

Q 1: Draw the graph of each of the following linear equations in two variables:

(i) $x + y = 4$ (ii) $x - y = 2$ (iii) $-x + y = 6$ (iv) $y = 2x$ (v) $3x + 5y = 15$

(vi) $\frac{x}{2} - \frac{y}{3} = 2$ (vii) $\frac{x-2}{3} = y - 3$

(viii) $2y = -x + 1$

A 1 :

(i) We are given, $x + y = 4$

We get, $y = 4 - x$,

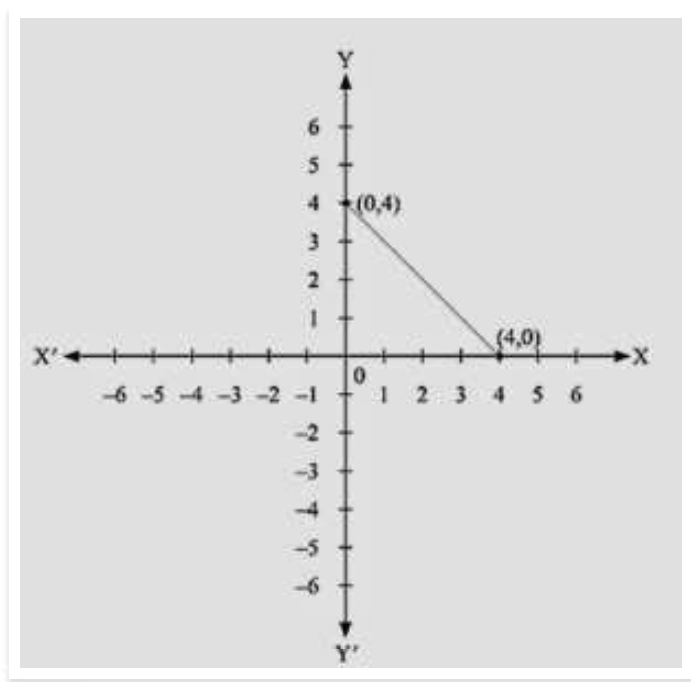
Now, substituting $x = 0$ in $y = 4 - x$,

we get $y = 4$

Substituting $x = 4$ in $y = 4 - x$, we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given table

X	0	4
Y	4	0



(ii) We are given, $x - y = 2$

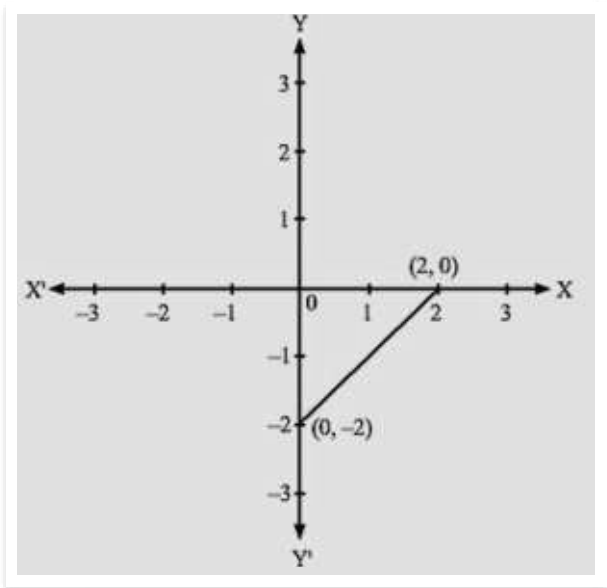
We get, $y = x - 2$

Now, substituting $x = 0$ in $y = x - 2$, we get $y = -2$

Substituting $x = 2$ in $y = x - 2$, we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	2
Y	-2	0



(iii) We are given, $-x + y = 6$

We get, $y = 6 + x$

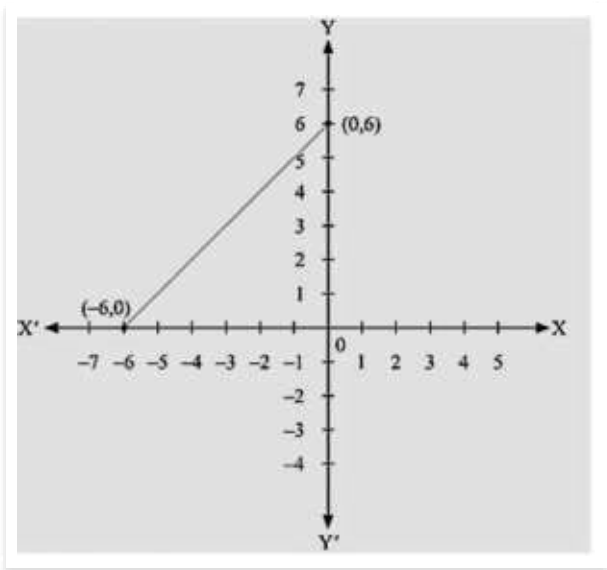
Now, substituting $x = 0$ in $y = 6 + x$,

We get $y = 6$

Substituting $x = -6$ in $y = 6 + x$, we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation.

