

Time: 2 Hour

Total Marks: 45

**Class : IX**

**Subject : Mathematics**

**MCQ SINGLE CORRECT**

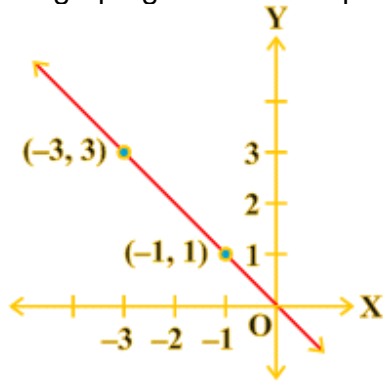
- Which of the points P(0, 3), Q (1, 0), R(0, -1), S (-5, 0),T(1, 2) do not lie on the x -axis?  
(a) P and R only (b) Q and S only  
(c) P, R and T (d) Q, S and T
- Which of the following is irrational?  
(a) 0.14 (b)  $0.14\overline{16}$   
(c)  $0.\overline{1416}$  (d) 0.4014001400014. . .
- $\sqrt{10} \times \sqrt{15}$  is equal to  
(a)  $6\sqrt{5}$  (b)  $5\sqrt{6}$   
(c)  $\sqrt{25}$  (d)  $10\sqrt{5}$
- The product  $\sqrt[3]{2} \cdot \sqrt[4]{2} \cdot \sqrt[12]{32}$  equals  
(a)  $\sqrt{2}$  (b) 2  
(c)  $\sqrt[12]{2}$  (d)  $\sqrt[12]{32}$
- $\sqrt{2}$  is a polynomial of degree  
(a) 2 (b) 0  
(c) 1 (d)  $\frac{1}{2}$

**TRUE/FALSE**

- If two lines intersect and if one pair of vertically opposite angles is formed by acute angles, then the other pair of vertically opposite angles will be formed by obtuse angle.  
(a) True (b) False

All The Best!!!

7. The graph given below represents the linear equation  $x + y = 0$ .



(a) True (b) False

8. The longest chord of a circle is a diameter of the circle.

(a) True (b) False

9. Every irrational number is a real number.

(a) True (b) false

10. If a circle is divided into three equal arcs each is a major arc.

(a) True (b) False

### FILL IN THE BLANKS

11. Two distinct points in a plane determine a \_\_\_\_\_ line.
12. If the sum of two adjacent angles is  $180^\circ$ , then the \_\_\_\_\_ arms of the two angles are opposite rays.
13. The triangle formed by joining the mid-point of the sides of an isosceles triangle is \_\_\_\_\_
14. If a line is divided by three parallel lines into two segments of lengths in the ratio 1 : 3 another line will be divided by these parallel lines into two-segments of lengths in the ratio \_\_\_\_\_
15. The figure formed by joining the mid-points of the consecutive sides of a quadrilateral is \_\_\_\_\_

### VERY SHORT DESC

16. Simplify :

$$\left(\frac{1}{3^3}\right)^7$$

17. Find :

$$64^{1/2}$$

18. Prove that two different circles cannot intersect each other at more than two points.

19. Prove that  $\sqrt{5} - 2$  is irrational.

20. Find the surface area of a sphere of diameter 14 cm.

**SHORT DESC - 25 WORDS**

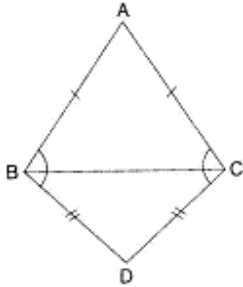
21. Rationalize the denominator of the following :

$$\frac{1}{\sqrt{7}}$$

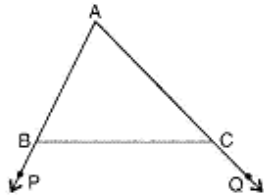
22. Express the following number in decimal form:

$$\frac{3}{40}$$

23. ABC and DBC are two isosceles triangles on the same base BC. Show that  $\square ABD = \square ACD$ .



24. In figure, sides AB and AC of  $\triangle ABC$  are extended to points P and Q respectively. Also  $\square PBC < \square QCB$ . Show that  $AC > AB$ .



25. Plot the following pairs of numbers as points in the Cartesian plane. Use the scale 1 cm = 1 unit on the axes.

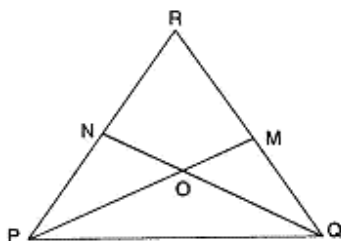
x	-3	0	-1	4	2
y	7	-3.5	-3	4	-3

**MED DESC - 50 WORDS**

26. Find six rational numbers between 3 and 4.

27. If two isosceles triangles have a common base, the line joining their vertices bisects the common base at right angles, Prove.

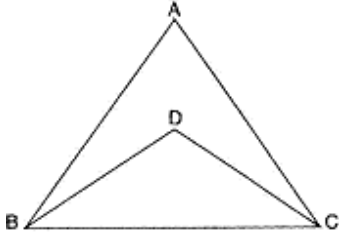
28. In figure,  $\square QPR = \square PQR$  and M and N are respectively points on sides QR and PR of  $\triangle PQR$ , such that  $QM = PN$ . Prove that  $OP = OQ$ , where O is the point of intersection of PM and QN.



29. Classify the following number as rational or irrational.

$$\sqrt{23}$$

30. In figure, ABC and DBC are two triangles on the same base BC such that  $AB = AC$  and  $DB = DC$ . Prove that  $\angle ABD = \angle ACD$ .



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