

NCERT SOLUTIONS

CLASS-IX MATHS

CHAPTER-3 COORDINATE GEOMETRY

Exercise 3.1

Q1. How will you describe the position of a mobile phone kept on the study table to another person?

Solution:

For describing the position of a mobile phone kept 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 mobile phone 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.

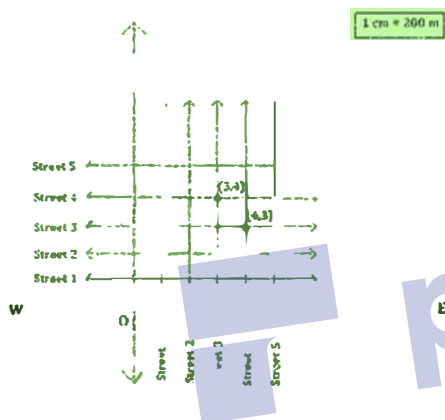
Let the distance of the point from X- axis and Y- axis is x and y respectively, so the mobile phone will be in (x, y) coordinate.

Q2. Street Plan: There are 2 main roads in a city .They intersect each other, at the center of the city. East-West and North-South are the directions of the two roads. Rest streets of the city are at 200 m from each other and are parallel to these roads. There are (five) streets in every direction. Using 1cm = 200 m as scaling unit, draw a model of the city. Representation of roads/streets will be given by single lines.A model which has cross streets in which one particular cross street is made by 2 streets in which one running from North to South direction and the other runs from the East to the West direction. Each of these cross streets are referred as in the following manner: Through which the second street runs from the north to the south and the fifth runs from the East to the West which meets at some crossing, then the cross street that intersect each other will be (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

Q1. Answer the following questions:

(i) Name the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?

(ii) Name each part of the plane formed by the above two lines?

(iii) Name the point where these two lines intersect.

Sol

(i) 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.

(ii) The name of each part of the plane formed by these two lines x-axis and y-axis is quadrants.

(iii) The point where these two lines intersect is called origin.

Q2. Answer the following referring to the figure given below:

(I) co-ordinates of B.

(II) co-ordinates of C.

(III) co-ordinates of the point L.

(IV) co-ordinates of the point M.

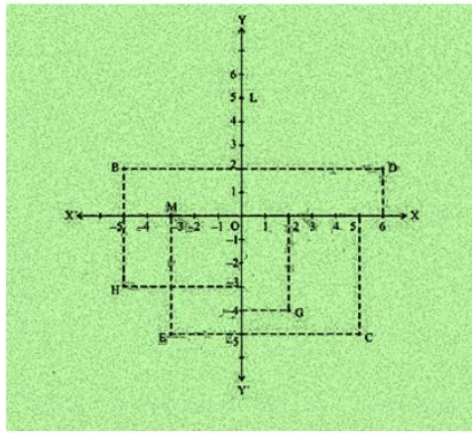
(V) ordinate of the point H.

(VI) abscissa of the point D.

(vi) abscissa of the point L.

(vii) The point i.e. identified by the co-ordinates $(-3, -5)$

(viii) The point i.e. identified by the co-ordinates $(2, -4)$.



Solution:

(i) The co-ordinates of B is $(-5, 2)$.

(ii) The co-ordinates of C is $(5, -5)$.

(iii) The co-ordinates of the point L is $(0, 5)$.

(iv) The co-ordinates of the point M is $(-3, 0)$.

(v) Ordinate means y coordinate of point H. So, ordinate of point H is -3.

(vi) Abscissa means x co-ordinate of point D. So, abscissa of the point D is 6.

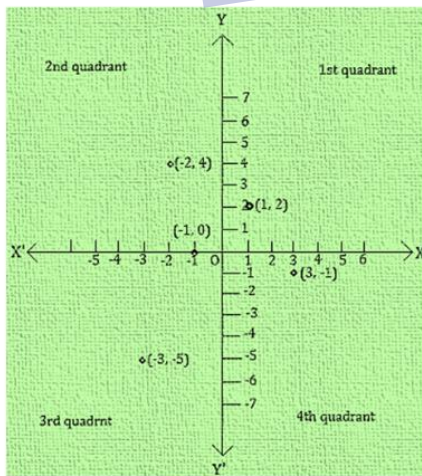
(vii) The point identified by the coordinates $(-3, -5)$ is E.

(viii) The point identified by the coordinates $(2, -4)$ is G.

Exercise 3.3

Q1. Represent the following points $(3, -1)$, $(-2, 4)$, $(1, 2)$, $(-1, 0)$ and $(-3, -5)$ on a Cartesian plane and also tell in which quadrant do they lie? Give reason for your answer.

Solution:



$(-2, 4) \rightarrow$ Second quadrant

$(3, -1) \rightarrow$ Fourth quadrant

$(-1, 0) \rightarrow$ Second quadrant

$(1, 2) \rightarrow$ First quadrant

$(-3, -5) \rightarrow$ Third quadrant

Q2. Plot the points (x, y) given in the following table on the plane, choosing suitable units of distance on the axes and also tell in which quadrant or axis does it lies.

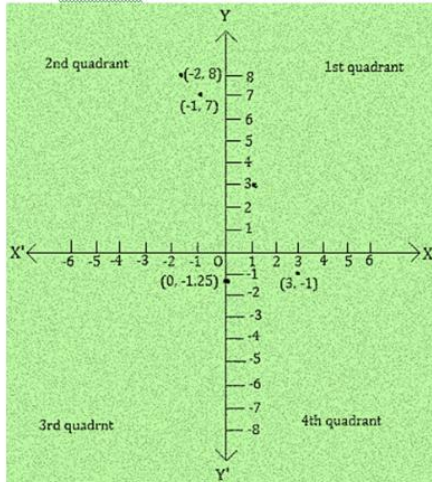
x	-2	-1	0	1	3
Y	8	7	-1.25	3	-1

Solution:

Points (x, y) on the plane.

Remove Watermark Now

Here, let 1 unit = 1 cm



$(-2, 8) \rightarrow$ Second quadrant $(-1, 7) \rightarrow$ Second quadrant $(0, -1.25) \rightarrow$ Fourth quadrant $(1, 3) \rightarrow$ First quadrant $(3, -1) \rightarrow$ Fourth quadrant