X	0	-6
Y	6	0



(iv) We are given, $y = 2x$

Now, substituting $x = 1$ in $y = 2x$

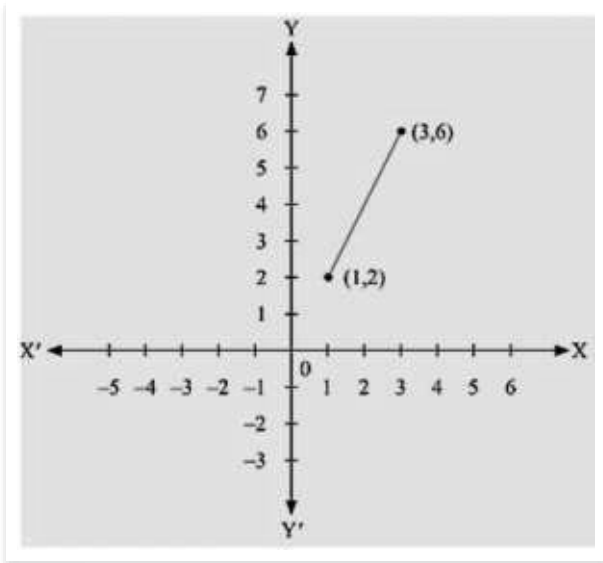
We get $y = 2$

Substituting $x = 3$ in $y = 2x$

We get $y = 6$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	1	3
Y	2	6



(v) We are given, $3x + 5y = 15$

We get, $15 - 3x = 5y$

Now, substituting $x = 0$ in $5y = 15 - 3x$,

We get; $5y = 15$

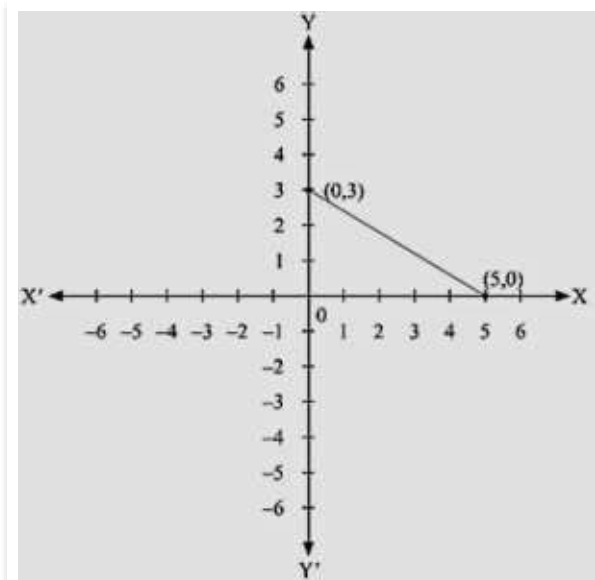
$y = 3$

Substituting $x = 5$ in $5y = 15 - 3x$

we get $5y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	5
Y	3	0



(vi) we are given.

