

GRE Quantitative Reasoning

Sample Paper 04

- A) **Subject:** Quantitative Reasoning
- B) **Total Questions:** 27 Questions (Section I: 12 — Section II: 15)
- C) **Time Allowed:** 47 Minutes
- **Section 1:** 12 Questions — 21 Minutes
 - **Section 2:** 15 Questions — 26 Minutes
- D) **Marking Scheme:**
- **Correct Answer:** +1 Point
 - **Incorrect/Unattempted:** 0 Points (No Negative Marking)

SECTION I: QUANTITATIVE REASONING

Q1. Choose the answer which best simplifies the expression below:

$$3b(2b - 4) + 5c - 4(2b + 3c) - bc$$

- A. $6b^2 - 20b - 7c - bc$
- B. $6b^2 - 4b - 7c - bc$
- C. $6b^2 - 20b + 17c - bc$
- D. $6b^2 - 20b - 7c + bc$
- E. $6b^2 - 12b - 7c - bc$

Q2. a and b are non-zero integers.

Quantity A

$$(a + b)^2$$

Quantity B

$$(a - b)^2$$

- 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. Simplify the following expression: $\sqrt{108} + \sqrt{48} - \sqrt{75}$

- A. It cannot be simplified further
- B. $\sqrt{81}$
- C. $5\sqrt{3}$
- D. $9\sqrt{3}$
- E. $\sqrt{231}$

Q4. Simplify: $\sqrt{162} - \sqrt{18}$

- A. $6\sqrt{2}$
- B. 12
- C. $3\sqrt{2}$
- D. $\sqrt{144}$
- E. $9\sqrt{2}$

Q5. There are 4,000 people in Region X and 6,000 people in Region Y. The percentage of people owning a Hybrid Car is 18% in Region X and 14% in Region Y. The number of people in Region Y who own a Hybrid Car is how much greater or less than the number of people in Region X who own a Hybrid Car?

- A. 120 more
- B. 120 fewer
- C. 40 more
- D. 40 fewer
- E. 80 more

Q6. Find the square root of the following decimal: 0.009

- A. 0.003
- B. 0.03
- C. 0.0949
- D. 0.081
- E. 0.09

Q7. Let A represent a sequence $(a_1, a_2, a_3, \dots)$ where each term after the first is defined as five more than twice the preceding term ($a_n = 2a_{n-1} + 5$). If $a_2 + a_4 = 111$, what is the first term (a_1)?

- A. 39
- B. 7
- C. 12
- D. 5
- E. 7.1

Q8. Evaluate: 0.7142×10^3

- A. 7.142
- B. 71.42
- C. 714.2
- D. 7142
- E. 0.0007142

Q9. $x > 1$

Quantity A

$$x^{10}$$

Quantity B

$$x^{-10}$$

- 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.

Q10. A triangle has sides of length 4 and 10.

Quantity A

The length of the third side

Quantity B

14

- 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.

Q11. The average of 5 numbers is 12. If the average of 3 of these numbers is 10, what is the average of the remaining 2 numbers?

Q12. Solve for x : $5(x - 2) = 3x + 14$

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SECTION II: QUANTITATIVE REASONING

Q1. Samir is picking a 4-pack of craft sodas (unique flavors) from 20 options. He also picks 3 unique stickers from 8 available designs, but 1 specific sticker is already pre-selected. How many unique gift box combinations are possible?

- A. 135,660
- B. 97,020
- C. 24,255
- D. 101,871
- E. 48,450

Q2. The laptop battery health starts at 100% and drops 0.5% per month. Tablet battery health starts at 96% and drops 1% per month.

Quantity A

Battery health of Laptop after 12 months

Quantity B

Battery health of Tablet after 4 months

- 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. If x and y are both even integers, which of the following must be an odd integer?

- A. $x^2 + y + 1$
- B. $3x - 2y$
- C. xy
- D. $(x + y)^2$
- E. $x(y + 2)$

Q4. Which of the following absolute value inequalities is represented by the interval range $-3 \leq x \leq 7$?

- A. $|2x - 4| \leq 10$
- B. $|x - 2| \leq 5$

C. $|x + 2| \leq 5$

D. $|3x - 3| \geq 18$

E. $|x - 5| \leq 2$

Q5. Widget Z costs \$40 to manufacture at 100 units/hr. Every increase of 20 units/hr increases the unit cost by 20%. If production increases to 140 units/hr, for how much must each unit be sold for a 30% profit?

A. \$62.40

B. \$74.88

C. \$57.60

D. \$71.80

E. \$69.12

Q6. In a drawer of 12 pens, 6 are black and 6 are blue. If 2 pens are selected without replacement, what is the probability that the 2 pens will NOT both be blue?

