

## Access Answers of Maths NCERT class 9 Chapter 3 – Coordinate Geometry

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### Class 9 Maths Chapter 3 Exercise 3.1 Page: 53

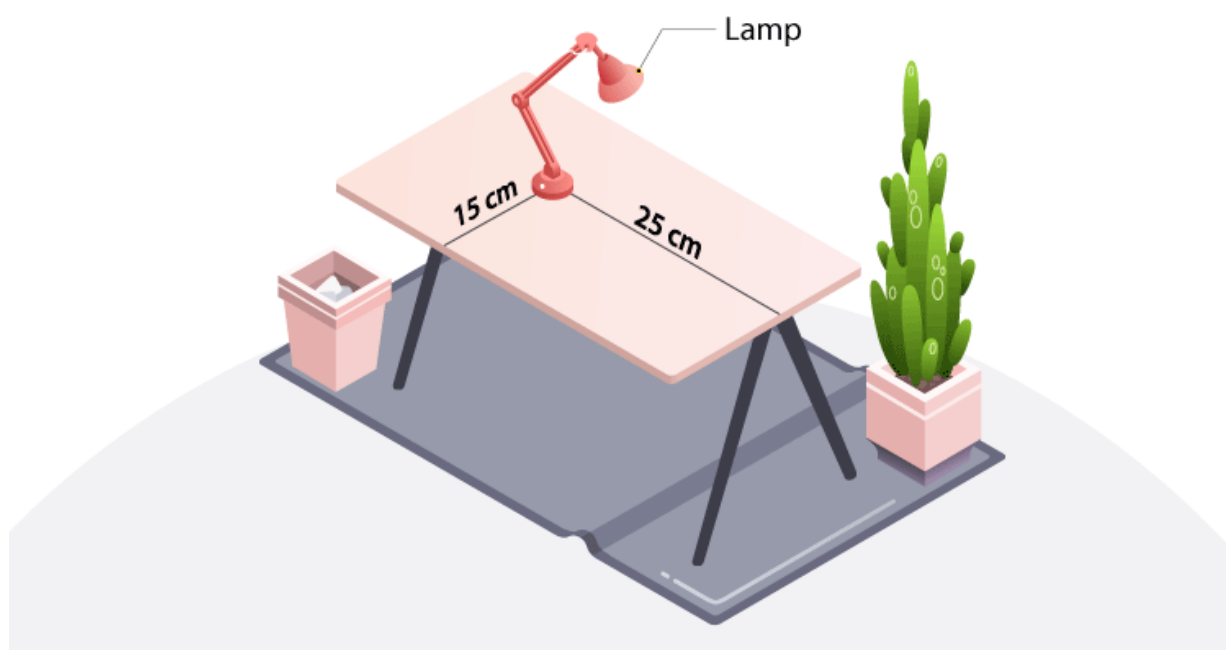
**1. How will you describe the position of a table lamp on your study table to another person?**

**Solution:**

For describing the position of table lamp on the study table, we take two lines, a perpendicular and a horizontal line. Considering the table as a plane (x and y axis) and taking perpendicular line as Y axis and horizontal as X axis respectively. Take one corner of table as origin where both X and Y axes intersect each other. Now, the length of table is Y axis and breadth is X axis. From the origin, join the line to the table lamp and mark a point. The distances of the point from both X and Y axes should be calculated and then should be written in terms of coordinates.

The distance of the point from X-axis and Y-axis is x and y respectively, so the table lamp will be in (x, y) coordinate.

Here,  $(x, y) = (15, 25)$

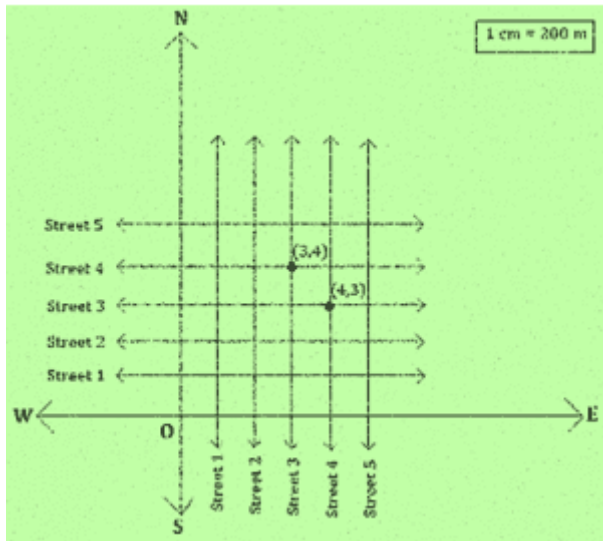


**2. (Street Plan) :** A city has two main roads which cross each other at the centre of the city. These two roads are along the North-South direction and East-West direction. All the other streets of the city run parallel to these roads and are 200 m apart. There are 5 streets in each direction. Using  $1\text{ cm} = 200\text{ m}$ , draw a model of the city on your notebook. Represent the roads/streets by single lines.

