he was known to spend hours debating even the smallest expenditures, often to the frustration of his department heads.

- A. Magnanimity
- B. Parsimony
- C. Alacrity
- D. Ebullience

Q3. The novelist was (i) _____ as a child, rarely speaking in class; however, as an adult, she became a (ii) _____ public speaker, known for her bold and commanding presence on stage.

- A. (i) Garrulous; (ii) Reticent
- B. (i) Diffident; (ii) Assertive
- C. (i) Diffident; (ii) Laconic
- D. (i) Gregarious; (ii) Assertive

Q4. The environmental report noted that while the current levels of pollutants are (i) _____, the projected increase in industrial activity over the next decade will likely (ii) _____ the ecosystem's ability to recover.

- A. (i) Negligible; (ii) Bolster
- B. (i) Pernicious; (ii) Exacerbate
- C. (i) Negligible; (ii) Compromise
- D. (i) Salubrious; (ii) Compromise

Q5. The passage suggests that the rise of the daguerreotype in the mid-19th century:

- A. Led to the immediate disappearance of oil portraiture.
- B. Was initially embraced only by the wealthiest echelons of society.
- C. Forced painters to shift their focus toward more abstract or non-literal representations.
- D. Was primarily used for landscape photography rather than portraiture.

Q6. According to the passage, the "democratization of the image" refers to:

- A. The ability of the common citizen to afford a visual likeness of themselves.
- B. The government's role in regulating the early photography industry.
- C. The shared artistic standards between painters and photographers.
- D. The use of photography in political campaigns to sway public opinion.

Q7. The author mentions "miniature painters" primarily to:

- A. Identify a group of artists who successfully transitioned into photography.
- B. Highlight a profession that was economically threatened by technological innovation.
- C. Contrast their use of color with the monochrome nature of early photographs.
- D. Explain the technical process of developing images on silver plates.

Q8. The testimony provided by the witness was found to be _____, as it contained several significant inconsistencies that directly contradicted the physical evidence.

- A. Mendacious and Deceitful
- B. Candid and Frank
- C. Innocuous
- D. Tenuous

Q9. There is a notorious _____ of affordable housing in the city, a situation that has forced many essential workers to commute from over fifty miles away.

- A. Glut and Plethora
- B. Dearth and Scarcity
- C. Paucity and Profusion
- D. Surfeit

Q10. A study found that cities with more public parks have lower rates of respiratory illness. The researchers concluded that the trees in the parks filter the air. Which of the following, if true, most weakens this conclusion?

- A. The cities with more parks also have much stricter industrial emissions laws.
- B. Public parks are often used for athletic activities and exercise.
- C. Some types of trees produce pollen that can irritate the respiratory system.
- D. Citizens in cities with many parks reported higher levels of general happiness.

Q11. Choose the sentence that correctly utilizes the rules of parallel structure:

- A. The job requires experience in coding, to manage databases, and communication.
- B. The job requires experience in coding, managing databases, and communicating.
- C. The job requires coding, the management of databases, and to communicate.
- D. The job requires that you code, manage databases, and also communication.

Q12. In the phrase "the plastic nature of the human brain," the word "plastic" most nearly means:

- A. Synthetic and artificial
- B. Malleable and Adaptable
- C. Rigid and Unchanging
- D. Fragile and easily broken

SECTION III: VERBAL REASONING - PART 2

Q1. The novelist's style was notoriously (i) _____, utilizing (ii) _____ vocabulary that forced even the most literate readers to consult a dictionary, ultimately making the reading experience (iii) _____.

- A. (i) Pedantic; (ii) Erudite; (iii) Taxing
- B. (i) Lucid; (ii) Mundane; (iii) Effortless
- C. (i) Pedantic; (ii) Trivial; (iii) Taxing
- D. (i) Succinct; (ii) Erudite; (iii) Rewarding

Q2. The proposed legislation was intended to be (i) _____, but the (ii) _____ amendments added by various lobbyists turned it into a partisan tool.

- A. (i) Equitable; (ii) Tendentious
- B. (i) Bias; (ii) Objective
- C. (i) Equitable; (ii) Disinterested

D. (i) Radical; (ii) Comprehensive

Q3. While many found the film's ending (i) _____, others argued that the ambiguity was a (ii) _____ choice designed to provoke reflection.

A. (i) Frustrating; (ii) Calculated

B. (i) Satisfying; (ii) Random

C. (i) Frustrating; (ii) Accidental

D. (i) Clear; (ii) Calculated

Q4. The scientist found the results (i) _____, but the (ii) _____ funding for the project prevented her from conducting the necessary follow-up experiments.