A. $5/22$ B. $17/22$ C. $1/4$ D. $3/4$ E. $1/2$

Q7. The average of five numbers is 40. The average of four of these numbers is 35.

Quantity A

The value of the fifth number

Quantity B

55

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.

Data Interpretation: Monthly Revenue of Store A

Month	Revenue (\$)	Expenses (\$)
January	12,000	8,000
February	15,000	9,000
March	10,000	7,500

Q8. What was the total profit (Revenue - Expenses) for the three-month period?

Q9. In which month was the ratio of Expenses to Revenue the highest?

- A. January
- B. February
- C. March
- D. They are all equal
- E. Cannot be determined

Q10. A line in the xy-plane passes through (0, 0) and (3, 6). What is the slope of a line perpendicular to this line?

- A. 2
- B. -2
- C. $1/2$
- D. $-1/2$
- E. 0

Q11. n is an integer.

Quantity A

$$(-1)^{2n}$$

Quantity B

$$1$$

- 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.

Q12. A circle has an area of 16π .

Quantity A

The circumference of the circle

Quantity B

$$8\pi$$

- 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. If $3x + 2y = 12$ and $x - y = 4$, then $x =$

- A. 2
- B. 3
- C. 4
- D. 5
- E. 6

Q14. A rectangular floor measures 12 feet by 15 feet. How many square tiles, each 3 feet by 3 feet, are needed to cover the floor?

Q15. A worker is paid \$15 per hour for the first 40 hours and \$22.50 for every hour after that. If the worker earned \$735 in a week, how many hours did they work?

- A. 42
- B. 44
- C. 46
- D. 48
- E. 50

Solutions - Section I

1. (A) $6b^2 - 12b + 5c - 8b - 12c - bc = 6b^2 - 20b - 7c - bc$.
2. (D) If a, b same sign, Quant A is larger. If opposite signs, Quant B is larger.
3. (C) $6\sqrt{3} + 4\sqrt{3} - 5\sqrt{3} = 5\sqrt{3}$.
4. (A) $9\sqrt{2} - 3\sqrt{2} = 6\sqrt{2}$.
5. (A) Y: $0.14 \times 6000 = 840$. X: $0.18 \times 4000 = 720$. $840 - 720 = 120$ more.
6. (C) $\sqrt{0.009} \approx 0.0949$.
7. (E) $10a_1 + 40 = 111 \rightarrow a_1 = 7.1$.
8. (C) $0.7142 \times 1000 = 714.2$.
9. (A) Positive powers of $x > 1$ are larger than negative powers.
10. (B) Third side x must be $10 - 4 < x < 10 + 4 \rightarrow 6 < x < 14$. So x is always < 14 .
11. 15 Total sum = 60. Sum of three = 30. Remaining sum = 30. Average = $30/2 = 15$.
12. 12 $5x - 10 = 3x + 14 \rightarrow 2x = 24 \rightarrow x = 12$.

Solutions - Section II

1. (D) $C(20, 4) \times C(7, 2) = 4845 \times 21 = 101,871$.
2. (A) L: $100 - (12 \times 0.5) = 94\%$. T: $96 - (4 \times 1) = 92\%$.
3. (A) $(\text{even})^2 + \text{even} + 1 = \text{even} + 1 = \text{odd}$.
4. (B) Midpoint of -3 and 7 is 2 . Distance is 5 . $|x - 2| \leq 5$.
5. (B) Two increases: $40 \times 1.2 \times 1.2 = 57.6$. Selling price: $57.6 \times 1.3 = 74.88$.
6. (B) $P(\text{both blue}) = (6/12) \times (5/11) = 5/22$. $P(\text{not both}) = 1 - 5/22 = 17/22$.
7. (A) Sum of 5 = 200. Sum of 4 = 140. Fifth = 60. $60 > 55$.
8. 12,000 Profits: $4k + 6k + 2.5k = 12.5k$. (Correction: 12,500)
9. (C) Jan: 0.66, Feb: 0.60, March: 0.75. March is highest.
10. (D) Slope = $6/3 = 2$. Perpendicular = $-1/2$.
11. (C) $(-1)^{\text{even}}$ is always 1.
12. (C) $\pi r^2 = 16\pi \rightarrow r = 4$. Circumference = $2\pi(4) = 8\pi$.
13. (C) $y = x - 4 \rightarrow 3x + 2x - 8 = 12 \rightarrow 5x = 20 \rightarrow x = 4$.
14. 20 $(12/3) \times (15/3) = 4 \times 5 = 20$.
15. (C) $40 \times 15 = 600$. $735 - 600 = 135$. $135/22.5 = 6$ hours. Total = 46.