NCERT solutions for class 9 Maths Chapter 3 Coordinate Geometry

Excercise: 3.1

Q1 How will you describe the position of a table lamp on your study table to another person?

Answer:

To describe the position of a table lamp placed on the table,

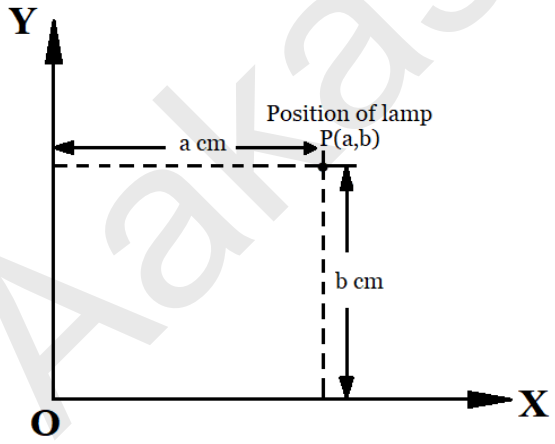
Let us consider the table lamp as P and the table as a plane.

Then, we consider two perpendicular edges of the table as the axes OX and OY.

From OY measure the perpendicular distance $'a'\ cm$ of P.

From OX measure the perpendicular distance $'b'\ cm$ of P.

Thus, the position of the lamp is then given by;



Q2 (i) (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.

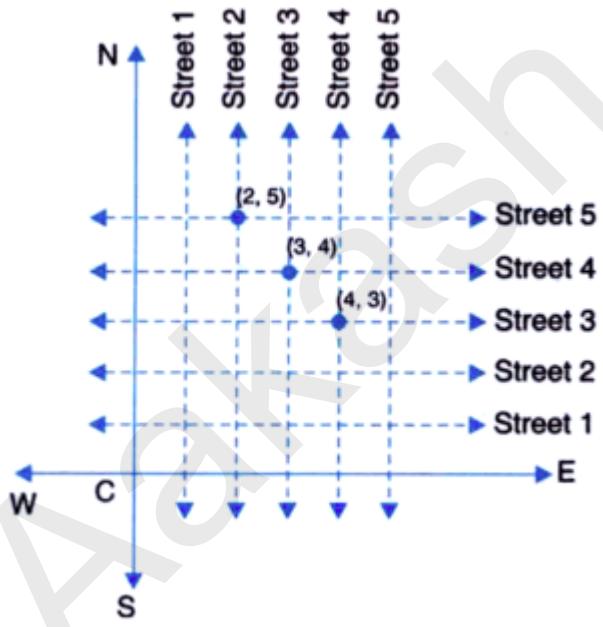
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All the other streets of the city run parallel to these roads and are 200 m apart. There are 5 streets in each direction. Using 1cm = 200 m, draw a model of the city on your notebook. Represent the roads/streets by single lines.

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 2 nd street running in the North-South direction and 5 th in the East-West direction meet at some crossing, then we will call this cross-street (2, 5). Using this convention, find: how many cross - streets can be referred to as (4, 3).

Answer:

(i) From the figure:



There is only one cross - streets which can be referred to as (4, 3).

