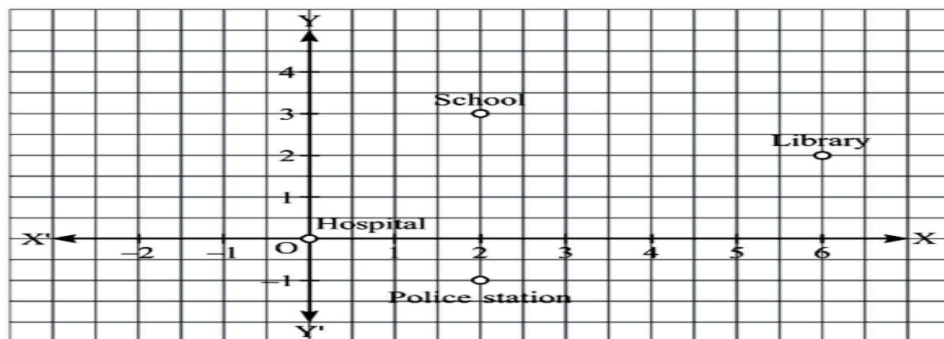


CLASS-X (MATHS)

Ramesh is a Class X student residing in a village. One day, he went to a city Hospital along with his grandfather for general checkup. From there he visited three places School, Library and Police Station. After returning to his village, he plotted a graph by taking Hospital as origin and marked three places on the graph as per his direction of movement and distance. The graph is shown below:



(1) What are the coordinates of School?

- (A) (3, 2)
- (B) (2, 3)
- (C) (3, 5)
- (D) (5, 3)

Sol. (B) (2, 3)

IT IS ON DISTANCE OF 2-UNITS FROM Y-AXIS AND 3- UNITS FROM X-AXIS.

(2) What are the coordinates of Police Station?

- (A) (2, -1)
- (B) (2, 1)
- (C) (-2, -1)
- (D) (-2, 1)

ANS: (A) (2, -1)

It is on distance of 2-units from Y-axis and -1 units from X- axis

(3) Distance between school and police station:

- (A) 4
- (B) 3
- (C) 2
- (D) 1

ANS: (A) 4

BOTH SCHOOL AND POLICE STATION ARE ON STRAIGHT LINE AND ON DISTANCE OF 4 UNITS (3+1)

(4) What are the coordinates of Library?

- (A) (2, 6)
- (B) (2, -6)
- (C) (6, -2)
- (D) (6, 2)

Sol. (D) (6, 2)

IT IS ON DISTANCE OF 6-UNITS FROM Y-AXIS AND 2-UNITS FROM X-AXIS

(5) In which quadrant the point (-1, 4) lies?

- (A) I
- (B) II
- (C) III
- (D) IV

ANS: (B) II

TO REACH ON THIS POINT WE HAVE TO MOVE 1 UNIT ON -X AXIS AND 4-UNITS ON Y-AXIS.

Case Study : Rahul and Ranjan start a new business together. The amount invested by both partners together is given by the polynomial $p(x) = 4x^2 + 12x + 5$, which is the product of their individual shares.

(6). Coefficient of x^2 in the given polynomial is

- (A) 2
- (B) 3
- (C) 4
- (D) 12

ANS: (C) 4

Coefficient of x^2 is 4

7. Total amount invested by both, if $x = 100$ is

- (A) 41205
- (B) 37056
- (C) 401200
- (D) 49062

ANS: (A) 41205

$$P(100) = 4 \times 100 \times 100 + 12 \times 100 + 5 = \text{Rs. } 41205$$

8. The shares of Rahul and Ranjan invested individually are

- (A) $(2x + 1), (2x + 5)$
- (B) $(2x + 3), (x + 1)$
- (C) $(x + 1), (x + 3)$
- (D) None of these

ANS: (A) $(2x + 1), (2x + 5)$

$$p(x) = 4x^2 + 12x + 5$$

$$p(x) = 4x^2 + 10x + 2x + 5 = (2x + 1)(2x + 5)$$

What is the name given to the polynomial which represents the amount that each of them has invested?

- (A) Cubic
- (B) Quadratic

9. What is the name given to the polynomial which represents the amount that each of them has invested.

- (A) Cubic
- (B) Quadratic
- (C) Linear
- (D) None of these

ANS: (C) Linear

$2x + 1$ and $2x + 5$ are linear.

10. What is the degree of the polynomial $p(x) = 5x^2 + 12x + 7$

- (A) 4
- (B) 3
- (C) 2
- (D) 1

ANS: (C) 2

The degree of a polynomial is the highest power of the variable in a polynomial