

Very Short Answer Type Questions

[1 MARK]

Que 1. If y -coordinate of a point is zero, then where will this point lie in the coordinate plane?

Sol. On the x -axis.

Que 2. In which quadrant(s), the abscissa of a point is negative?

Sol. II and III quadrants.

Que 3. Where does the point $(-2, 4)$ lie in the coordinate plane?

Sol. II quadrant.

Que 4. In which quadrant does a point both of whose coordinates are positive lie?

Sol. I quadrant.

Que 5. Find the point whose ordinate is -3 and which lies on y -axis.

Sol. $(0, -3)$

Que 6. The point in which abscissa and ordinate have different signs will lie in which quadrant (s)?

Sol. II and IV quadrants.

Que 7. Find the perpendicular distance of the point P $(5, 7)$ from the y -axis.

Sol. 5.

Que 8. Find the point which lies on the line $y = -3x$ having abscissa 3.

Sol. When $x = 3$ then $y = -9$, thus the point is $(3, -9)$

Short Answer Type Questions – I

[2MARKS]

Que 1. Write the coordinates of a point on x -axis at a distance of 6 units from the origin in the positive direction of x -axis and then justify your answer.

Sol. As, any point on x -axis has coordinates $(x, 0)$ where x is the distance from origin,
so

required coordinates are $(6, 0)$.

Que 2. Which axis is parallel to the line on which the two points with coordinates $(4, 3)$ and $(4, -2)$ lie?

Sol. As x -coordinate of both points is 4.

So, both points lie on the line $x = 4$ which is parallel to y -axis.

Que 3. Two points with coordinates $(3, 4)$ and $(-5, 4)$ lie on a line parallel to which axis? Justify your answer.

Sol. y -coordinate of both the points is 4.

So, both points lie on the line $y = 4$ which is parallel to x -axis.

Que 4. If the coordinates of two points are $P(-2, 3)$ and $Q(-3, 5)$ then find (abscissa of P) – (abscissa of Q)

Sol. $\text{Abcissa of } P - \text{Abcissa of } Q = (-2) - (-3) = -2 + 3 = 1$.

Que 5. Without plotting the points indicate the quadrant in which they will lie, if:

