Quantitative Section: Overview

Your test will include either two or three 35-minute quantitative sections. There will be 20 questions in each section and the first 7-8 of these will be quantitative comparisons. A very basic calculator will be provided on the computer screen.

Like the verbal reasoning questions, quantitative questions often test your skills in reading a question and identifying your own assumptions. Watch out for tricks! For example, geometric figures are usually not drawn to scale. Part of your job is to figure out whether the conditions you are given could produce any different shapes, and to choose only the answers that could apply to every possible shape they might make. Questions address topics like:

- **Arithmetic**
  - Fractions, decimals, exponents, percents, square roots, prime numbers

- **Algebra**
  - Simultaneous and quadratic equations, slope, word problems

- **Geometry**
  - Lines, circles, triangles, area, perimeter, Pythagorean theorem

- **Number properties**
  - Rounding; positives and negatives; number lines; integers; rational, irrational, prime, odd, and even numbers

- **Data Analysis**
  - Mean, median, mode; probability; standard deviation; reading charts and tables

For math conventions used on the GRE, refer to this link:

For math review provided by ETS, refer to this link:

For supplemental study material, refer to this link:
http://www.ets.org/gre/revised_general/prepare

Your Approach

- Read carefully!
- Do the easier questions first. If a question is taking too long, stop and move on.
- Use scratch paper
  - Write down ABDC at the beginning of each problem and cross off each letter as you eliminate that answer.
  - Label things on your scratch paper clearly.
- Whenever possible, estimate and compare instead of calculating.
- Use trial-and-error by plugging in easy numbers for questions with variables.
  - When comparing two quantities, make sure you try at least two very different numbers, perhaps a positive integer and a negative integer or fraction.
I. Quantitative Comparison

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.

<table>
<thead>
<tr>
<th>Quantity A</th>
<th>Quantity B</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2x^3$</td>
<td>$4x^2$</td>
</tr>
</tbody>
</table>

II. Multiple Choice

If 35 percent of the viewers who watch a certain program are male, what is the ratio of the number of males who watch the program to the number of females who watch it?

A. 13 to 7  B. 12 to 7  C. 3 to 7  D. 7 to 12  E. 7 to 13

III. Multiple Response

The circle graph above shows the distribution of 300,000 pints of ice cream by flavor. Which of the following sectors of the circle graph represent more than 60,000 pints? Indicate all such sectors.

A. Chocolate  B. Vanilla  C. Strawberry  D. Mint  E. Pistachio

IV. Numeric Entry

For the following question, enter your answer in the box.

In a graduating class of 278 students, 153 took algebra and 142 took biology. What is the greatest possible number of students that could have taken both algebra and biology?
Practice Test: Quantitative

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.

1. QRS is an isosceles triangle.
   Quantity A                  Quantity B
   Perimeter of QRS            17
   A  B  C  D

2. Runner A ran 4/5 of a kilometer and Runner B ran 800 meters.
   Quantity A                  Quantity B
   The distance that A ran     The distance that B ran
   A  B  C  D

3. A random variable Y is normally distributed with a mean of 200 and a standard deviation of 10.
   Quantity A                  Quantity B
   The probability of the event
   that the value of Y is greater
   than 220                     1/6
   A  B  C  D

4. Quantity A                  Quantity B
   (4+ √6)(4-√6)                10
   A  B  C  D
List $A$ and list $B$ each contain 50 numbers. Frequency distributions for each list are given above. The average (arithmetic mean) of the numbers in list $A$ is 2.5, and the average of the numbers in list $B$ is 7.4. List $C$ contains 100 numbers: the 50 from list $A$ and the fifty from list $B$.

<table>
<thead>
<tr>
<th>Quantity A</th>
<th>Quantity B</th>
</tr>
</thead>
<tbody>
<tr>
<td>The average of the 100 numbers on list $C$</td>
<td>The median of the 100 numbers on list $C$</td>
</tr>
</tbody>
</table>

6. If $\frac{-m}{19}$ is an even integer, which of the following must be true?

A. $m$ is a negative number  
B. $m$ is a positive number  
C. $m$ is a prime number  
D. $m$ is an odd integer  
E. $m$ is an even integer

7. For the following question, select all the answer choices that apply.

The total amount that Mary paid for a book was equal to the price of the book plus a sales tax that was 4 percent of the price of the book. Mary paid for the book with a $10 bill and received the correct change, which was less than $3.00. Which of the following statements must be true?

Indicate all such statements.

A. The price of the book was less than $9.50.  
B. The price of the book was greater than $6.90.  
C. The sales tax was less than $0.45.