A. (i) Anomalous; (ii) Meager

B. (i) Consistent; (ii) Abundant

C. (i) Anomalous; (ii) Lavish

D. (i) Predictable; (ii) Meager

Q5. The composer's reputation for _____ was well-deserved; he often incorporated sounds from nature, industrial machinery, and folk instruments into his symphonies.

A. Orthodoxy

B. Eclecticism

C. Banal

D. Monotony

Q6. The ancient manuscript was so _____ that historians spent decades trying to translate even the first few pages.

A. Pellucid

B. Enigmatic

C. Transparent

D. Mundane

Q7. According to the passage, the primary cause of "Colony Collapse Disorder" in honeybees is:

A. The lack of genetic diversity in commercial hives.

B. A combination of pathogens, pesticides, and habitat loss.

C. The over-harvesting of honey by commercial beekeepers.

D. The natural migration patterns of invasive hornet species.

Q8. The author mentions "monoculture farming" primarily to:

- A. Highlight a practice that restricts the nutritional variety available to bees.
- B. Argue that modern agriculture is more efficient than traditional methods.
- C. Explain why pesticides are necessary for large-scale crop production.
- D. Contrast the diet of honeybees with that of solitary bumblebees.

Q9. Which of the following best expresses the "vicious cycle" described in the final paragraph?

- A. Pesticides weaken bee immunity, making them more susceptible to existing viruses.
- B. Bees migrate to find food, which spreads diseases to new regions.
- C. Farmers use more chemicals to compensate for the loss of natural pollinators.
- D. Genetic engineering of crops leads to the mutation of bee pathogens.

Q10. A study found that people who eat dark chocolate have lower blood pressure. However, the study also found that these individuals generally exercise more than those who avoid chocolate. Which weakens the conclusion that chocolate causes lower blood pressure?

- A. Dark chocolate contains high levels of antioxidants.
- B. The study was funded by a major confectionery corporation.
- C. Exercise is a known factor in reducing blood pressure.
- D. Participants in the study reported higher levels of overall happiness.

Q11. The critic was known for being _____, often delivering harsh judgments that ignored any redeeming qualities in a performance.

- A. Vitriolic and Acerbic
- B. Laudatory and Commendatory
- C. Ambivalent
- D. Benevolent

Q12. The CEO's speech was _____, providing a wealth of information in a very short amount of time.

- A. Laconic and Terse
- B. Garrulous and Verbose

C. Circuitous

D. Prolix

Q13. The atmosphere in the room became _____ after the controversial decision was announced, with several board members shouting at one another.

A. Fractious and Contentious

B. Harmonious and Serene

C. Apathetic

D. Soporific

Q14. The new skyscraper was _____ in its design, featuring a glass facade that seemed to change color depending on the angle of the sun.

A. Diaphanous and Translucent

B. Opaque and Dense

C. Mundane

D. Standard

Q15. The politician's views were _____, often shifting depending on the results of the most recent public opinion polls.

A. Capricious and Mercurial

B. Stedfast and Unwavering

C. Dogmatic

D. Orthodox

SECTION IV: QUANTITATIVE REASONING - PART 1

Q1. A sum of money was invested in a fund that grew by 10% in the first year and then decreased by 10% in the second year.

Quantity A	Quantity B
The value of the fund at the end of the second year	The original amount invested

A. Quantity A is greater.

B. Quantity B is greater.

- C. The two quantities are equal.
- D. The relationship cannot be determined from the information given.

Q2. The sum of three consecutive odd integers is 111. What is the value of the largest of these three integers?

- A. 35
- B. 37
- C. 39
- D. 41
- E. 43

Q3. A square has a perimeter of P and a circle has a circumference of P .

Quantity A	Quantity B
The area of the square	The area of the circle

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

Q4. n is an integer such that $-5 < n < 5$.

Quantity A	Quantity B
n^2	n^3

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

Q5. If $\frac{1}{2}x - 5 = \frac{1}{3}x + 2$, what is the value of x ?

- A. 14
- B. 21
- C. 35
- D. 42

E. 49

Q6. In a certain triangle, the ratio of the measures of the three interior angles is 2:3:5. What is the measure of the largest angle in degrees?

A. 18

B. 36

C. 54

D. 72

E. 90

Q7. A committee of 3 people is to be chosen from a group of 6 volunteers. How many different committees can be formed?

A. 18

B. 20

C. 40

D. 60

E. 120

Q8. A cylindrical tank has a base radius of 3 meters and a height of 10 meters. If the tank is half full of water, what is the volume of the water in cubic meters?

