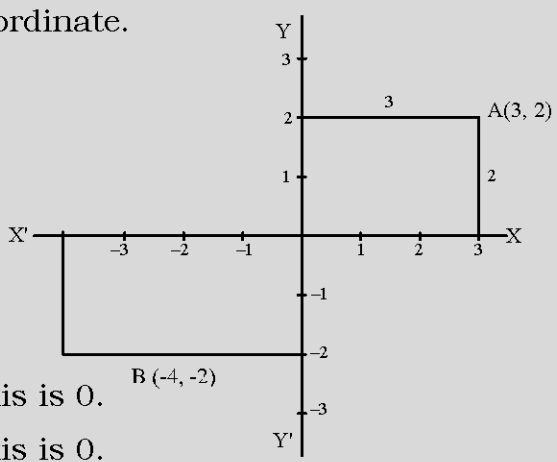




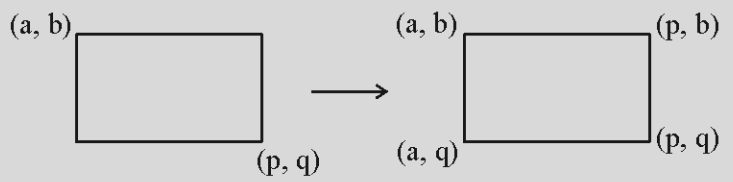
Things to Remember

- ◆ Two measures are needed to locate a point in a plane. These measures are called the coordinates of that point. To locate a point in a plane, imagine two mutually perpendicular lines called the axes. The horizontal line is called the x-axis and vertical line is called the y-axis.
- ◆ The distance of a point from the y-axis is called its x-coordinate and the distance from x-axis is called its y-coordinate.

x-coordinate of A=3
 y-coordinate of A=2
 Coordinates of A=(3,2)
 Coordinates of B=(-4,-2)

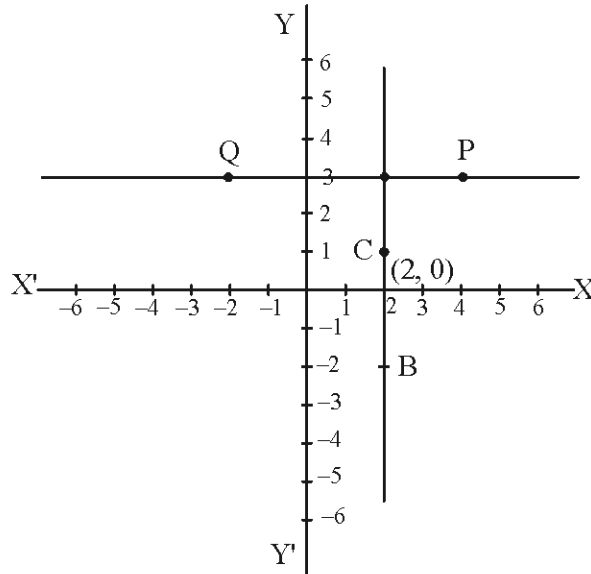


- ◆ y-coordinate of any point on the x-axis is 0.
 x-coordinate of any point on the y-axis is 0.
- ◆ y-coordinates of all points on a line parallel to x-axis are equal.
- ◆ x-coordinates of all points on a line parallel to y-axis are equal.
- ◆ If the sides of a rectangle are parallel to the axes, then from the coordinates of one pair of opposite vertices, the coordinates of the other pair of opposite vertices can be found.



- ◆ The distance between the points (x_1, y) and (x_2, y) on a line parallel to the x-axis is $|x_1 - x_2|$
- ◆ The distance between the points (x, y_1) and (x, y_2) on a line parallel to the y-axis is $|y_1 - y_2|$
- ◆ The distance between any two points (x_1, y_1) and (x_2, y_2) is $\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$
- ◆ The distance of a point (x, y) from the origin is $\sqrt{x^2 + y^2}$.