(i) Ordinate is -3 and abscissa is -2

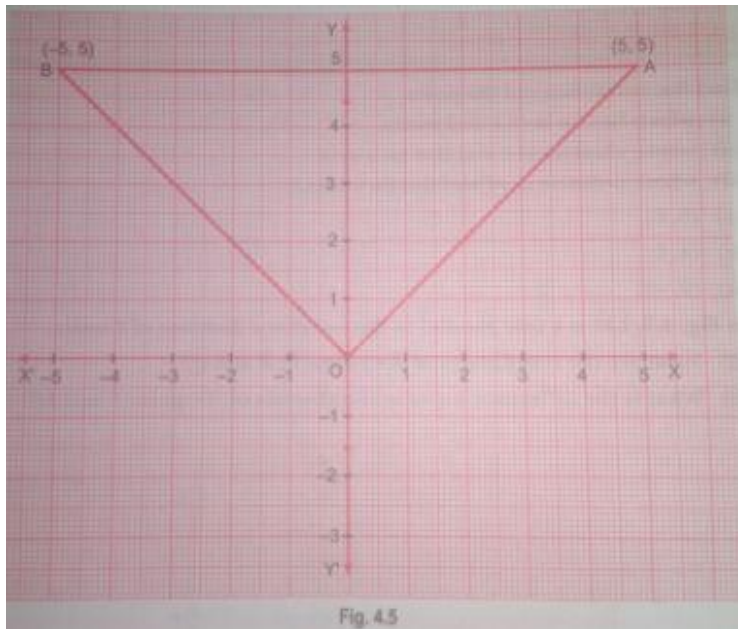
(ii) Abscissa is 5 and ordinate is -6

Sol. (i) III quadrant

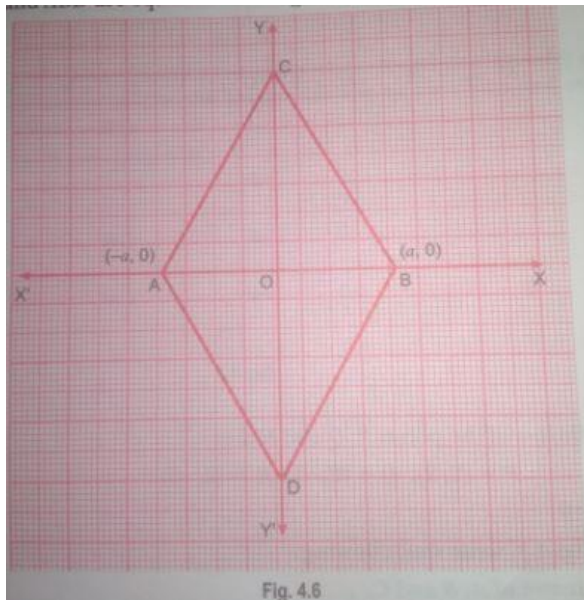
(ii) IV quadrant

Que 6. Plot the points $A(5, 5)$ and $B(-5, 5)$ in Cartesian plane. Join AB , OA and OB . Name the type of triangle so obtained.

Sol. The obtained triangle is an isosceles triangle.



Que 7. In Fig. 4.6, if ABC and ABD are equilateral triangles then find the coordinates of C and D .



Sol. Here, $AC = 2a$ and $AO = a$

$$OC^2 = AC^2 - AO^2 = 4a^2 - a^2 = 3a^2$$

$$OC = a\sqrt{3}$$

Therefore, coordinates of C are $(0, a\sqrt{3})$

Coordinates of D are $(0, -a\sqrt{3})$.

Short Answer Type Questions – II

[3 MARKS]

Que 1. Find the coordinates of the point.

- (i) which lies on both x and y -axis.
- (ii) whose abscissa is 4 and lies on x -axis.
- (iii) whose ordinate is -2 and lies on y -axis.

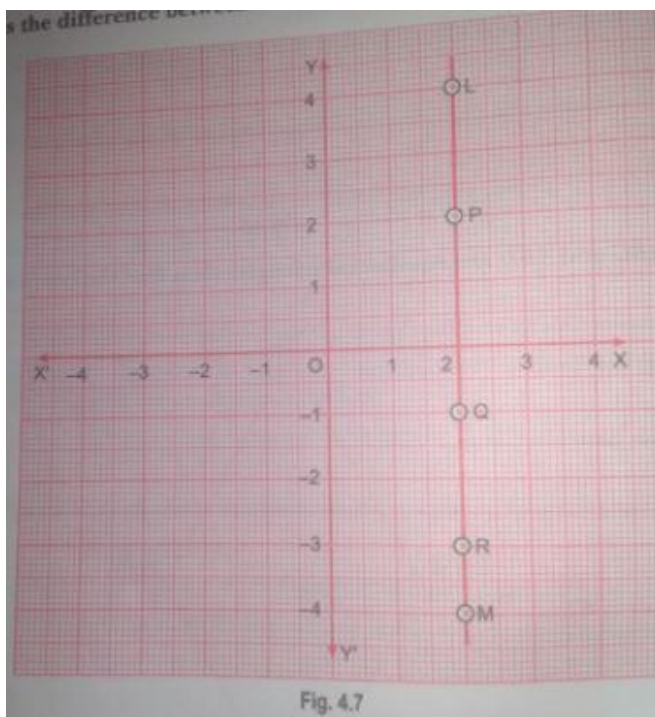
Sol. (i) $(0, 0)$

(ii) $(4, 0)$

(iii) $(0, -2)$

Que 2. In Fig. 4.7, LM is a line parallel to the y -axis at a distance of 2 units.

- (i) What are the coordinates of the points P, R and Q ?
- (ii) What is the difference between the abscissa of the point L and M ?



