Exercise 3.1 (Revised) - Chapter 3 - Coordinate Geometry - Ncert Solutions class 9 - Maths

Updated On 11-02-2025 By Lithanya

Chapter 3: Coordinate Geometry - NCERT Solutions for Class 9 Maths

Ex 3.1 Question 1.

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

Answer.

Let us consider the given below figure of a study stable, on which a study lamp is placed.

Let us consider the lamp on the table as a point and the table as a plane. From the figure, we can conclude that the table is rectangular in shape, when observed from the top. The table has a short edge and a long edge.

Let us measure the distance of the lamp from the shorter edge and the longer edge. Let us assume that the distance of the lamp from the shorter edge is $15\ \mathrm{cm}$ and from the longer edge, its $25\ \mathrm{cm}$.

Therefore, we can conclude that the position of the lamp on the table can be described in two ways depending on the order of the axes as $(15, 25)$ or $(25, 15)$.

Ex 3.1 Question 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 $\mathbf{200m}$ apart. There are 5 streets in each direction. Using $1\ \mathrm{cm} = 200\ \mathrm{m}$, 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 5 th 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 $(3, 4)$.

Answer.

We need to draw two perpendicular lines as the two main roads of the city that cross each other at the center and let us mark it as $\mathrm{N} - \mathrm{S}$ and $\mathrm{E} - \mathrm{W}$.

Let us take the scale as $1\ \mathrm{cm} = 200\ \mathrm{m}$.

We need to draw five streets that are parallel to both the main roads, to get the given below figure.

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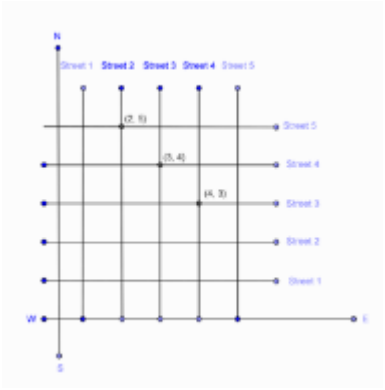

(i) From the figure, we can conclude that only one point have the coordinates as $(4, 3)$.

Therefore, we can conclude that only one cross - street can be referred to as $(4, 3)$.

(ii) From the figure, we can conclude that only one point have the coordinates as $(3, 4)$.

Therefore, we can conclude that only one cross - street can be referred to as $(3, 4)$.

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Exercise 3.2 (Revised) - Chapter 3 - Coordinate Geometry - Ncert Solutions class 9 - Maths

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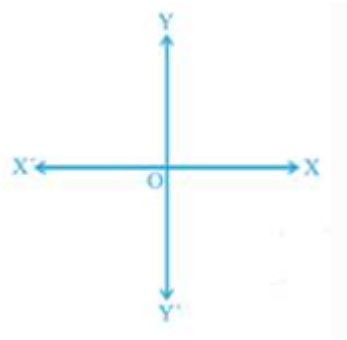
Ex 3.2 Question 1.

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.

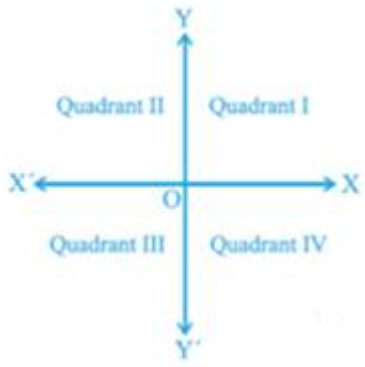
Answer.

(i) The horizontal line that is drawn to determine the position of any point in the Cartesian plane is called as x-axis.

The vertical line that is drawn to determine the position of any point in the Cartesian plane is called as y-axis.



(ii) The name of each part of the plane that is formed by x-axis and y-axis is called as quadrant.



(iii) The point, where the x-axis and the y-axis intersect is called as origin.

Ex 3.2 Question 2.

See Fig., 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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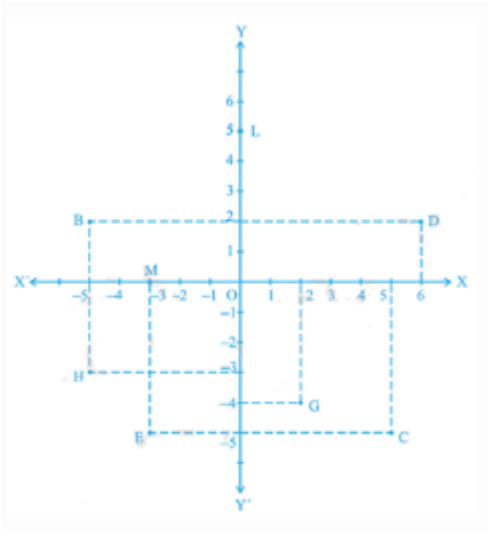

Answer.

We need to consider the given below figure to answer the following questions.

(i) The coordinates of point B in the above figure is the distance of point B from x-axis and y-axis. Therefore, we can conclude that the coordinates of point B are $(-5, 2)$.

(ii) The coordinates of point C in the above figure is the distance of point C from x-axis and y-axis. Therefore, we can conclude that the coordinates of point C are $(5, -5)$.

(iii) The point that represents the coordinates $(-3, -5)$ is E.

(iv) The point that represents the coordinates $(2, -4)$ is G.

(v) The abscissa of point D in the above figure is the distance of point D from the y-axis. Therefore, we can conclude that the abscissa of point D is 6 .

(vi) The ordinate of point H in the above figure is the distance of point H from the x-axis. Therefore, we can conclude that the abscissa of point H is -3 .

(vii) The coordinates of point L in the above figure is the distance of point L from x-axis and y-axis. Therefore, we can conclude that the coordinates of point L are $(0, 5)$.

(viii) The coordinates of point M in the above figure is the distance of point M from x-axis and y-axis. Therefore, we can conclude that the coordinates of point M are $(-3, 0)$.

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