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## QUANTITATIVE SECTION

### Instructions\*

The Quantitative Section of the GMAT consists of 37 problems with a 75 minute time limit.

This section consists of two types of questions. Problem Solving and Data Sufficiency

### Problem Solving

**Directions:** Solve each of the following questions; then indicate the correct answer.

NOTE: A figure that appears with a problem is drawn as accurately as possible so as to provide information that may help in answering the questions.

Numbers in this test are real numbers.

### Data Sufficiency

**Directions:** Each of the following problems has a question and two statements which are labeled (1) and (2). Use the data given in (1) and (2) together with other available information to decide whether the statements are sufficient to answer the question. Then fill in space

- (A) If you can get the answer from (1) **ALONE** but not from (2) alone.
- (B) If you can get the answer from (2) **ALONE** but not from (1) alone.
- (C) If you can get the answer from **BOTH** (1) and (2) **TOGETHER** but not from (1) alone or (2) alone.
- (D) If **EITHER** statement (1) **ALONE OR** statement (2) **ALONE** suffices.
- (E) If you **CANNOT** get the answer from statements (1) and (2) **TOGETHER** but need even more data.

All numbers used in this section are real numbers.

A figure given for a problem is intended to provide information consistent with that in the question, but not necessarily with the additional information contained in the statements.

All figures lie in the plane unless you are told otherwise.

Figures are drawn as accurately as possible; straight lines may not appear straight on the screen.

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\* These instructions were taken from the GMAT exam.

**Problem Solving**

1. A salesman's income consists of commission and base salary. His weekly income totals over the past 5 weeks have been \$360, \$390, \$430, \$415 and \$540. What must his average income over the next two weeks be to increase his average weekly income to \$460 over the 7-week period?

- A. \$570
- B. \$587.50
- C. \$557.50
- D. \$586
- E. \$615

2. A fish tank is one-fourth full of water. If six gallons of water were added, the tank would be three-fourths full. What is the capacity of the tank (in gallons)?

- A. 10
- B. 14
- C. 18
- D. 12
- E. 8

3. John gave his son Mike  $5z$  number of coins in addition to what he already has. Mike then has  $(y + 10)$  times as many coins as he had originally. In terms of  $y$  and  $z$ , how many coins did Mike have originally?

- A.  $5z(y + 10)$
- B.  $\frac{(y + 10)}{5z}$
- C.  $5z(y + 9)$
- D.  $\frac{5z}{(y + 9)}$
- E.  $\frac{(y + 9)}{5z}$

4. The value of a cellular phone declines by 33 percent of its current value every year. At this rate, approximately how many years will it take for the price of a \$243 cell phone to reach \$72?

- A. 2.5
- B. 2
- C. 3
- D. 13
- E. 13.5

5. A worker is paid  $x$  dollars an hour for the first 8 hours he works in a day. For every hour after the first 8 hours, he is paid  $y$  dollars an hour. If he works 16 hours in one day, what is his average hourly wage for that day?

- A.  $\frac{(x+2y)}{2}$
- B.  $8x+8y$
- C.  $\frac{(x+2y)}{3}$
- D.  $\frac{(x+y)}{3}$
- E.  $\frac{x+y}{2}$

6. If a certain factory produces 24 Pepsi bottles of one liter capacity each in 12 minutes, approximately how many Pepsi bottles does it produce in one hour?

- A. 110
- B. 120
- C. 124
- D. 140
- E. 100

7. The deadline for an assignment was Sunday, January 27. The deadline was then extended for 15 days. What day of the week is new deadline?

- A. Monday
- B. Tuesday
- C. Wednesday
- D. Thursday
- E. Friday

8. A rectangular tiled floor is composed of 70 square tiles. The rectangular floor is rearranged so that 2 tiles are removed from each column and 4 tiles are added to each row. After the change in layout, the floor will still have 70 tiles, and still be rectangular. How many columns are in the tile floor before the change in layout?

- A. 4
- B. 6
- C. 10
- D. 14
- E. 28

9. City  $B$  is 4 miles due east of city  $A$ . City  $C$  is 3 miles due south of city  $B$ . City  $D$  is 4 miles due east of city  $C$ , and city  $E$  is 9 miles due north of city  $D$ . What is the distance between city  $A$  and city  $E$ ?