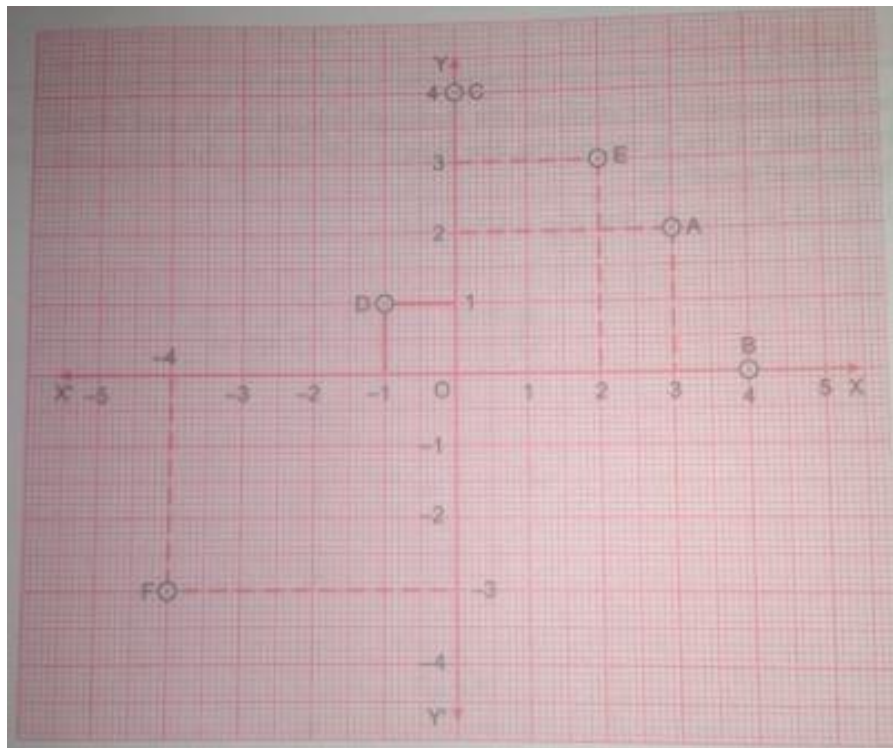
Sol. (i) Coordinates of the points P, Q and R are:

$$P = (2, 2), Q = (2, -1), R = (2, -3)$$

(ii) $2 - 2 = 0$

Que 3. From the Fig. 4.8, write the following:

- (i) Coordinates of A, B and C .**
- (ii) The point identified by the coordinates $(-1, 1)$.**
- (iii) The abscissa of the point E .**
- (iv) The ordinate of the point F .**



Sol. (i) $A = (3, 2), B = (4, 0), C = (0, 4)$

(ii) D (iii) 2 (iv) -3

Que 4. Write the coordinates of the vertices of a rectangle whose length and breadth are 7 and 4 units respectively, one vertex at the origin, the longer side lies on the x -axis and one of the vertices lies in the third quadrant.

Sol. $(0, 0), (-7, 0), (-7, -4), (0, -4)$ [Fig. 4.9].