$$\frac{x}{2} - \frac{y}{3} = 2$$

$$\frac{3x-2y}{6} = 2$$

$$3x - 2y = 12$$

We get, $\frac{3x-12}{2} = y$

Now, substituting $x = 0$ in $\frac{3x-12}{2} = y$

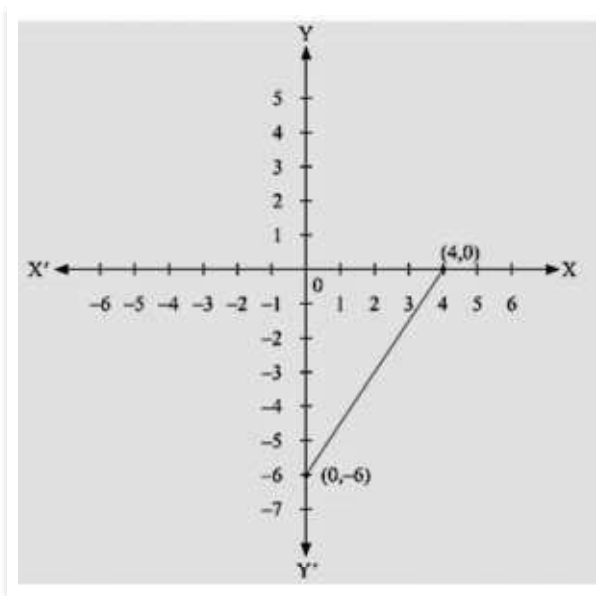
We get $y = -6$

Substituting $x = 4$ in $\frac{3x-12}{2} = y$

We get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	4
Y	-6	0



(vii) We are given,

$$\frac{x-2}{3} = y - 3$$

We get, $x-2 = 3(y-3)$

$$x - 2 = 3y - 9$$

$$x = 3y - 7$$

Now, substituting $x = 5$ in $x = 3y - 7$,

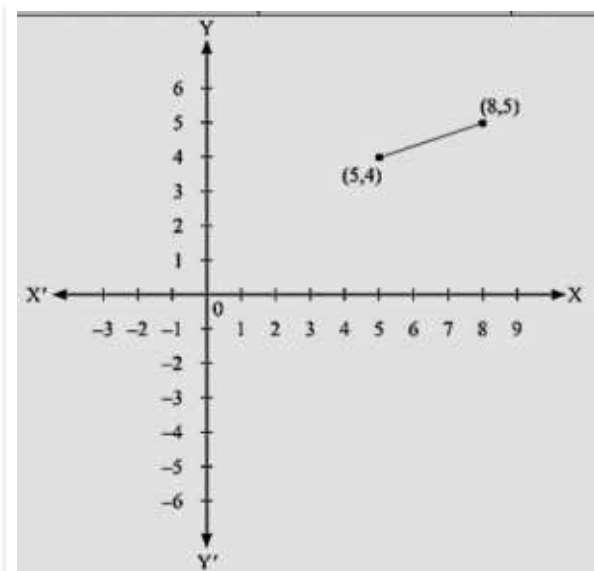
We get; $y = 4$

Substituting $x = 8$ in $x = 3y - 7$,

We get; $y = 5$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	5	8
Y	4	5



(viii) We are given, $2y = -x + 1$

We get, $1 - x = 2Y$

Now, substituting $x = 1$ in $1 - x = 2Y$, we get

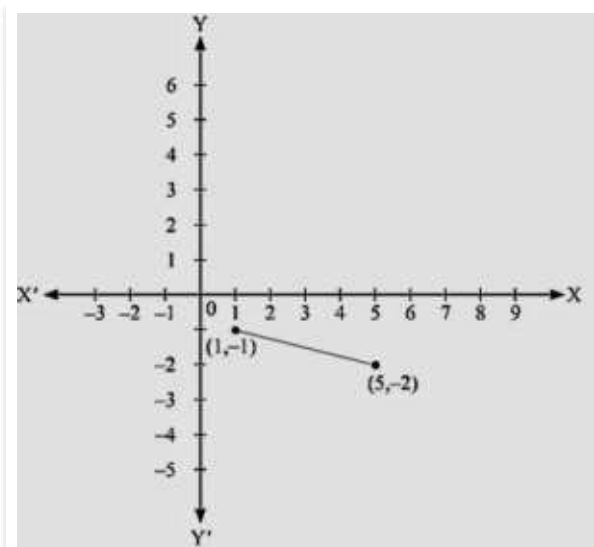
$$y = 0$$

Substituting $x = 5$ in $1 - x = 2Y$, we get

$$y = -2$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	1	5
Y	0	-2



Q 2: Give the equations of two lines passing through (3, 12). How many more such lines are there, and why?

A 2:

We observe that $x = 3$ and $y = 12$ is the solution of the following equations

$$4x - y = 0 \text{ and } 3x - y + 3 = 0$$

So, we get the equations of two lines passing through $(3, 12)$ are, $4x - y = 0$ and $3x - y + 3 = 0$.

We know that passing through the given point infinitely many lines can be drawn.

So, there are infinitely many lines passing through $(3, 12)$

Q 3 : A three-wheeler scooter charges Rs 15 for first kilometer and Rs 8 each for every subsequent kilometer. For a distance of x km, an amount of Rs y is paid. Write the linear equation representing the above information.