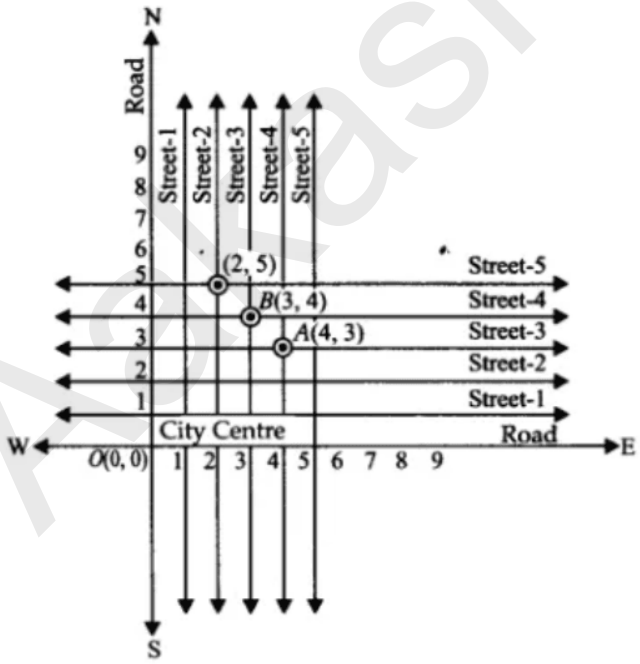
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Q2 (ii) (Street Plan) : A city has two main roads which cross each other at the centre of the city. These two roads are along the North-South direction and East-West direction. All the other streets of the city run parallel to these roads and are 200 m apart. There are 5 streets in each direction. Using 1cm = 200 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 2 nd street running in the North-South direction and 5 th in the East-West direction meet at some crossing, then we will call this cross-street (2, 5). Using this convention, find: how many cross - streets can be referred to as (3, 4).

Answer:

(ii) From the figure:



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The cross street as shown by the point $B(3,4)$.

We have located the two cross streets because of the two reference lines.

Excercise: 3.2

Q1 (i) Write the answer of each of the following questions:

What is the name of horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?

Answer:

The Horizontal line is x-axis and the Vertical line is y-axis.

Q1 (ii) Write the answer of each of the following questions:

What is the name of each part of the plane formed by these two lines?

Answer:

The name of each part of the plane formed by the x-axis and the y-axis is called "Quadrant".

Q1 (iii) Write the answer of each of the following questions:

Write the name of the point where these two lines intersect.

Answer:

The point where x-axis and y-axis both intersect is known as Origin.

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Q2 See Fig.3.14, and write the following:

(i) The coordinates of B.

(ii) The coordinates of C.

(iii) The point identified by the coordinates (–3, –5).

(iv) The point identified by the coordinates (2, – 4).

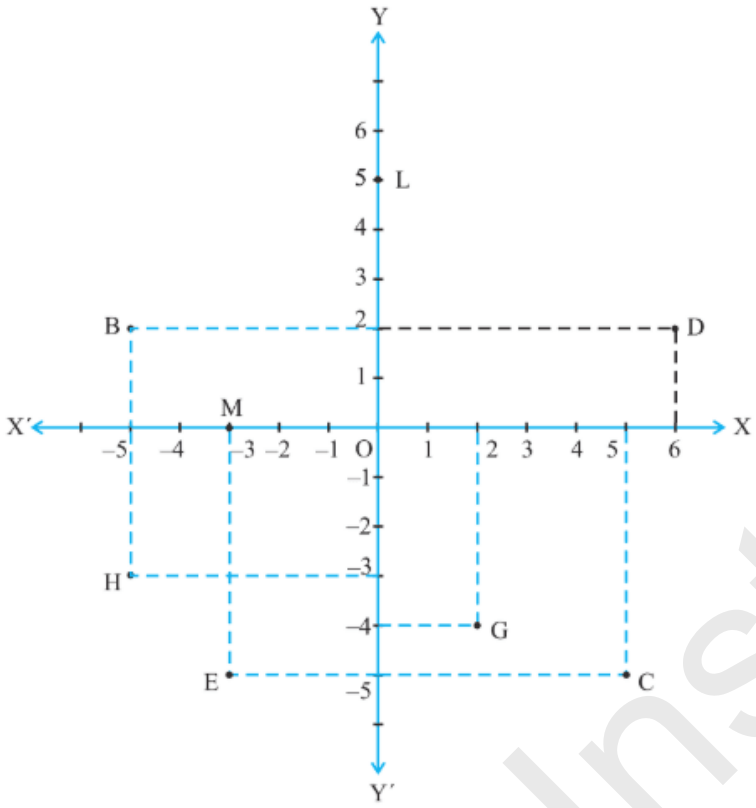
(v) The abscissa of the point D.