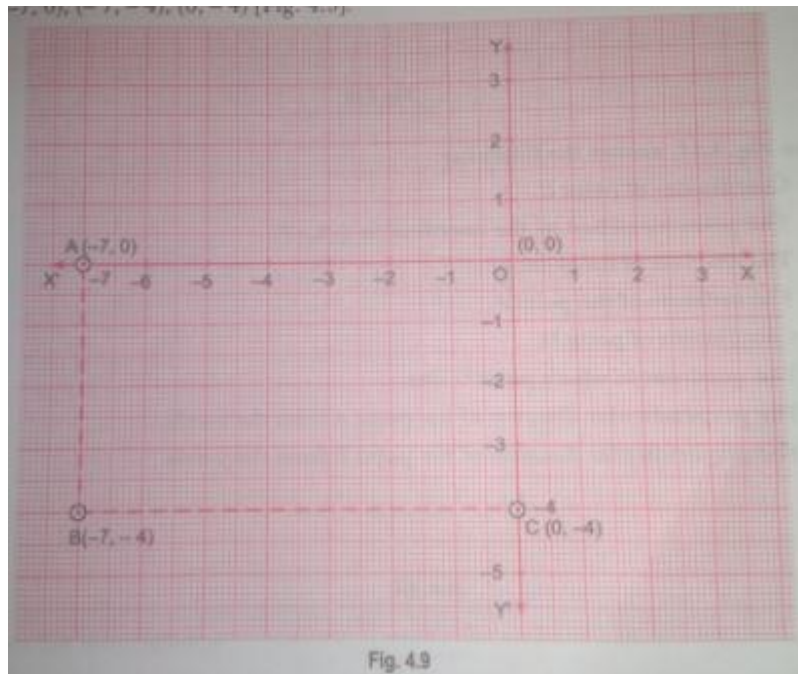


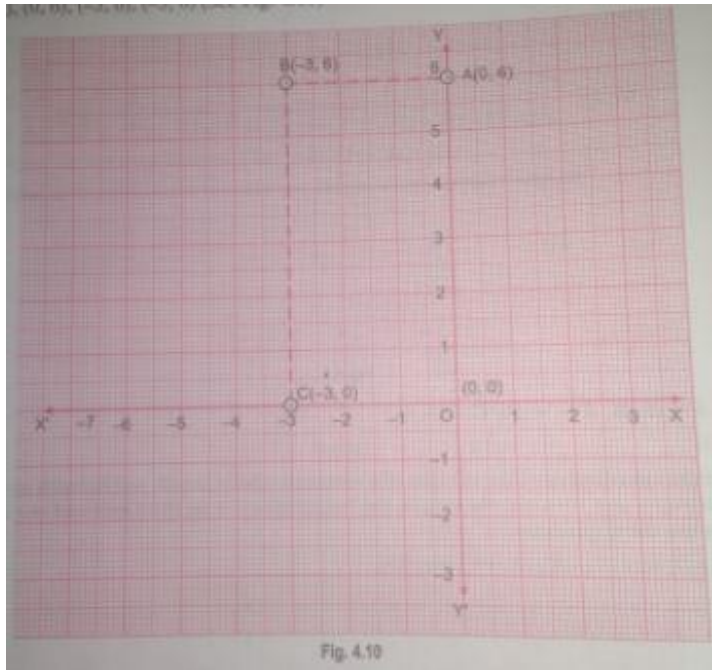
Fig. 4.9

Long Answer Type Questions

[4 MARKS]

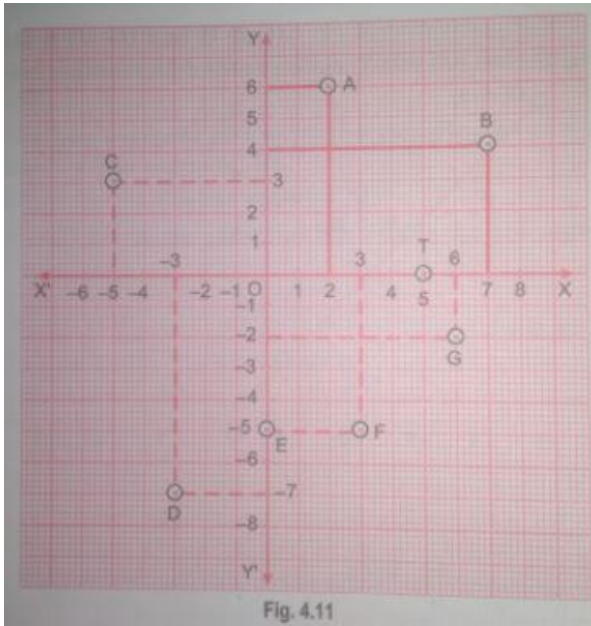
Que 1. Write the coordinates of the vertices of a rectangle whose length and breadth are 6 and 3 units respectively, one vertex at the origin, the longer side lies on the longer side lies on the y -axis and one of the vertices lies in the second quadrant.

Sol. $(0, 0), (0, 6), (-3, 6), (-3, 0)$ (See Fig. 4.10)



Que 2. From Fig. 4.11, answer the following:

- (i) Coordinates of point C.
- (ii) The point identified by the coordinates $(-3, -7)$.
- (iii) The abscissa of the point E.
- (iv) The ordinate of the point F.
- (v) Coordinates of point O.
- (vi) The quadrant in which point G lies.
- (vii) The perpendicular distance of the point A from the x -axis.
- (viii) The perpendicular distance of the point B from the y -axis.

