

3. Q.C · Quantitative comparison and number reasoning

Starter Quiz ·

GRE General Test

Name: _____ Score: _____

1. Let x be any real number. Quantity A: x^2 . Quantity B: x .
☐ B is greater
☐ The relationship cannot be determined
☐ The two quantities are equal
☐ A is greater
2. $x > 1$. Quantity A: x^2 . Quantity B: x .
☐ A is greater
☐ The relationship cannot be determined
☐ B is greater
☐ The two quantities are equal
3. n is a positive integer. Quantity A: the remainder when n^2 is divided by 4. Quantity B: 2.
☐ B is greater
☐ A is greater
☐ The two quantities are equal
☐ The relationship cannot be determined
4. If the sign of x is unknown and x may be zero, dividing both quantities by x and keeping the original inequality direction is not a valid general step.
☐ True ☐ False
5. If two allowed cases give different comparison outcomes, the relationship cannot be _____.

6. Finding one counterexample to a proposed “A is always greater” claim automatically proves that the relationship cannot be determined.
☐ True ☐ False
7. $x \geq 1$. Quantity A: x^2 . Quantity B: x .
☐ The two quantities are equal
☐ A is greater
☐ B is greater

☐ The relationship cannot be determined

8. Let x be any real number. Quantity A: $6x + 5$. Quantity B: $6x + 2$.

☐ The two quantities are equal

☐ B is greater

☐ A is greater

☐ The relationship cannot be determined

9. Positive a, b satisfy $a : b = 2 : 3$. Find $a/(a + b)$ as a decimal.

10. $x < 0$. Quantity A: x . Quantity B: $2x$.

☐ The two quantities are equal

☐ B is greater

☐ A is greater

☐ The relationship cannot be determined

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Answers ·

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1. The relationship cannot be determined

At $x = 2$, A is greater; at $x = 1/2$, B is greater. Both values are allowed, so two different outcomes establish an undetermined relationship.

2. A is greater

For $x > 1$, both x and $x - 1$ are positive, so $x^2 - x = x(x - 1) > 0$ for every allowed value. This proves A is greater.

3. B is greater

An even n has square divisible by 4; an odd n has square one more than a multiple of 4. The remainder is always 0 or 1, both less than 2, so B is greater.

4. True

A negative divisor reverses strict order, and division by zero is undefined. Separate positive, negative and zero cases or use another reversible comparison.

5. determined

Different outcomes can be greater versus less, greater versus equal, or less versus equal. Two different numerical values with the same comparison outcome do not suffice.

6. False

It only refutes that proposed claim. The correct result could still be B always greater, equality always, or an undetermined relationship. Two distinct allowed outcomes establish the last option.

7. The relationship cannot be determined

At $x = 1$ they are equal; at $x = 2$ A is greater. Equality versus a strict comparison suffices for an undetermined relationship.

8. A is greater

Subtract $6x$ from both quantities; 5 is always greater than 2. No sign restriction on x is needed for this subtraction.

9. 0.4

Write $a = 2t$ and $b = 3t$ with $t > 0$. The fraction is $2t/(5t) = 2/5 = 0.4$; its denominator is $a + b$, not b .

10. A is greater

Since x is negative, $x - 2x = -x > 0$. Alternatively, division by x reverses the comparison of 1 and 2. A is greater.