



# Chapter 11

## Quantitative Practice Section

## INSTRUCTIONS

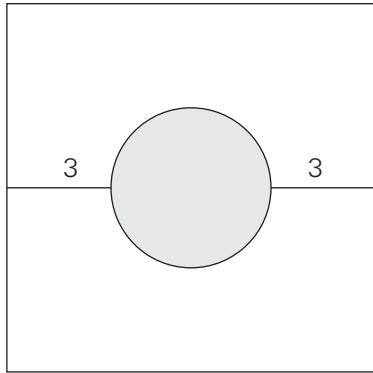
This practice section contains 37 questions covering a range of math topics similar to those you will see on the real GMAT. It recreates (as much as is possible on paper) the experience you will have in taking the Quantitative section of the GMAT. Set a timer for 75 minutes and try to answer every question in that amount of time. The answers can be found in Chapter 12.

A few reminders:

- Start slowly; then gradually pick up speed to finish the section.
- Do the questions in order. You must choose an answer before you move on to the next question, and you cannot go back to a previous question.
- Set up your scratch paper and use it to do all of your work.
- *Important:* Answer every question, so you may have to guess on some of the tougher questions.
- Use the methods and concepts you have learned, especially elimination methods and the various versions of Plugging In.
- *Remember:* In the data sufficiency questions that you've worked on throughout this book, we removed the five answer choices since those are always the same. Here in the practice section, we've added them back in, since you will see them on the real GMAT.

The section is designed to simulate the performance of someone who gets about 75% of the questions right and receives a score of about 40 (on the 0–60 scale).

Good luck!



1. In the figure above, a circular hole is cut in the center of a square sheet of metal. If the area of the sheet was 100 square centimeters before the hole was cut, what is the approximate area of the remainder of the sheet, in square centimeters, after the hole is cut?

- 12.57
- 49.73
- 50.27
- 71.73
- 87.43

2. If  $a > b$ , how much greater than  $b$  is  $a$ ?

- (1)  $b$  is one-fourth the value of  $a$ .
- (2) The sum of  $a$  and  $b$  is 100.

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3. If  $\frac{z^2 + 6z + 9}{z^2 - 9} = 2$ , what is the value of  $z$ ?

- 9
- 6
- 3
- 3
- 9

4. What is the value of  $j$ ?

- (1) The product of 2 and  $j$  is between 10 and 32, exclusive.
- (2) When  $j$  is divided by 2, the result is between 4 and 10, inclusive.

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5. The monthly fee for a certain cellular telephone plan is \$0.25 per minute for the first 200 minutes of calling time, plus \$0.50 for each minute above 200 minutes. Was the fee for June less than \$60 ?
- (1) Calling time for June was 180 minutes.  
 (2) For 460 minutes of calling time, the fee would be four times as great as that for June.
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6. Of the pages produced by a printing press, 15% are unusable. How many pages must be produced per minute by the printing press to yield 1,020 usable pages in an hour?
- 17
- 20
- 23
- 24
- 25.5
7. In the equation  $2x - cy = 18$ ,  $c$  is a constant. If the value of  $y$  is 2 when  $x$  is 6, what is the value of  $x$  when  $y$  is 3 ?
- $-\frac{9}{2}$
- 4
- 3
- 4
- $\frac{9}{2}$
8. If  $p$  is a price in whole cents, which of the following could NOT be the result of increasing  $p$  by 20%?
- \$1.20
- \$1.25
- \$1.38
- \$1.80
- \$2.52
9. If the total price for  $n$  copies of a book is \$31.50, what is the price per copy of the book?
- (1) If twice as many copies were bought for the same total price, the price per copy would be \$1.75.
- (2) If 4 fewer copies were bought for the same total price, the price per copy would be \$2.80 greater.
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10. Torry has submitted  $\frac{2}{5}$  of his homework assignments, and he received an average grade of 75 for those assignments. If he wishes to receive an average grade of 90 for all of his homework assignments, the average grade for Torry's remaining homework assignments must be what percent greater than the average grade for the assignments he has already submitted?

- 15%
- 20%
- 25%
- $33\frac{1}{3}\%$
- 40%

11. For all numbers  $m$  and  $n$ ,  $m @ n = (2m - n)(m + n)$ . If  $m = 3$  and  $n = 4$ , then  $n @ m =$

- 35
- 14
- 7
- 7
- 14

12. A certain school teaches fourth, fifth, and sixth grades only, with 150 students in each grade. During one day of a blizzard, 10% of the fourth-grade students,  $\frac{1}{6}$  of the fifth-grade students, and 60 of the sixth-grade students do not attend school. The student attendance on that day is approximately what percent less than full attendance?

- 11%
- 16%
- 22%
- 31%
- 33%

13. Before adding to her collection, Laura had 207 antique figurines stored in 9 boxes. After adding to her collection, she had 386 figurines in 12 boxes. What was the approximate percent increase in the average number of figurines per box?