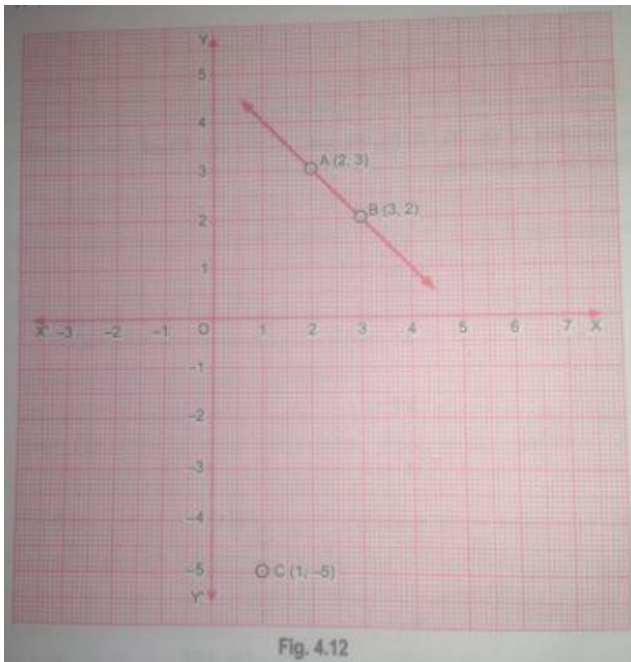


Sol. (i) $(-5, 3)$ (ii) D (iii) 0 (iv) -5
 (v) $(0, 0)$ (vi) Fourth (vii) 6 units (viii) 7 units

Que 3. Plot the following points and check whether they are collinear or not:

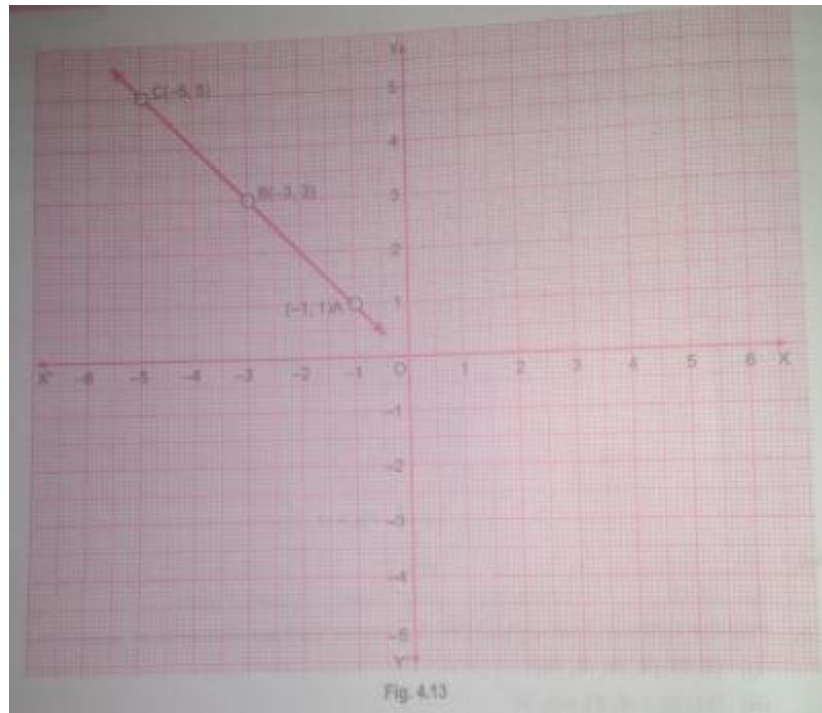
- (i) $(2, 3), (3, 2), (1, -5)$
 (ii) $(-1, 1), (-3, 3), (-5, 5)$

Sol. (i)



The points are non-collinear.

(ii)



Yes, the points are collinear.

HOTS (Higher Order Thinking Skills)

Que 1. Plot the points A (2, 0), B (5, 0) and C (5, 3). Find the coordinate of the point D such that ABCD is a square.