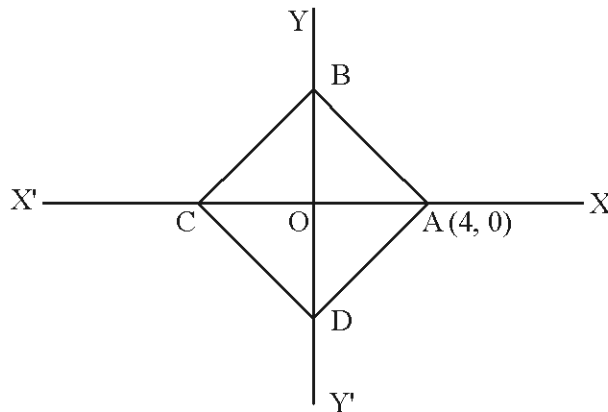
Worksheet 1



In the picture, the line AB drawn through the point (2,0) and parallel to the y-axis. Also the line PQ drawn through the point (0,3) and parallel to the x-axis.

- (a) x-coordinate of any point on the line AB=
- (b) y-coordinate of the point A=
- (c) Write the coordinates of A,B and C
- (d) y-coordinate of any point on the line PQ=.....
- (e) x-coordinates of the point P =
- (f) Write the coordinates of P, Q and R.

Worksheet-2



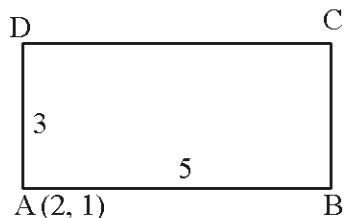
In the picture ABCD is a square and the coordinates of A are (4,0)

- (a) Coordinates of B = (0, _____)
- (b) Coordinates of C = (____, ____)

MATHEMATICS

- (c) Coordinates of D = (____,____)
- (d) Length of the diagonal = _____
- (e) Length of one side of the square = _____

Worksheet-3



In the rectangle ABCD, AB=5 units, AD=3 units and its sides parallel to the coordinate axes. Write the coordinates of the vertices.

$$\begin{aligned}\text{Coordinates of B} &= (2 + ___, 1) \\ &= (___, 1)\end{aligned}$$

$$\begin{aligned}\text{Coordinates of C} &= (___, 1 + ___) \\ &= (___, ___)\end{aligned}$$

$$\text{Coordinates of D} = (___, ___)$$

Worksheet-4

In the figure ABCD is a square.

a. Length of AB=Distance between A and B. = $|\square - \square| = \square$

b. BC = \square CD = \square AD = \square

c. perimeter of the square = AB + \square + \square + \square
= $\square + \square + \square + \square$
= \square

d. Length of the diagonal, AC = $\sqrt{(\square - \square)^2 + (\square - \square)^2}$
= $\sqrt{\square + \square}$
= \square

Worksheet-5

A circle with centre as origin, (0,0), is passing through the point (4,0)

a) Distance between the points (0,0) and (4,0) = $|\square - \square|$
 $= \square$

Diameter of the circle

b) Other two points of the circle = $(\square, \square), (\square, \square)$

c) Distance between the two points (0,0), (3,2)

$$= \sqrt{\square^2 + \square^2} = \sqrt{\square + \square} = \square$$

\square is the radius.

d) \therefore the point (3,2) is \square the circle.

ANSWERS

Worksheet 1

- (a) 2
- (b) 3
- (c) A(2,3), B (2,-2),C(2,1)
- (d) 3
- (e) 4
- (f) P(4,3), Q(-2,3),R(1,3)

Worksheet 2

- (a) (0,4)
- (b) (-4,0)
- (c) (0,-4)
- (d) 8 unit
- (e) $4\sqrt{2}$ units

Worksheet 3

- (2+5,1)
- (7,1)
- (7,1+3)

(7,4)

(2,4)

Worksheet 4

a) $|3-6| = |-3| = 3$ units

b) $BC = |4-7| = |-3| = 3$ units $CD=3$ $AD=3$

c) Perimeter = $3+3+3+3=12$ unit

d) Diagonal, $AC = \sqrt{(6-3)^2 + (7-4)^2} = \sqrt{3^2 + 3^2} = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2}$

Worksheet 5

a) 4 units

b) (-4, 0), (0, 4)

c) $\sqrt{3^2 + 2^2} = \sqrt{9+4} = \sqrt{13}$ $\sqrt{13} < 4$

(3,2) is inside the circle.