A 3 :

Total fare of Rs y for covering the distance of x km is given by

$$y = 15 + 8(x - 1)$$

$$y = 15 + 8x - 8$$

$$y = 8x + 7$$

Where, Rs y is the total fare ($x - 1$) is taken as the cost of first kilometer is already given

Rs 15 and 1 has to subtracted from the total distance travelled to deduct the cost of first Kilometer.

Q 4 : A lending library has a fixed charge for the first three days and an additional charge for each day thereafter. Aarushi paid Rs 27 for a book kept for seven days. If fixed charges are Rs x and per day charges are Rs y . Write the linear equation representing the above information.

A 4 :

Total charges of Rs 27 of which Rs x for first three days and Rs y per day for 4 more days is given by

$$x + y(7 - 3) = 27$$

$$x + 4y = 27$$

Here, $(7 - 3)$ is taken as the charges for the first three days are already given at Rs x and we have to find the charges for the remaining four days as the book is kept for the total of 7 days.

Q5: A number is 27 more than the number obtained by reversing its digits. If its unit's and ten's digit are x and y respectively, write the linear equation representing the statement.

A5:

The number given to us is in the form of ' yx ' ,

Where y represents the ten's place of the number

And x represents the unit's place of the number.

Now, the given number is $10y + x$

Number obtained by reversing the digits of the number is $10x + y$

It is given to us that the original number is 27 more than the number obtained by reversing its digits

$$\text{So, } 10y + x = 10x + y + 27$$

$$10y - y + x - 10x = 27$$

$$9y - 9x = 27$$

$$9(y - x) = 27$$

$$y - x = 27/9 = 3$$

$$x - y + 3 = 0$$

Q6: The Sum of a two digit number and the number obtained by reversing the order of its digits is 121. If units and tens digit of the number are x and y respectively, then write the linear equation representing the above statement.

A6 :

The number given to us is in the form of 'yx',

Where y represents the ten's place of the number and x represents the units place of the number

Now, the given number is $10y + x$

Number obtained by reversing the digits of the number is $10x + y$

It is given to us that the sum of these two numbers is 121

$$\text{So, } (10y + x) + (10x + y) = 121$$

$$10y + y + x + 10x = 121$$

$$11y + 11x = 121$$

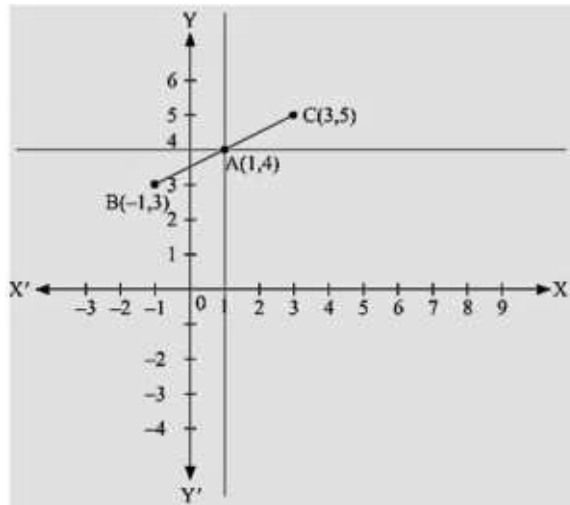
$$11(y + x) = 121$$

$$x + y = 121/11 = 11$$

$$x + y = 11$$

Q7 : Plot the Points (3,5) and (-1,3) on a graph paper and verify that the straight line passing through the points, also passes through the point (1,4)

A7:



By plotting the given points (3, 5) and (-1, 3) on a graph paper, we get the line BC.

We have already plotted the point A (1, 4) on the given plane by the intersecting lines.

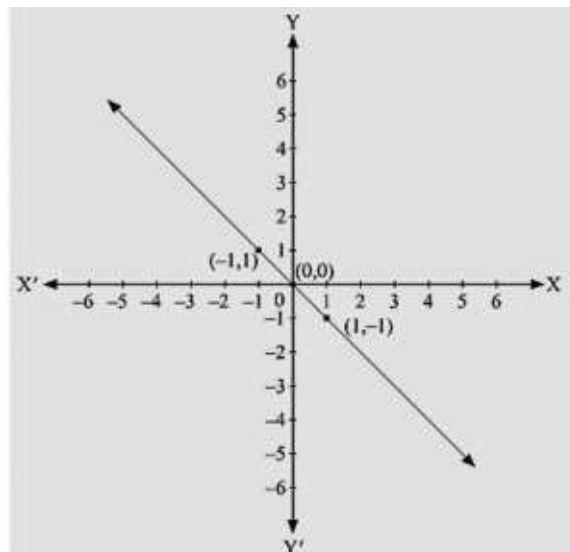
Therefore, it is proved that the straight line passing through (3, 5) and (-1, 3) also passes through A (1, 4).

