

SEVEN STAR BANI

M. M. - 40. Time- 1.5 hours Class - 9th Monday Test (Mathematics)

Qno.1- Very short answer type questions (1 mark each)

1. Point (0, -7) lies

- a. On the x axis b. In the second quadrant
☒ c. On the y axis. d. In the fourth quadrant

2. The distance between the point A (0,6) and B (0,-2) is :

- a. 6 units. ☒ b. 8 units c. 4 units. d. 2 units

3. The distance between the points (4,p) and (1,0) is 5 units , then the value of p is -

- a. 4 only b. 0 c. -4 only ☒ d. Both -4 and +4

4. The abscissa of any point on the y axis is 0

5. The perimeter of triangle with vertices (0,4) (0,0) and (3,0) is 4+3+5 = 12

6. The decimal expansion of the number $\sqrt{2}$ is

- a. A finite decimal b. Non terminating recurring
☒ c. Non terminating non recurring. d. 1.41421

7. Find an irrational number between $\frac{3}{5}$ and $\frac{2}{3}$. 0.6 and 0.666...

8. Choose the wrong statement -

- a. Every natural number is a whole number.
b. Every integer is a rational number.
c. Every rational number is an integer. ☒
d. Every rational number is a real number.

9. In the linear equation $y = mx + c$, if $m < 0$, the line represents-

- a. Linear growth b. Constant value ☒ c. Linear decay d. Vertical line

10. The polynomial in one variable of degree 4 has at most - $ax^4 + bx^3 + cx^2 + dx + e$

- a. 3 terms ☒ b. 5 terms c. 4 terms d. 6 terms

11. $\sqrt{5}$ is a polynomial of degree -

- a. 2 b. 1 ☒ c. 0 d. $\frac{1}{2}$

Max. Marks →

of a point is positive in -

- a. 2nd quadrants
b. 1st quadrant only
c. 2nd quadrant only
d. 4th quadrant

o.4 - Case

A solution of the equation $2x + 5y - 3 = 0$ is -

- a. (5, -2)
b. (-1, 1)
c. (-5, 2)
d. (1, -1)

14. Slope of the line $y = -\frac{1}{2}x + 2$ is 2. (T/F) $m = -\frac{1}{2}$ False

15. The decimal expansion of every irrational number is always terminating repeating. (T/F) False

Qno.2- Short answer type questions (2 marks each)

a. Express $0.\overline{134}$ (bar on 34) in the form of p/q where p and q are integers. $= \frac{133}{990}$

b. By using distance formula, show that the points (4, 2), (7, 5) and (9, 7) are collinear. Yes

c. Find two solutions for the given question

$4x + 3y = 12$. (0, 4), (3, 0)

d. Locate $\sqrt{13}$ on the number line. $\sqrt{13} = \sqrt{(3)^2 + (2)^2}$

e. Prove that $\sqrt{2}$ is an irrational number.

Qno. 3- Long answer type questions (3 marks each)

a. If $x = -1$ and $y = 3$ is a solution of the equation $4x + 2y - k = 0$, then find the value of k. $k = 2$

b. Prove that

$$3 + \sqrt{8} - (\sqrt{8} + \sqrt{7}) + (\sqrt{7} + \sqrt{6}) - (\sqrt{6} + \sqrt{5}) + \sqrt{5} + 2$$

$$\frac{1}{3 - \sqrt{8}} - \frac{1}{\sqrt{8} - \sqrt{7}} + \frac{1}{\sqrt{7} - \sqrt{6}} - \frac{1}{\sqrt{6} - \sqrt{5}} + \frac{1}{\sqrt{5} - 2} = 5.$$

$$3 + \sqrt{8} - \sqrt{8} - \sqrt{7} + \sqrt{7} + \sqrt{6} - \sqrt{6} - \sqrt{5} + \sqrt{5} + 2 = 5 \text{ R.H.S.}$$

c. Show that the points A (3, 0), B (4, 5), C (-1, 4) and D (-2, -1) taken in order are the vertices of a rhombus. Also find the area of the rhombus. $AC = \sqrt{32} = 4\sqrt{2}$, $BD = \sqrt{72} = 6\sqrt{2} = \frac{1}{2} \times d_1 \times d_2 = 24$

d. A taxi services charges a fixed fare of Rs. 50 plus Rs. 20 for every kilometre travelled. Write a linear equation representing the total fare (y) for x kilometres. Also calculate the fare for 10 km. Identify the rate of change and the initial value.

$$y = 50 + 20x$$

$$x = 10$$

$$y = 50 + 20 \times 10$$

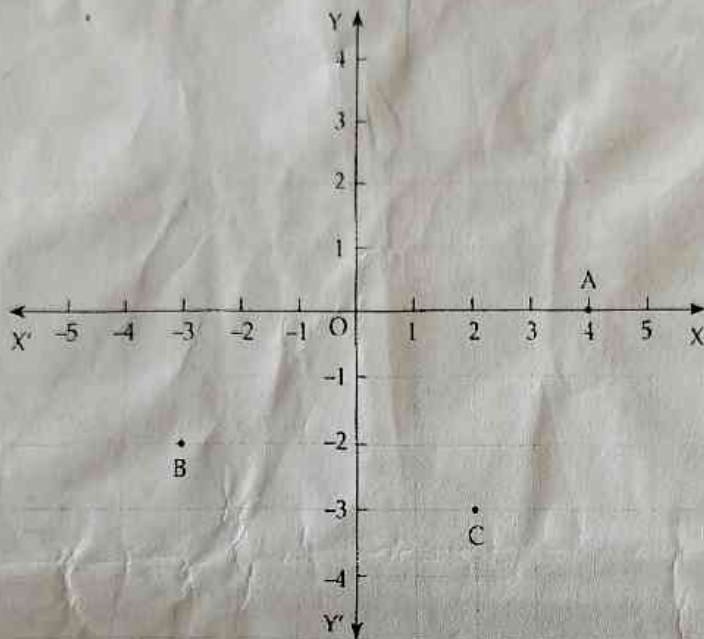
$$y = 250$$

no.4 - Case based question ($1 \times 3 = 3$)

Students of class IX are on visit to Sansad Bhavan. It was an educational excursion. All the subject teachers assigned different activities to the students related to their subjects. Mathematics teacher asked the students to observe the positions of some of the members of the Parliament.

The chairs in the Parliament are arranged in rows and columns.

Teacher fixed a point in between the house and asked the students to consider it as origin.



Based on the given situation, answer the following questions:

Prime Minister's seat is fixed at a position such that its row number is 4th to the top of origin and column number is 5th to the left of origin.

- (i) The position of the Prime Minister is in which quadrant? $(-5, 4)$ 2nd quadrant
(ii) Write the coordinates of the position of Prime Minister's seat. $(-5, 4)$
(iii) If the leader of opposition is sitting at the point A in the above figure, then what is the ordinate of point A? $(4, 0)$ ordinate is 0

OR

- (iii) If the finance minister's seat is fixed at point B, then find the distance of point B from x-axis.

$B(-3, -2)$

2 units

means ordinate