There are many cross-streets in your model. A particular cross-street is made by two streets, one running in the North – South direction and another in the East – West direction. Each cross street is referred to in the following manner: If the 2nd street running in the North – South direction and 5th in the East – West direction meet at some crossing, then we will call this cross-street (2, 5). Using this convention, find:

- (i) how many cross – streets can be referred to as (4, 3).
- (ii) how many cross – streets can be referred to as (3, 4).

**Solution:**



- (i) Only one street can be referred to as (4,3) (as clear from the figure).
- (ii) Only one street can be referred to as (3,4) (as we see from the figure).

### Exercise 3.2 Page: 60

**1. Write the answer of each of the following questions:**

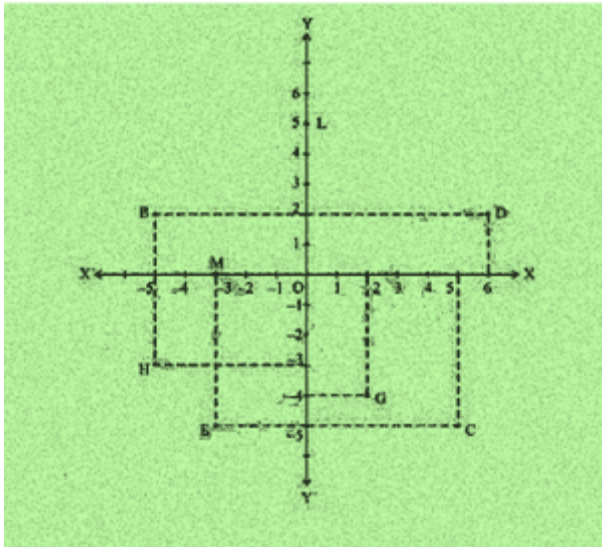
- (i) What is the name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?
- (ii) What is the name of each part of the plane formed by these two lines?
- (iii) Write the name of the point where these two lines intersect.

**Solution:**

1. The name of horizontal and vertical lines drawn to determine the position of any point in the Cartesian plane is x-axis and y-axis respectively.
2. The name of each part of the plane formed by these two lines x-axis and the y-axis is quadrants.
3. The point where these two lines intersect is called the origin.

**2. See Fig.3.14, and write the following:**

1. The coordinates of B.
2. The coordinates of C.
3. The point identified by the coordinates  $(-3, -5)$ .
4. The point identified by the coordinates  $(2, -4)$ .
5. The abscissa of the point D.
6. The ordinate of the point H.
7. The coordinates of the point L.
8. The coordinates of the point M.



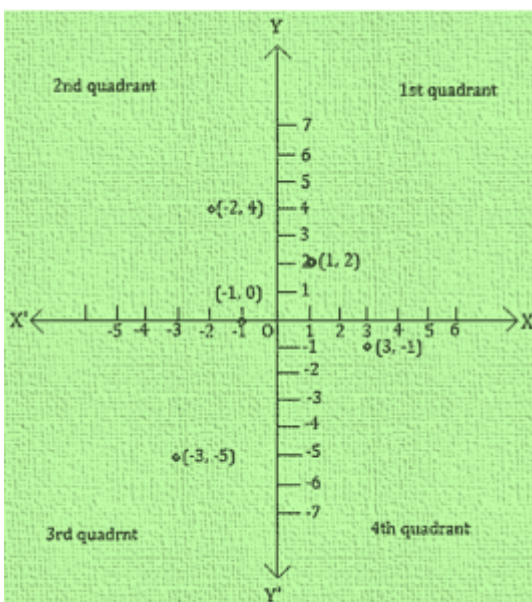
Solution:

1. The co-ordinates of B is  $(-5, 2)$ .
2. The co-ordinates of C is  $(5, -5)$ .
3. The point identified by the coordinates  $(-3, -5)$  is E.
4. The point identified by the coordinates  $(2, -4)$  is G.
5. Abscissa means x co-ordinate of point D. So, abscissa of the point D is 6.
6. Ordinate means y coordinate of point H. So, ordinate of point H is -3.
7. The co-ordinates of the point L is  $(0, 5)$ .
8. The co-ordinates of the point M is  $(-3, 0)$ .