Q8: From the choices given below, choose the equations whose graph is given in fig

(i) $y = x$ (ii) $x + y = 0$ (iii) $y = 2x$ (iv) $2 + 3y = 7x$

Ans: We are given co-ordinates (1, -1) and (-1, 1) as the solution of one of the following equations.

We will substitute the value of both co-ordinates in each of the equation and find the equation which satisfies the given co-ordinates.



(i) We are given, $y = x$

Substituting $x = 1$ and $y = -1$,

we get; $1 \neq -1$

L.H.S $\neq$ R.H.S

Substituting $x = -1$ and $y = 1$,

we get; $-1 \neq 1$

L.H.S $\neq$ R.H.S

Therefore, the given equation $y = x$ does not represent the graph in the figure.

(ii) We are given,

$$x + y = 0$$

Substituting $x = 1$ and $y = -1$, we get

$$\Rightarrow 1 + (-1) = 0$$

$$\Rightarrow 0 = 0$$

L.H.S = R.H.S

Substituting $x = -1$ and $y = 1$, we get

$$(-1) + 1 = 0$$

$$0 = 0$$

L.H.S = R.H.S

Therefore, the given solutions satisfy this equation.

Thus, it is the equation whose graph is given.

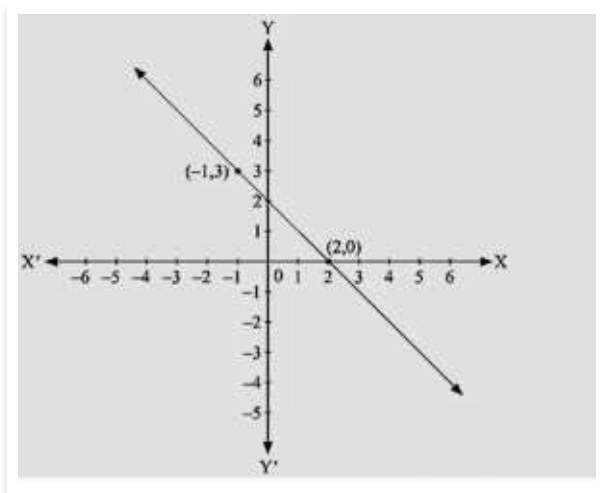
Q9: From the choices given below, choose the equation whose graph is given fig:

(i) $y = x + 2$ (ii) $y = x - 2$ (iii) $y = -x + 2$ (iv) $x + 2y = 6$

A9:

We are given co-ordinates $(-1, 3)$ and $(2, 0)$ as the solution of one of the following equations.

We will substitute the value of both co-ordinates in each of the equation and find the equation which satisfies the given co-ordinates.



(i) We are given, $y = x + 2$

Substituting $x = -1$ and $y = 3$, we get

$$3 \neq -1 + 2$$

$$\text{L.H.S} \neq \text{R.H.S}$$

Substituting $x = 2$ and $y = 0$, we get

$$0 \neq 4$$

$$\text{L.H.S} \neq \text{R.H.S}$$

Therefore, the given solution does not satisfy this equation.

(ii) We are given, $y = x - 2$

Substituting $x = -1$ and $y = 3$, we get

$$3 = -1 - 2$$

$$\text{L.H.S} \neq \text{R.H.S}$$

Substituting $x = 2$ and $y = 0$, we get

$$0 = 0$$

$$\text{L.H.S} = \text{R.H.S}$$

Therefore, the given solutions does not completely satisfy this equation.

(iii) We are given, $y = -x + 2$

Substituting $x = -1$ and $y = 3$, we get

$$3 = -(-1) + 2$$

$$\text{L.H.S} = \text{R.H.S}$$

Substituting $x = 2$ and $y = 0$, we get

$$0 = -2 + 2$$

$$0 = 0$$

$$\text{L.H.S} = \text{R.H.S}$$

Therefore, the given solutions satisfy this equation.

Thus, it is the equation whose graph is given.

Q 10 : If the point $(2, -2)$ lies on the graph of linear equation, $5x + 4y = 4$, find the value of k .