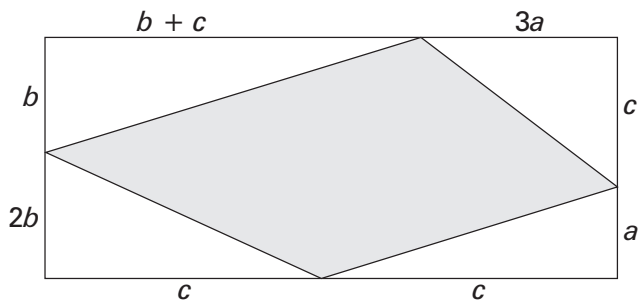
- 9%
- 33%
- 40%
- 50%
- 86%

14. The product of the sum of 3 consecutive prime numbers and the greatest integer less than the least of the prime numbers is 30. What is the largest of the 3 prime numbers?

- 2
- 3
- 5
- 7
- 11

15. A rectangular box, with dimensions of 12 inches by 18 inches by 10 inches, contains soup cans. If each can is a cylinder with a radius of 3 inches and a height of 5 inches, what is the maximum number of soup cans that the box can contain?

- 6
- 12
- 15
- 30
- 48



Note: Figure not drawn to scale.

16. In the rectangle shown above,  $10a = 5b = 2c$ . The shaded region covers what fraction of the area of the rectangle?

- $\frac{3}{5}$
- $\frac{11}{20}$
- $\frac{1}{2}$
- $\frac{9}{20}$
- $\frac{2}{5}$

17. A jar contains only green pencils and red pencils. If the jar contains a total of 225 pencils, what percentage of the pencils are green?

- (1) The jar contains 75 red pencils.
- (2) The jar contains twice as many green pencils as red pencils.

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18. If  $x$  and  $y$  are integers such that  $x^2 = y$  and  $xy = 125$ , then  $x - y =$

- 30
- 20
- 5
- 5
- 20

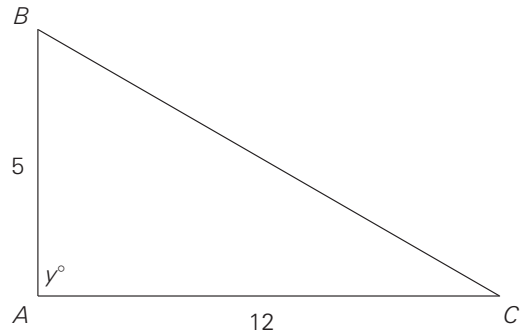
19. A circular hoop with a radius of 12.5 inches is rolled in a straight line on a flat surface. If each revolution of the hoop requires 10 seconds to complete, approximately how many minutes are necessary to roll the hoop 75 feet across the surface?

- 1
- 2
- 3
- 4
- 5

20. In the most recent mayoral election for City Y, 63% of all votes were cast for the winning candidate. How many votes were cast for the winning candidate?

- (1) 500,000 people were eligible to vote in the election.
- (2) 55,500 votes were cast for candidates other than the winning candidate.

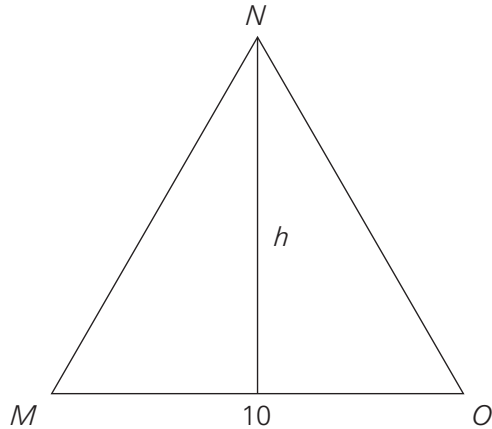
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21. In the figure above, what is the area of triangle  $ABC$ ?

- (1) The length of  $BC$  is 13.
- (2)  $y = 90$

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22. In the figure above, if the length of  $MO$  is 10, is  $MNO$  an equilateral triangle?

(1) The length of  $MN$  is 10.

(2)  $h = 5\sqrt{3}$

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23. In each of five taste tests, each of 51 participants chose either Brand X or Brand Y. The brand chosen by the majority of participants in a taste test was the winner of that taste test, and the brand that won the majority of the taste tests was deemed the better brand. Which of the brands was deemed the better brand?

- (1) Brand X was chosen by a total of 155 participants.
- (2) One brand won three of the first four taste tests.

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24. How many prime numbers are less than integer  $k$ ?