8. Line $k$ lies in the $xy$ plane. The $x$-intercept of line $k$ is $-4$ and line $k$ passes through the midpoint of the line segment whose endpoints are $(2, 9)$ and $(2, 0)$. What is the slope of line $k$?

\[
\text{Slope} = \]
### Math Words to Know

Thinking of definitions in math can help you to realize their importance while also learning them in a way that’s directly applicable to the exam. Below are terms for which you might find a definition card useful. All these terms are covered in ETS’s [math review for the GRE](https://www.ets.org). You certainly don’t need to make definition cards for each of these words, but if you think it would help you, go for it!

<table>
<thead>
<tr>
<th>Term</th>
<th>Term</th>
<th>Term</th>
<th>Term</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>integer</td>
<td>circle</td>
<td>list</td>
<td>mutually exclusive</td>
<td>rational number</td>
</tr>
<tr>
<td>even</td>
<td>radius</td>
<td>intersection</td>
<td>vertical angles</td>
<td>real number</td>
</tr>
<tr>
<td>odd</td>
<td>diameter</td>
<td>union</td>
<td>opposite angles</td>
<td>terminating decimal</td>
</tr>
<tr>
<td>positive</td>
<td>arc</td>
<td>disjoint</td>
<td>square root</td>
<td>bisect</td>
</tr>
<tr>
<td>negative</td>
<td>parabola</td>
<td>right angle</td>
<td>absolute value</td>
<td>perpendicular bisector</td>
</tr>
<tr>
<td>divisible</td>
<td>pentagon</td>
<td>domain</td>
<td>acute</td>
<td>greatest common factor</td>
</tr>
<tr>
<td>multiple</td>
<td>hexagon</td>
<td>univariate</td>
<td>obtuse</td>
<td>least common multiple</td>
</tr>
<tr>
<td>remainder</td>
<td>octagon</td>
<td>bivariate</td>
<td>polygon</td>
<td>prime number</td>
</tr>
<tr>
<td>factor</td>
<td>perimeter</td>
<td>central tendency</td>
<td>triangle</td>
<td>prime factor</td>
</tr>
<tr>
<td>proportion</td>
<td>area</td>
<td>weighted mean</td>
<td>quadrilateral</td>
<td>composite number</td>
</tr>
<tr>
<td>zero</td>
<td>face</td>
<td>quartiles</td>
<td>circular cylinder</td>
<td>less than</td>
</tr>
<tr>
<td>one</td>
<td>cube</td>
<td>percentiles</td>
<td>lateral surface</td>
<td>greater than</td>
</tr>
<tr>
<td>reciprocal</td>
<td>volume</td>
<td>dispersion</td>
<td>right circular cylinder</td>
<td>percent</td>
</tr>
<tr>
<td>ratio</td>
<td>vertex</td>
<td>range</td>
<td>circumference</td>
<td>percent increase</td>
</tr>
<tr>
<td>axis</td>
<td>midpoint</td>
<td>outliers</td>
<td>rectangular solid</td>
<td>percent decrease</td>
</tr>
<tr>
<td>slope</td>
<td>stretched</td>
<td>trapezoid</td>
<td>regular polygon</td>
<td>circumscribed</td>
</tr>
<tr>
<td>x-intercept</td>
<td>shrunk</td>
<td>factorial</td>
<td>equilateral triangle</td>
<td>length of an arc</td>
</tr>
<tr>
<td>y-intercept</td>
<td>shifted</td>
<td>probability</td>
<td>right triangle</td>
<td>point of tangency</td>
</tr>
<tr>
<td>reflection</td>
<td>inscribed</td>
<td>permutation</td>
<td>hypotenuse</td>
<td>surface area</td>
</tr>
<tr>
<td>perpendicular</td>
<td>congruent</td>
<td>combination</td>
<td>parallelogram</td>
<td>symmetric</td>
</tr>
<tr>
<td>sector</td>
<td>tangent</td>
<td>line segment</td>
<td>compound interest</td>
<td>line of symmetry</td>
</tr>
<tr>
<td>legs</td>
<td>mean</td>
<td>finite set</td>
<td>measure of an arc</td>
<td>interquartile range</td>
</tr>
<tr>
<td>square</td>
<td>median</td>
<td>infinite set</td>
<td>nonempty set</td>
<td>standard deviation</td>
</tr>
<tr>
<td>rectangle</td>
<td>mode</td>
<td>empty set</td>
<td>universal set</td>
<td>sample standard deviation</td>
</tr>
<tr>
<td>chord</td>
<td>count</td>
<td>subset</td>
<td>relative frequency</td>
<td>standardization</td>
</tr>
<tr>
<td>frequency</td>
<td>normal</td>
<td>frequency</td>
<td>relative frequency distribution</td>
<td>population standard deviation</td>
</tr>
</tbody>
</table>