A10 :

It is given that the point $(2, -2)$ lies on the given equation,

$$5x + ky = 4$$

Clearly, the given point is the solution of the given equation.

Now, Substituting $x = 2$ and $y = -2$ in the given equation, we get $5x + ky = 4$

$$5 \times 2 + (-2)k = 4$$

$$2k = 10 - 4$$

$$2k = 6$$

$$k = 6/2$$

$$k = 3$$

Q 11 : Draw the graph of equation $2x + 3y = 12$. From the graph, find the co ordinates of the point:

(i) whose y-coordinate is 3 (ii) whose x coordinate is -3

A11:

We are given,

$$2x + 3y = 12$$

$$\text{We get, } y = \frac{12-2x}{3}$$

Substituting, $x = 0$ in $y = \frac{12-2x}{3}$, we get

$$y = \frac{12-2 \times 0}{3}$$

$$y = 4$$

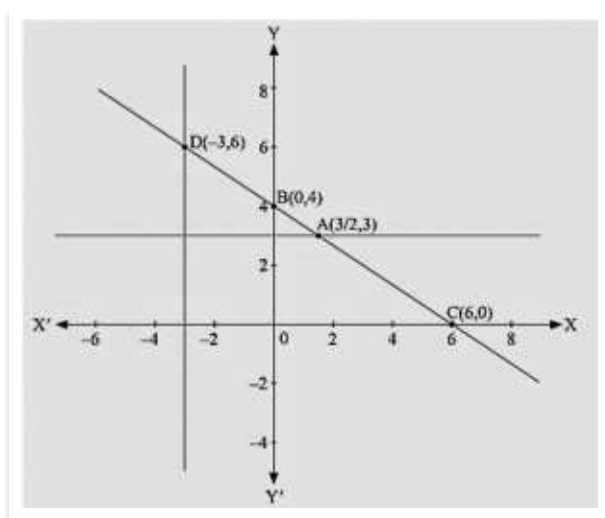
Substituting $x = 6$ in $y = \frac{12-2x}{3}$

$$y = \frac{12-2 \times 6}{3}$$

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	6
Y	4	0



By plotting the given equation on the graph, we get the point B (0, 4) and C (6,0).

(i) Co-ordinates of the point whose y axis is 3 are A (3/2, 3)

(ii) Co-ordinates of the point whose x -coordinate is -3 are D (-3, 6)

Q 12: Draw the graph of each of the equations given below. Also, find the coordinates of the points where the graph cuts the coordinate axes:

(i) $6x - 3y = 12$ (ii) $-x + 4y = 8$ (iii) $2x + y = 6$ (iv) $3x + 2y + 6 = 0$

A12 :

(i) We are given,

$$6x - 3y = 12 \text{ We get,}$$

$$y = (6x - 12) / 3$$

Now, substituting $x = 0$ in $y = - (6x - 12)/3$ we get

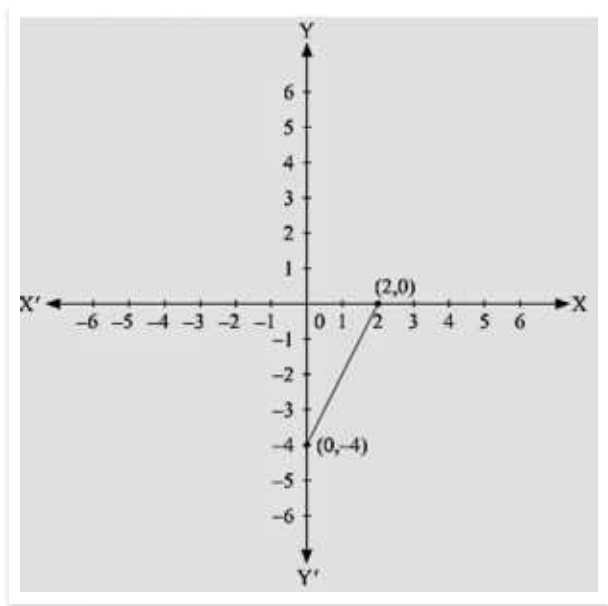
$$y = -4$$

Substituting $x = 2$ in $y = (-6x - 12)/3$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

x	0	2
y	-4	0



Co-ordinates of the points where graph cuts the co-ordinate axes are $y = -4$ at y axis and $x = 2$ at x axis. (ii) We are given,