(1)  $18 < k < 27$

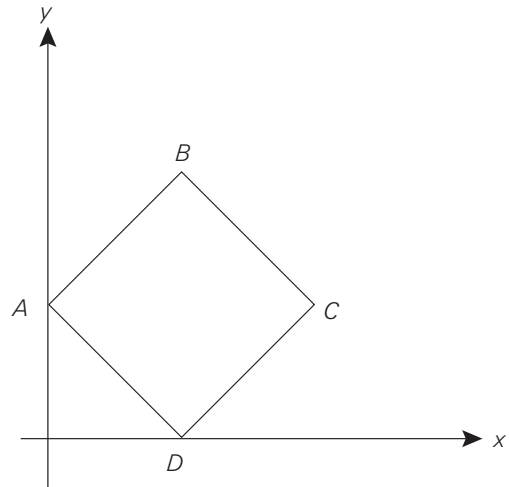
(2)  $23 < k < 30$

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25. How many baseball cards do Keith, Pat, and Steve own in total?

- (1) Keith and Pat together own half as many baseball cards as Steve does.
- (2) Keith and Steve together own 109 baseball cards, and Pat and Steve together own 126 baseball cards.

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26. What is the area of square  $ABCD$ , as shown in the coordinate plane above?

- (1) Point  $A$  has coordinates  $(0,4)$ .
- (2) Points  $B$  and  $D$  have coordinates  $(4,8)$  and  $(4,0)$ , respectively.

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27. If  $x$ ,  $y$ , and  $z$  are distinct integers, which integer is the median of the set  $\{x, y, z\}$ ?

- (1)  $x + y < z$
- (2)  $x > y$

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28. If both  $m$  and  $n$  are negative integers, which of the following must be positive?

- $\frac{m}{n} - 1$
- $m(n + 1)$
- $mn - 5$
- $m^2 + n^2 - 1$
- $mn + 3n$

29. Two bottles are partially filled with water. The larger bottle currently holds  $\frac{1}{3}$  of its capacity. The smaller bottle, which has  $\frac{2}{3}$  of the capacity of the larger bottle, currently holds  $\frac{3}{4}$  of its capacity. If the contents of the smaller bottle are poured into the larger bottle, the larger bottle will be filled to what fraction of its capacity?

- $\frac{5}{6}$
- $\frac{3}{4}$
- $\frac{2}{3}$
- $\frac{7}{12}$
- $\frac{1}{2}$

30. In a certain office, the ratio of men to women is  $\frac{3}{4}$ . If 10 men were added to the office, the ratio of men to women would be  $\frac{7}{6}$ . How many men and women total are currently in the office?

- 18
- 24
- 28
- 42
- 52

31. If the radius of a cylinder is half the length of the edge of a cube, and the height of the cylinder is equal to the length of the edge of the cube, what is the ratio of the volume of the cube to the volume of the cylinder?

$\frac{2}{\pi}$

$\frac{\pi}{4}$

$\frac{4}{\pi}$

$\frac{\pi}{2}$

4

32. If  $x$  and  $y$  are distinct prime numbers, which of the following could be true?

$\frac{x^y}{y}$  is an odd integer.

$x^2y^3 = x^2$

$\frac{y^x}{4}$  is an even integer.

$\frac{xy}{2}$  is an even integer.

$x^y = y^x$

33. Three men and 2 women will present 5 consecutive speeches, 1 by each person, at a conference. If the order of the speakers is determined randomly, what is the probability that at least 2 of the men's speeches will be consecutive?

$\frac{3,124}{3,125}$

$\frac{9}{10}$

$\frac{4}{5}$

$\frac{16}{25}$

$\frac{1}{2}$

34. Three children, John, Paul, and Ringo, are playing a game. Each child will choose either the number 1 or the number 2. When one child chooses a number different from those of the other two children, he is declared the winner. If all of the children choose the same number, the process repeats until one child is declared the winner. If Ringo always chooses 2 and the other children select numbers randomly, what is the probability that Ringo is declared the winner?

$\frac{1}{6}$

$\frac{1}{4}$

$\frac{1}{3}$

$\frac{1}{2}$

$\frac{2}{3}$

35. Is  $q$  an integer?

- (1)  $3q$  is an integer.  
(2)  $5q$  is an integer.

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36. Line  $k$  passes through the points  $(6,2)$  and  $P$  and has

a slope of  $-\frac{3}{5}$ . If the line that passes through the

origin and point  $P$  has a slope of  $-2$ , which of the

following are the  $xy$ -coordinates for point  $P$ ?

$\left(-\frac{40}{7}, \frac{80}{7}\right)$

$(-4,8)$

$(-3,6)$

$\left(\frac{11}{5}, -\frac{22}{5}\right)$

$\left(\frac{28}{13}, -\frac{56}{13}\right)$

37. Will must choose a 3-character computer password, consisting of 1 letter from the alphabet and 2 distinct digits, in any order. From how many different passwords can Will choose?

- 390
- 2,340
- 4,680
- 7,020
- 14,040