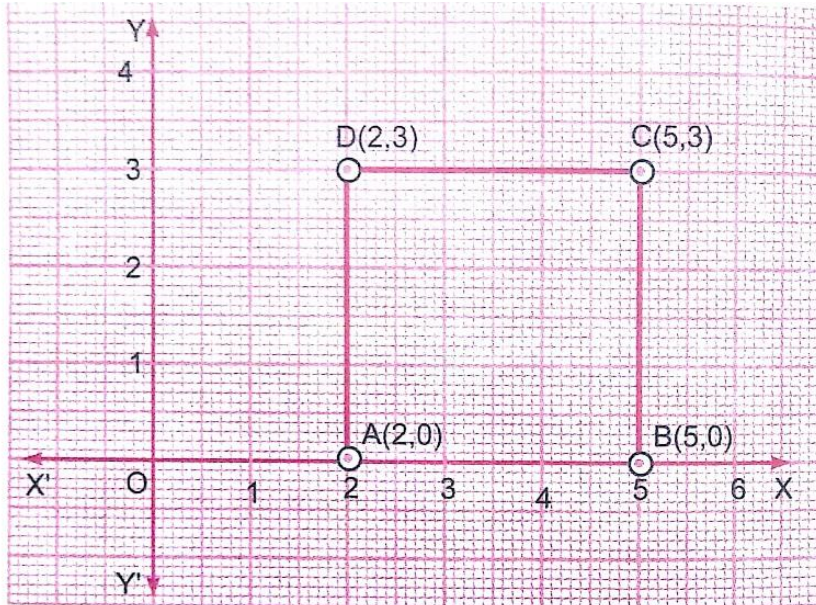


Fig. 4.14

Sol. Coordinates of points D (2, 3)

Que 2. Plot the points A (1, -3) and B (5, 4).

(i) Draw a line segment with these points. Write the coordinates of a points on the line segment AB.

(ii) Extend this line segment and write the coordinates of a point on this line which lies outside the line segment AB.

Sol. The point C (2.7, 0) lies on the line segment AB.

The point D (0, -4.7) lies on the same line but outside the line segment AB.

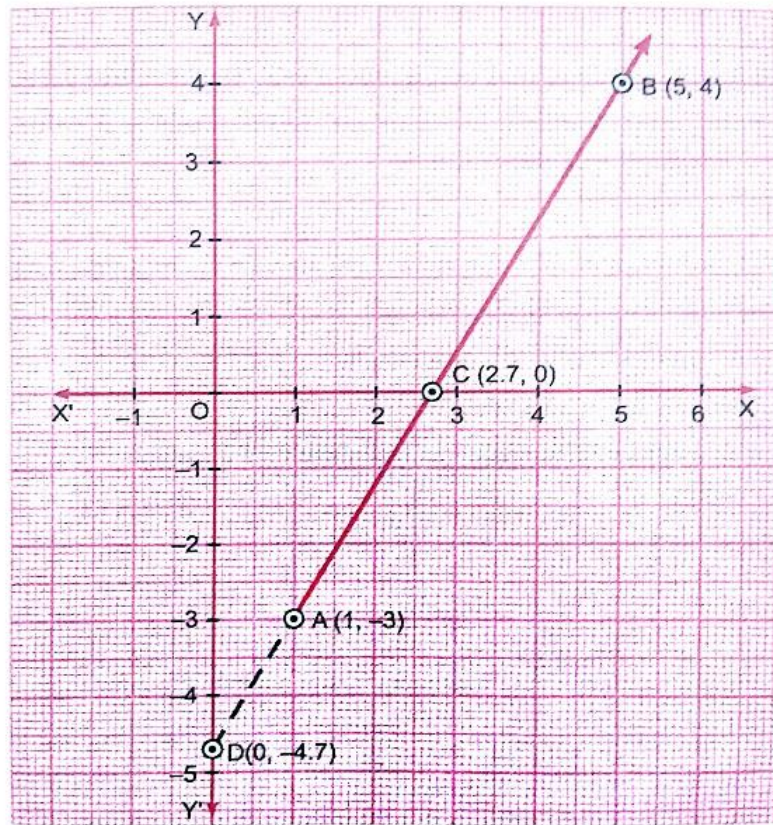
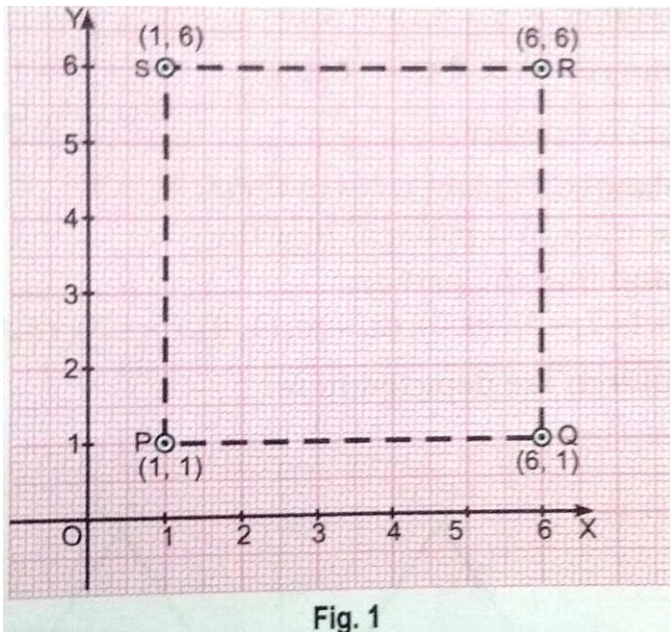