A. 15π

B. 30π

C. 45π

D. 60π

E. 90π

Q9. If x and y are distinct prime numbers, which of the following must be true? (Select all that apply)

☐ xy is an even integer.

☐ The greatest common divisor of x and y is 1.

☐ $x + y$ is an even integer.

Q10. Pipe A can fill a pool in 6 hours, and Pipe B can fill the same pool in 12 hours. If both pipes are turned on at the same time, how many hours will it take to fill the pool?

Q11. If $f(x) = 2x^2 - 3$, what is the value of $f(f(2))$?

- A. 5
- B. 17
- C. 25
- D. 47
- E. 50

Q12. The median of a list of seven distinct integers is 15. If the three smallest integers are removed from the list, what is the smallest possible value for the median of the remaining four integers?

SECTION V: QUANTITATIVE REASONING - PART 2

Q1. $x > 0$ and $y > 0$.

Quantity A	Quantity B
$\sqrt{x+y}$	$\sqrt{x} + \sqrt{y}$

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

Q2. x is an even integer and y is an odd integer.

Quantity A	Quantity B
$(-1)^x$	$(-1)^y$

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

Q3. A set of data D consists of 100 identical values.

Quantity A	Quantity B
The range of set D	The standard deviation of set D

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

Q4. An item is originally priced at d dollars. It is first discounted by 20%, and then an additional 10% discount is applied to the discounted price. What is the total percent discount from the original price?

- A. 28%
- B. 30%
- C. 32%
- D. 35%
- E. 72%

Q5. Two trains are 300 miles apart on parallel tracks. Train A travels at 60 mph and Train B travels at 40 mph. If they start at the same time and travel toward each other, how many hours will it take for them to meet?

- A. 2
- B. 3
- C. 5
- D. 7.5
- E. 10

Data Interpretation: Student Enrollment by Department (2020-2023)

Year	Science Dept Enrollment	Arts Dept Enrollment
2020	1,200	1,500
2021	1,320	1,400
2022	1,500	1,250
2023	1,800	1,100

Q6. What was the percent increase in Science Department enrollment from 2020 to 2021?

- A. 5%
- B. 10%
- C. 12%
- D. 15%

E. 20%

Q7. In 2022, Science Department enrollment accounted for approximately what percent of the combined enrollment of both departments?

A. 45%

B. 50%

C. 55%

D. 60%

E. 65%

Q8. What was the average (arithmetic mean) enrollment for the Arts Department over the four-year period?

Q9. In the xy -coordinate plane, what is the distance between the points $(-2, 3)$ and $(4, -5)$?

A. 6

B. 8

C. 10

D. 12

E. 14

Q10. If $x \neq 0$ and $y \neq 0$, simplify the expression $\frac{12x^5y^2}{3x^2y^4}$. If the simplified form is ax^by^c , what is the value of $a + b + c$?

Q11. A chemist has 10 liters of a solution that is 10% salt by volume. How many liters of water must be added to create a solution that is only 5% salt by volume?

A. 5

B. 10

C. 15

D. 20

E. 25

Q12. A circle with center O has a radius of 5. AB is a chord of the circle.

Quantity A	Quantity B
The length of chord AB	10

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

Q13. What is the units digit of 7^{25} ?

- A. 1
- B. 3
- C. 5
- D. 7
- E. 9

Q14. A fair coin is flipped 3 times. What is the probability that the coin lands on "Heads" exactly twice?

- A. $\frac{1}{8}$
- B. $\frac{1}{4}$
- C. $\frac{3}{8}$
- D. $\frac{1}{2}$
- E. $\frac{5}{8}$

Q15. In a survey of 100 people, 45 people like coffee, 35 people like tea, and 20 people like both. How many people surveyed like neither coffee nor tea?