$$-x + 4y = 8$$

We get,

$$y = \frac{8+x}{4}$$

Now, substituting $x = 0$ in $y = \frac{8+x}{4}$, we get

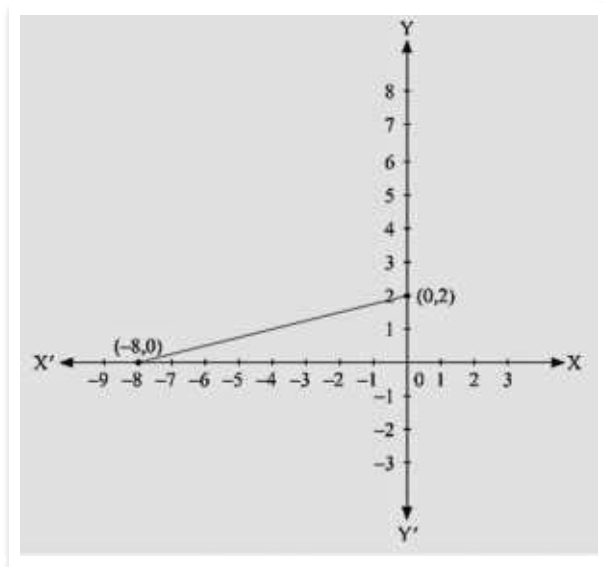
$$y = 2$$

Substituting $x = -8$ in $y = \frac{8+x}{4}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	-8
Y	2	0



Co-ordinates of the points where graph cuts the co-ordinate axes are $y = 2$ at y axis and $x = -8$ at x axis.

(iii) We are given,

$$2x + y = 6$$

$$\text{We get, } y = 6 - 2x$$

Now, substituting $x = 0$ in $y = 6 - 2x$ we get

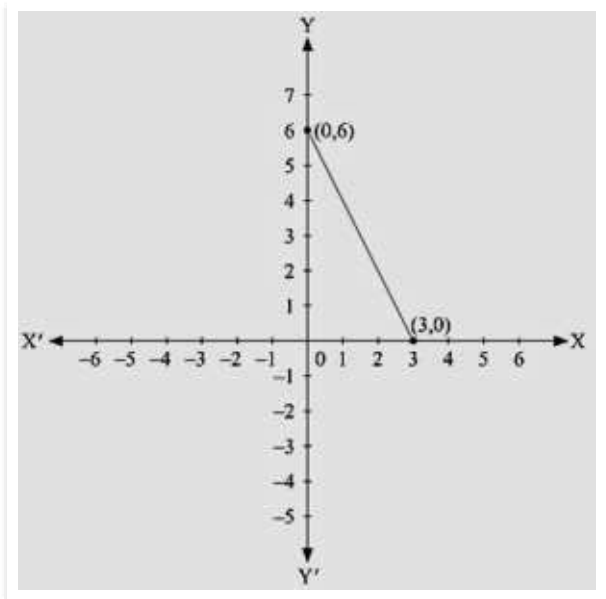
$$y = 6$$

Substituting $x = 3$ in $y = 6 - 2x$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	3
Y	6	0



Co-ordinates of the points where graph cuts the co-ordinate axes are $y = 6$ at y axis and $x = 3$ at x axis.

(iv) We are given,

$$3x + 2y + 6 = 0$$

$$\text{We get, } y = \frac{-(6+3x)}{2}$$

Now, substituting $x = 0$ in $y = \frac{-(6+3x)}{2}$, we get

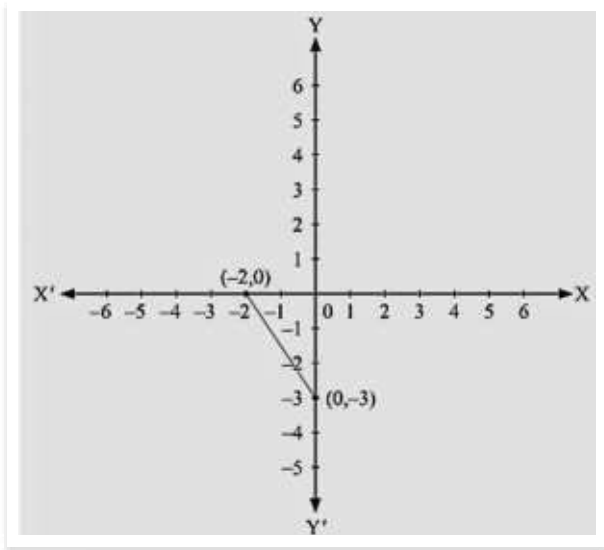
$$y = -3$$

Substituting $x = -2$ in $y = \frac{-(6+3x)}{2}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	-2
y	-3	0



Co-ordinates of the points where graph cuts the co-ordinate axes are $y = -3$ at y axis and $x = -2$ at x axis.