Fig. 4.15

Value Based Questions

Que 1. Three students were made to stand on the Points P, Q and S with coordinates $(1, 1)$, $(6, 1)$ and $(1, 6)$ respectively in a playground to play a game. Find the coordinates of the fourth point R so that PQRS forms a square. Which type of value would you infer from the question?

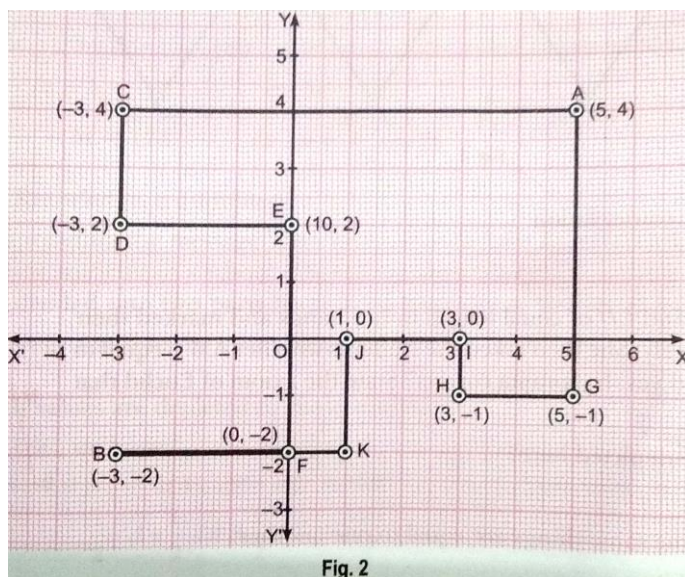
Sol. Coordinates of R are $(6, 0)$



Reasoning, enjoyment, physical fitness.

Que 2. There are two routes from destination A to B as shown in the figure. Which route is shorter? If Jatinder travels from A to B via points G, H, I, J, K and F always, which values depicted by him?

Sol.