(vi) The ordinate of the point H.

(vii) The coordinates of the point L.

(viii) The coordinates of the point M.

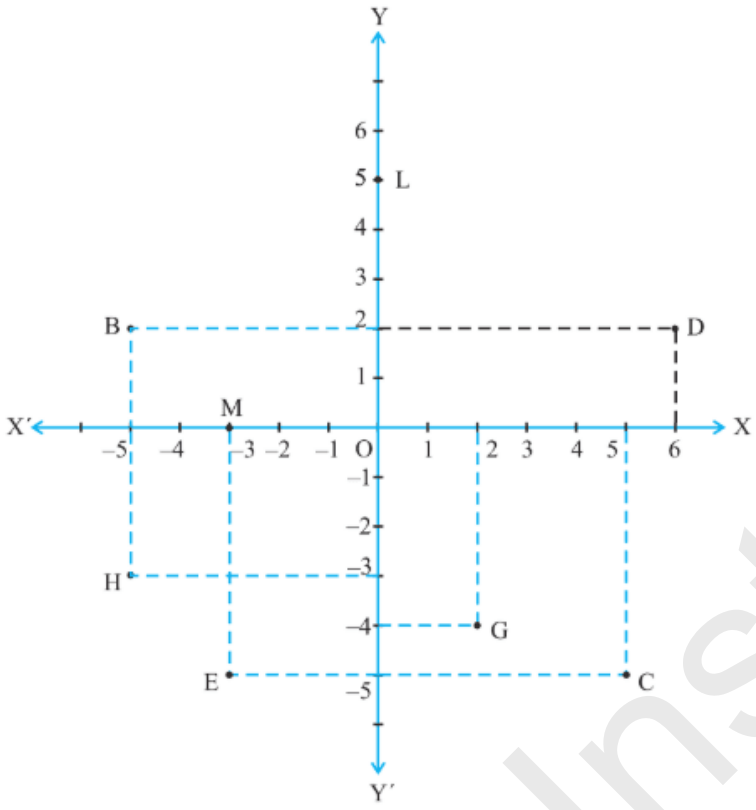
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Answer:

From the figure:

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(i) The coordinates of B are $(-5, 2)$.

(ii) The coordinates of C are $(5, -5)$.

(iii) The point is E identified by the coordinates (–3, –5).

(iv) The point is G identified by the coordinates (2, – 4).

(v) The abscissa of the point D is 6.

(vi) The ordinate of the point H is -3.

(vii) The coordinates of the point L are $(0, 5)$.

(viii) The coordinates of the point M are $(-3, 0)$.

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Excercise: 3.3

Q1 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.

Answer:

(-2,4) lies in second quadrant

(3,-1) lies in fourth quadrant

(-1,0) lies in second quadrant

(1,2) lies in first quadrant

(-3,-5) lies in third quadrant

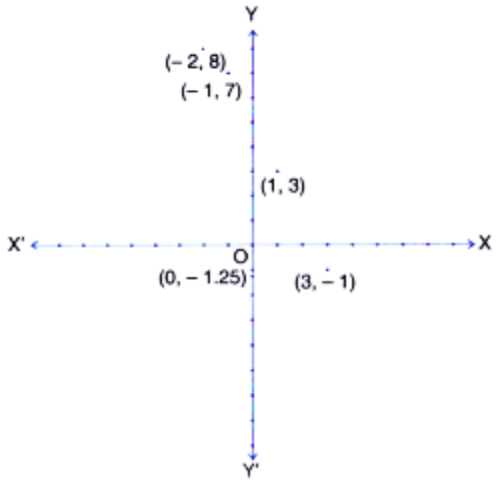
Q2 Plot the points (x, y) given in the following table on the plane, choosing suitable unitsof distance on the axes.

x	-2	-1	0	1	3
y	8	7	-1.25	2	-1

Answer:

So, the graph of the given points is

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