- A. 10 miles
- B. 20 miles
- C. 24 miles
- D. 30 miles
- E. 42 miles

10. Of the 150 players in a baseball league, 90 are left-handed. Which of the following is the percentage of players that are not left-handed?

- A. 38%
- B. 44%
- C. 42%
- D. 40%
- E. 56%

12. When the integer  $n$  is divided by 6, the remainder is 3. Which of the following is NOT an odd number?

- A.  $n + 4$
- B.  $\frac{n}{2} + 2.5$
- C.  $n - 2$
- D.  $3n + 2$
- E.  $5n + 3$

13. An Olympic diver received the following scores: 6.0, 7.0, 7.5, 6.5 and 8.0. The standard deviation of these scores is in which of the following ranges?

- A. 4 – 6.9
- B. 2 – 3.9
- C. 0 – 1.9
- D. 7 – 7.9
- E. 8 – 9.9

14. Jack and Kevin play in a basketball game. If the ratio of points scored by Jack to points scored by Kevin is 3 to 5, which of the following could NOT be the total number of points scored by the two boys?

- A. 8
- B. 17
- C. 16
- D. 24
- E. 40

15. Dean's Department Store reduces the price of a \$40 shirt by 15%, but later raises it again by 20% of the sale price. What is the final price of the shirt?

- A. \$44.40
- B. \$42
- C. \$40
- D. \$40.80
- E. \$40.60

16. Let  $x$ ,  $y$  and  $z$  be distinct integers.  $x$  and  $y$  are even and positive, and  $z$  is odd and positive. Which one of the following statements cannot be true?

- A.  $(x - z)^2 y$  is even
- B.  $(y - z)z$  is odd
- C.  $(x - z)y$  is even
- D.  $(x - y)^2 z$  is even
- E.  $(x - z)y^2$  is odd

17. The average weekly salary of 12 workers and 3 managers in a factory was \$600. A manager whose salary was \$720 was replaced with a new manager, then the average salary of the team fell to \$580. What is the salary of the new manager?

- A. \$570
- B. \$690
- C. \$640
- D. \$420
- E. \$560

18. Tom takes exactly 30 minutes to rake a lawn and his son Mike takes exactly 60 minutes to rake the same lawn. If Tom and Mike decide to rake the lawn together, and both work at the same rate that they did previously, how many minutes will it take them rake the lawn?

- A. 16
- B. 20
- C. 36
- D. 45
- E. 90

19. If  $(x + 2)^2 = 9$  and  $(y + 3)^2 = 25$ , then the maximum value of  $\frac{x}{y}$  is

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

20. When two dice are thrown simultaneously, what is the probability that the sum of the two numbers that turn up is less than 11?

- A.  $\frac{5}{6}$
- B.  $\frac{1}{6}$
- C.  $\frac{11}{12}$
- D.  $\frac{1}{12}$
- E.  $\frac{8}{12}$

**Data Sufficiency**

21. What is the distance between two cities  $X$  and  $Y$ ? City  $Z$  is 60 miles due south of city  $X$ .

- (1) The distance between cities  $Y$  and  $Z$  is 80 miles.
  - (2) City  $Z$  is due west of city  $Y$ .
- 

22. What is the value of  $A$ ?

- (1)  $AB = 12$
  - (2)  $A = \frac{36}{3B}$
- 

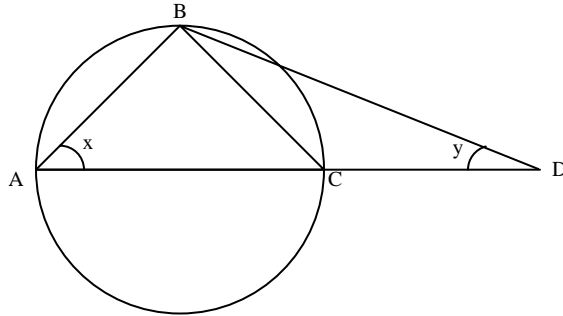
23. A fish tank has two holes  $A$  and  $B$ . How long will it take for the two holes  $A$  and  $B$  to empty the tank if they each worked alternately for an hour at a time, starting with hole  $B$ ?