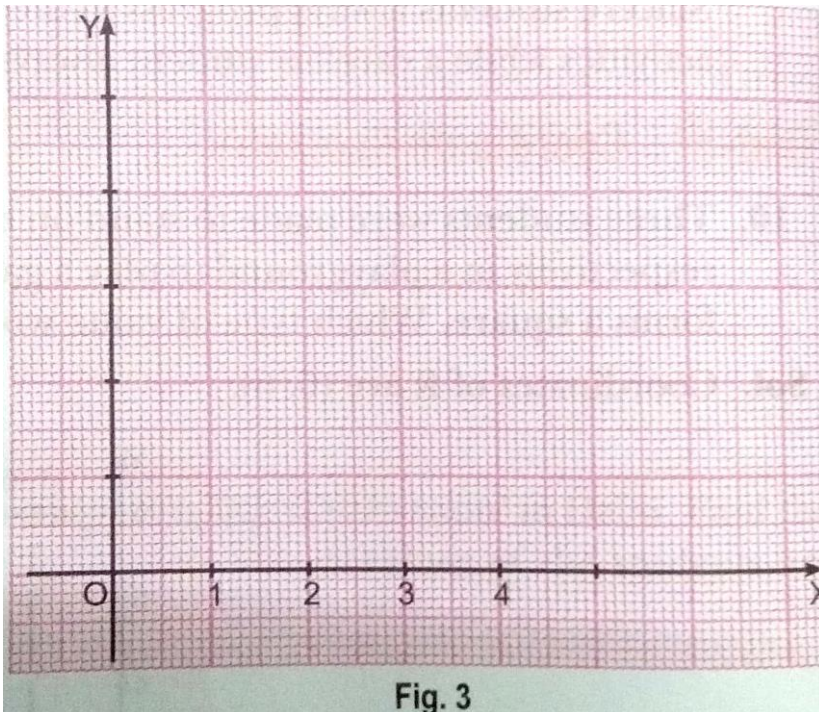
One Route is $AC + CD + DE + EF = 8 + 2 + 3 + 4 + 3 = 20$ units

Second Route is $AG + GH + HI + IJ + JK + KF + FB = 5 + 2 + 1 + 2 + 2 + 1 + 3 = 16$ units

Route via points G, H, I, J, K and F is shorter.

Economical, time saving, reasoning.

Que 3. Some students of a school started a campaign against 'Child Labour' for which they prepared rectangular banners as shown in the figure. If cost of 1 cm^2 of banner is ₹3, find the cost incurred on preparing 5 banners for the campaign. Which values are depicted in the question?



Sol. Area of rectangle ABCD = $5 \times 3 = 15 \text{ cm}^2$

Cost incurred on one banner = $\text{₹}3 \times 15 = \text{₹}45$

Cost incurred on 5 banners = $5 \times \text{₹}45 = \text{₹}225$

Social awareness, caring, cooperative.

Que 4. Children of a society planned to plant trees in their area. They planted the trees in a pattern. Plot the following coordinates and find the pattern.

$(-8, 0), (-6, -3), (-4, 0), (-2, -3), (0, 0), (2, -3), (4, 0), (6, -3), (8, 0), (6, 3), (2, 3), (-2, 3), (-6, 3)$ Which values of the children are depicted here?

Sol.

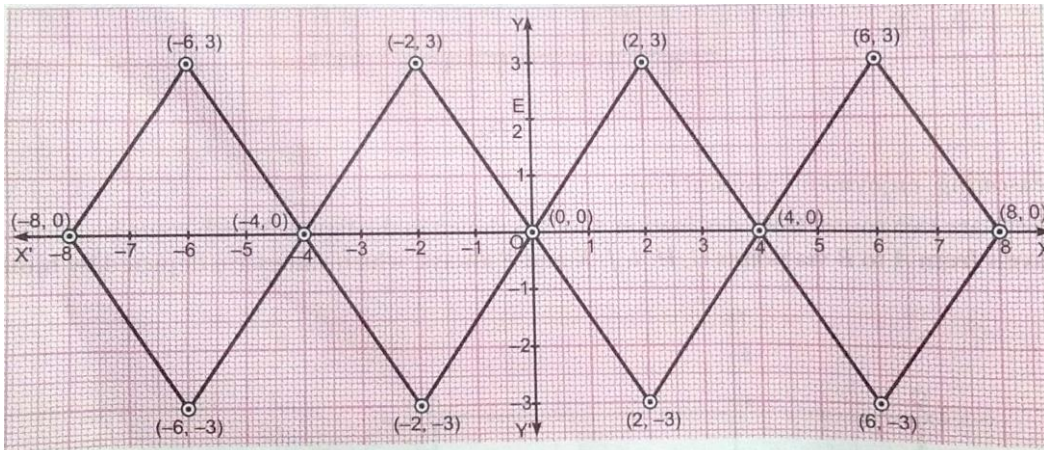


Fig. 4

Environmental care, beauty, conservation.