### Exercise 3.3 Page: 65

1. In which quadrant or on which axis do each of the points  $(-2, 4)$ ,  $(3, -1)$ ,  $(-1, 0)$ ,  $(1, 2)$  and  $(-3, -5)$  lie? Verify your answer by locating them on the Cartesian plane.

Solution:



- $(-2, 4)$ : Second Quadrant (II- Quadrant)

- $(3, -1)$ : Fourth Quadrant (IV- Quadrant)
- $(-1, 0)$ : Negative x-axis
- $(1, 2)$ : First Quadrant (I- Quadrant)
- $(-3, -5)$ : Third Quadrant(III- Quadrant)

**2. Plot the points  $(x, y)$  given in the following table on the plane, choosing suitable units of distance on the axes.**

<b>x</b>	<b>-2</b>	<b>-1</b>	<b>0</b>	<b>1</b>	<b>3</b>
<b>y</b>	<b>8</b>	<b>7</b>	<b>-1.25</b>	<b>3</b>	<b>-1</b>

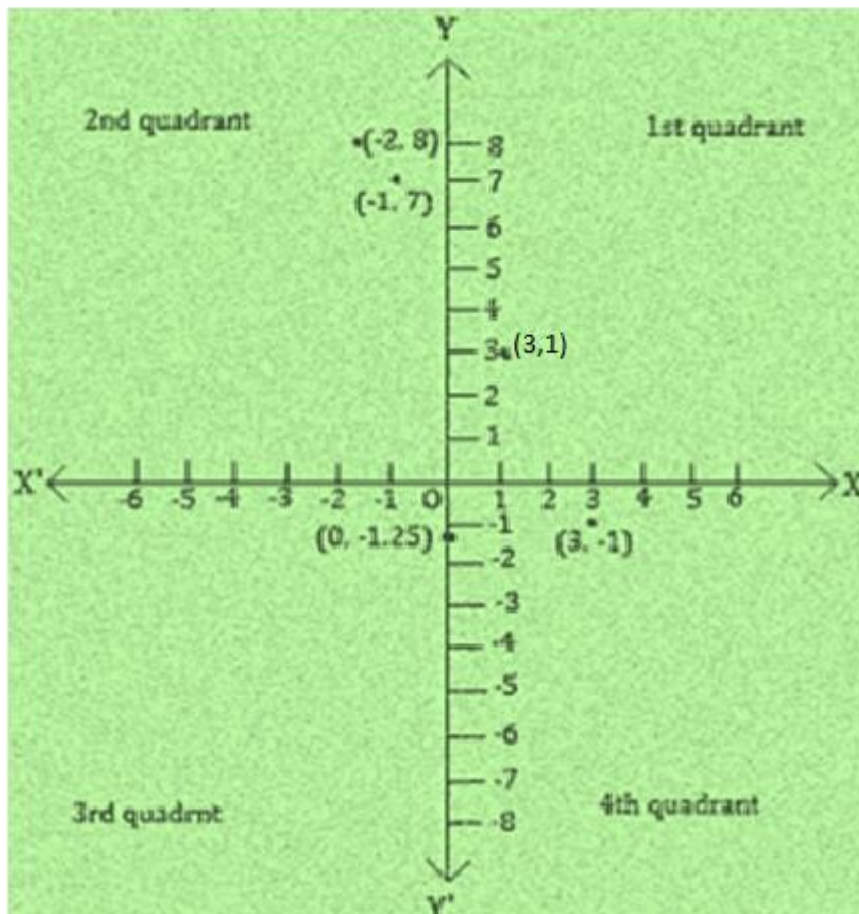
Solution:

The points to plotted on the  $(x,y)$  are:

- $(-2,8)$
- $(-1,7)$
- $(0,-1.25)$
- $(1,3)$
- $(3,-1)$

On the graph mark X-axis and Y-axis. Mark the meeting point as O.

Now, Let 1 unit = 1 cm



- $(-2,8)$ : II- Quadrant, Meeting point of the imaginary lines that starts from 2 units to the left of origin O and from 8 units above the origin O
- $(-1,7)$ : II- Quadrant, Meeting point of the imaginary lines that starts from 1 units to the left of origin O and from 7 units above the origin O

- $(0, -1.25)$ : On the y-axis, 1.25 units to the bottom of origin O
- $(1, 3)$ : I- Quadrant, Meeting point of the imaginary lines that starts from 1 units to the right of origin O and from 3 units above the origin O
- $(3, -1)$ : IV- Quadrant, Meeting point of the imaginary lines that starts from 3 units to the right of origin O and from 1 unit below the origin O