- (1) Working alone, hole  $A$  can empty the tank in 5 hours.
  - (2) Hole  $B$  takes twice the time as that of hole  $A$ .
- 

24. If  $n$  is a positive integer, is  $x + 5$  even?

- (1)  $x = n + 1$
  - (2)  $n = 13$
-

25.  $AC$  is a diameter of the circle.  $ACD$  is a straight line. What is the value of  $x$ ?



- (1)  $AB = BC$
- (2)  $x = 2y$

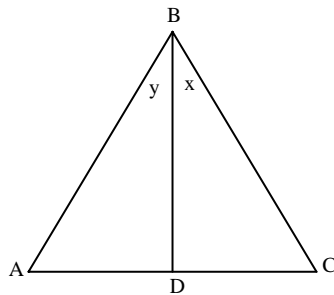
26. Is  $x = y$ ?

- (1)  $(x - 50)^2 = (y - 50)^2$
- (2)  $(x + y) \left( \frac{1}{x} + \frac{1}{y} \right) = 4$

27. What is the value of  $X$ , if  $X$  and  $Y$  are two distinct integers and their product is 30?

- (1)  $X$  is an odd integer
- (2)  $X > Y$

28. Does  $x = y$ ?



- (1)  $BD$  is perpendicular to  $AC$
- (2)  $AB$  is equal to  $BC$

29. Is the integer  $a$  less than the integer  $b$ ?

- (1)  $a^3 < b^3$
- (2)  $a^2 < b^2$

30. Is the perimeter of a given rectangle greater than 10 inches?

- (1) The length of the rectangle is 2 inches greater than the width.
- (2) The two shorter sides of the rectangle are 2.5 inches long.

31. What is the value of the integer  $P$ ?

- (1)  $P$  is an integer multiple of 2, 4 and 5.
- (2)  $P < 60$

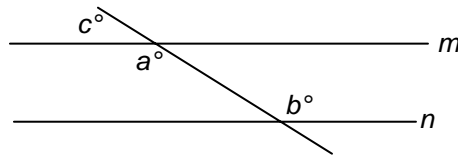
32. What is the average test score of Angela, Barry, Carl, Dennis, and Edward?

- (1) The average of the test scores of Barry, Carl, and Edward is 87.
- (2) The average of the test scores of Angela and Dennis is 84.

33. Is the smallest of five consecutive integers even?

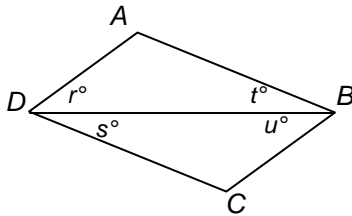
- (1) The product of the five integers is 0
- (2) The arithmetic mean of the five integers is 0.

34. Does  $a = b$ ?



- (1) Lines  $m$  and  $n$  are parallel
- (2)  $c = 50^\circ$

35. Does  $r = s$ ?



- (1)  $t = u$
- (2)  $ABCD$  is a parallelogram.

36. What is the value of  $y$ ?

- (1)  $x - 2y = 4$
- (2)  $y^2 - 4y + 4 = 0$

37. In the  $xy$ -plane, line  $L$  and line  $M$  intersect at the point  $\left(\frac{16}{5}, \frac{12}{5}\right)$ . What is the slope of line  $L$ ?

- (1) The product of slopes of line  $L$  and line  $M$  is -1.
- (2) Line  $M$  passes through the origin.



## GMAT Quantitative Handout



### Answers

- |       |       |
|-------|-------|
| 1. B  | 21. C |
| 2. D  | 22. E |
| 3. D  | 23. C |
| 4. C  | 24. C |
| 5. E  | 25. A |
| 6. B  | 26. B |
| 7. A  | 27. C |
| 8. C  | 28. C |
| 9. A  | 29. A |
| 10. D | 30. B |
| 11. A | 31. E |
| 12. E | 32. C |
| 13. C | 33. B |
| 14. B | 34. A |
| 15. D | 35. C |
| 16. E | 36. B |
| 17. D | 37. C |
| 18. B |       |
| 19. E |       |
| 20. C |       |