Solutions - Verbal Reasoning Section I

1. **(A)** The sentence describes a business plan that was "initially" lacking and unformed but "eventually matured." "Inchoate" means just begun and so not fully formed or developed, which perfectly fits a plan lacking projections and targets.
2. **(B)** The context involves a CEO who spends hours debating "even the smallest expenditures," causing frustration. "Parsimony" refers to extreme unwillingness to spend money or use resources, which accurately describes this behavior.
3. **(B)** For blank (i), "diffident" (meaning shy or lacking self-confidence) fits the description of a child "rarely speaking in class." For blank (ii), the contrast word "however" signals a shift to the adult's "bold and commanding presence," which is best described as "assertive."
4. **(C)** The sentence uses a "while/but" structure. If current levels are "negligible" (so small as to be unimportant), the contrast is that a future increase will "compromise" (weaken or bring into danger) the ability of the ecosystem to recover.
5. **(C)** Mid-19th-century photography (daguerreotypes) provided such realistic likenesses that painters could no longer compete on the basis of realism. This historical shift "forced painters to shift their focus toward more abstract or non-literal representations," leading to movements like Impressionism.
6. **(A)** Historically, "democratization of the image" refers to the fact that because photography was significantly cheaper than commissioned oil paintings, the "common citizen" could finally "afford a visual likeness of themselves."
7. **(B)** Miniature painters were the primary professionals who created small, affordable portraits before photography. The author mentions them to "highlight a profession that was economically threatened" because the daguerreotype performed the same function faster and more accurately.
8. **(A)** In Sentence Equivalence, we need two words describing testimony that has "inconsistencies" and "contradicted evidence." "Mendacious" and "deceitful" both mean untruthful or lying, which fits the logical context of the witness's failure.
9. **(B)** The context describes a lack of housing that "forced workers to commute from over fifty miles away." "Dearth" and "scarcity" both refer to a situation where there is not enough of something.
10. **(A)** The original argument claims parks cause lower illness. To weaken this, we look for a confounding variable. Option (A) suggests that higher income (which often correlates with park-heavy areas) provides better healthcare, implying healthcare might be the actual cause of lower illness.
11. **(B)** Parallel structure requires that all items in a list share the same grammatical form. Option (B) correctly uses three gerunds (coding, managing, communicating), whereas the other options mix infinitives, nouns, and phrases.
12. **(B)** In the context of neurobiology, "plastic" refers to neuroplasticity. It describes the brain's ability to be "malleable and adaptable," changing its structure and functions in response to experience or injury.

Solutions - Verbal Reasoning Section II

1. (A) For blank (i), "pedantic" describes a style overly concerned with minor details. For blank (ii), "erudite" (showing great knowledge) fits a vocabulary requiring a dictionary. For blank (iii), these factors combined make the experience "taxing" (mentally demanding).
2. (A) The contrast "but" suggests the intent was for the law to be "equitable" (fair/impartial), but lobbyists added "tendentious" (biased/promoting a specific cause) amendments, turning it into a partisan tool.
3. (A) The sentence establishes two viewpoints. While some found the ambiguity "frustrating," others saw it as a "calculated" (deliberate/strategic) choice intended to make the audience think.
4. (A) "Anomalous" means deviating from what is expected; if the results were strange, a scientist would want follow-up experiments. However, "meager" (small/lacking) funding prevented that research.
5. (B) A reputation for incorporating a wide, diverse range of sounds (nature, machinery, folk) is the definition of "eclecticism" (deriving ideas from a broad and diverse range of sources).
6. (B) If historians spent "decades" trying to translate just a few pages, the manuscript must be "enigmatic," meaning difficult to interpret or mysterious.
7. (B) Scientific passages on Colony Collapse Disorder typically identify it as a multifactorial issue involving "pathogens, pesticides, and habitat loss" rather than a single isolated cause.
8. (A) In biological contexts, monoculture (growing only one crop) is mentioned because it "restricts the nutritional variety" available to pollinators, as they can only forage from one type of flower.
9. (A) The "vicious cycle" refers to the interaction between environment and health: pesticides weaken the bee's immune system, which in turn makes them more vulnerable to the viruses already present in the environment.
10. (C) The conclusion is that chocolate improves blood pressure. However, if those people also exercise more, and exercise is a known cause of lower blood pressure, the conclusion is weakened because exercise is a confounding variable.
11. (A) "Vitriolic" and "acerbic" both describe criticism that is harsh, bitter, or sharp. Both words complete the sentence to describe a critic who ignores redeeming qualities.
12. (A) "Laconic" and "terse" both describe using very few words to convey a great deal of information ("wealth of information in a very short time").
13. (A) Board members "shouting at one another" indicates a "fractious" and "contentious" atmosphere, both meaning irritable and likely to cause an argument.

14. **(A)** A glass facade that changes with the sun implies a quality of light and sheerness. "Diaphanous" and "translucent" both describe materials that allow light to pass through.
15. **(B)** Views that "shift depending on the results of public opinion polls" are "capricious" and "mercurial," both meaning unpredictable or changing suddenly and often.

Solutions - Quantitative Reasoning Section I

- (B)** Let original amount be 100. Increase by 10% $\rightarrow$ 110. Decrease 110 by 10%: $110 - 0.10(110) = 110 - 11 = 99$. Since $99 < 100$, Quantity B is greater.
- (39)** Let the integers be $n - 2, n, n + 2$. Sum: $3n = 111 \Rightarrow n = 37$. The integers are 35, 37, 39. The largest is 39.
- (B)** Square side $s = P/4 \rightarrow$ Area $= P^2/16 \approx 0.0625P^2$. Circle radius $r = P/(2\pi) \rightarrow$ Area $= \pi(P/2\pi)^2 = P^2/(4\pi) \approx 0.0796P^2$. The circle has a larger area.
- (D)** If $n = 4$, $n^2 = 16 < n^3 = 64$ (B greater). If $n = -4$, $n^2 = 16 > n^3 = -64$ (A greater). The relationship is inconsistent.
- (42)** Multiply by 6: $3x - 30 = 2x + 12 \Rightarrow x = 42$.
- (90)** Let angles be $2x, 3x, 5x$. Sum: $10x = 180 \Rightarrow x = 18$. Largest angle $= 5(18) = 90^\circ$.
- (20)** Combination: $\binom{6}{3} = \frac{6 \times 5 \times 4}{3 \times 2 \times 1} = 20$.
- (45 π)** Total Volume $= \pi r^2 h = \pi(3^2)(10) = 90\pi$. Half full $= 45\pi$.
- (B)** Primes are only divisible by 1 and themselves. Distinct primes share no common factors other than 1. xy is only even if one prime is 2; $x + y$ is only even if neither prime is 2.
- 4** Combined rate $= 1/6 + 1/12 = 3/12 = 1/4$ pool/hour. Time $= 4$ hours.
- (47)** $f(2) = 2(2^2) - 3 = 5$. Then $f(5) = 2(5^2) - 3 = 50 - 3 = 47$.
- 16.5** Let the set be $\{a, b, c, 15, e, f, g\}$. Removing a, b, c leaves $\{15, e, f, g\}$. For distinct integers, the smallest values for e, f, g are 16, 17, 18. The median of $\{15, 16, 17, 18\}$ is $(16 + 17)/2 = 16.5$.

Solutions - Quantitative Reasoning Section II

1. **(B)** Square both sides: $(\sqrt{x+y})^2 = x+y$ and $(\sqrt{x} + \sqrt{y})^2 = x+y+2\sqrt{xy}$. Since $x, y > 0$, $2\sqrt{xy}$ is positive, making Quantity B greater.
2. **(A)** $(-1)^{\text{even}} = 1$ and $(-1)^{\text{odd}} = -1$. Since $1 > -1$, Quantity A is greater.
3. **(C)** If all values are identical, there is no difference between the highest and lowest (Range = 0) and no deviation from the mean (Standard Deviation = 0).
4. **(28%)** $1.00d \xrightarrow{-20\%} 0.80d \xrightarrow{-10\%} 0.80d(0.90) = 0.72d$. Total discount = $1.00 - 0.72 = 28\%$.
5. **(3)** Relative speed = $60 + 40 = 100$ mph. Time = $300/100 = 3$ hours.
6. **(10%)** Increase = $1320 - 1200 = 120$. Percent = $120/1200 = 10\%$.
7. **(55%)** Total = $1500 + 1250 = 2750$. Science % = $1500/2750 \approx 0.545$ or 55%.
8. **1312.5** Average = $(1500 + 1400 + 1250 + 1100)/4 = 5250/4 = 1312.5$.
9. **(10)** Distance = $\sqrt{(4 - (-2))^2 + (-5 - 3)^2} = \sqrt{6^2 + (-8)^2} = \sqrt{36 + 64} = 10$.
10. **5** $\frac{12x^5y^2}{3x^2y^4} = 4x^3y^{-2}$. Here $a = 4, b = 3, c = -2$. Sum = $4 + 3 - 2 = 5$.
11. **(10)** Salt = $0.10(10) = 1\text{L}$. Let w be water added: $1/(10 + w) = 0.05 \Rightarrow 1 = 0.5 + 0.05w \Rightarrow 0.5 = 0.05w \Rightarrow w = 10$.
12. **(D)** The longest possible chord in a circle is the diameter ($2r = 10$). A chord AB can be any length up to 10. The relationship cannot be determined.
13. **(7)** Units digit cycle of 7: 7, 9, 3, 1. Since $25 \div 4$ leaves a remainder of 1, the units digit is the first in the cycle: 7.
14. **(3/8)** Outcomes with 2H: HHT, HTH, THH. Total outcomes = $2^3 = 8$. Prob = $3/8$.
15. **40** Total liking coffee or tea = $45 + 35 - 20 = 60$. Neither = $100 - 60 = 40$.