Q 13 : Draw the graph of the equation $2x + y = 6$. Shade the region bounded by the graph and the coordinate axes. Also, find the area of the shaded region.

A13 :

We are given,

$$2x + y = 6$$

We get,

$$y = 6 - 2x$$

Now, substituting $x = 0$ in $y = 6 - 2x$,

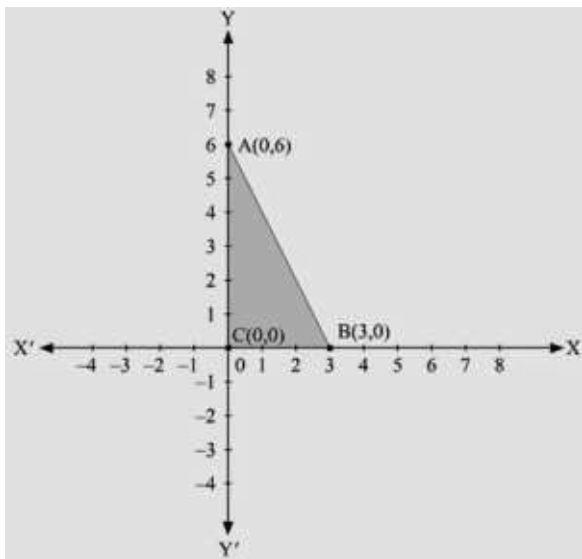
we get $y = 6$

Substituting $x = 3$ in $y = 6 - 2x$,

we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	3
Y	6	0



The region bounded by the graph is ABC which forms a triangle.

AC at y axis is the base of triangle having AC = 6 units on y axis.

BC at x axis is the height of triangle having BC = 3 units on x axis.

Therefore, Area of triangle ABC, say A is given by $A = (\text{Base} \times \text{Height})/2$

$$A = (AC \times BC)/2$$

$$A = (6 \times 3)/2$$

$$A = 9 \text{ sq. units}$$

Q 14 : Draw the graph of the equation $\frac{x}{3} + \frac{y}{4} = 1$. Also, find the area of the triangle formed by the line and the coordinates axes.

A14:

We are given.

$$\frac{x}{3} + \frac{y}{4} = 1$$

$$4x + 3y = 12$$

We get,

$$y = \frac{12-4x}{3}$$

Now, substituting $x = 0$ in $y = \frac{12-4x}{3}$, we get

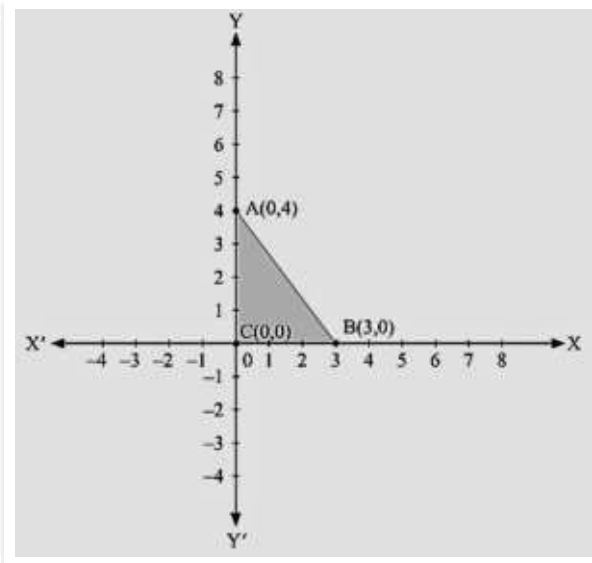
$$y = 4$$

Substituting $x=3$ in $y = \frac{12-4x}{3}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	3
Y	4	0



The region bounded by the graph is ABC which forms a triangle.

AC at y axis is the base of triangle having AC = 4 units on y axis.

BC at x axis is the height of triangle having BC = 3 units on x axis.

Therefore,

Area of triangle ABC, say A is given by

$$A = (\text{Base} \times \text{Height})/2$$

$$A = (AC \times BC)/2$$

$$A = (4 \times 3)/2$$

$$A = 6 \text{ sq. units}$$

Q 15 : Draw the graph of $y = |x|$.

A15:

We are given,

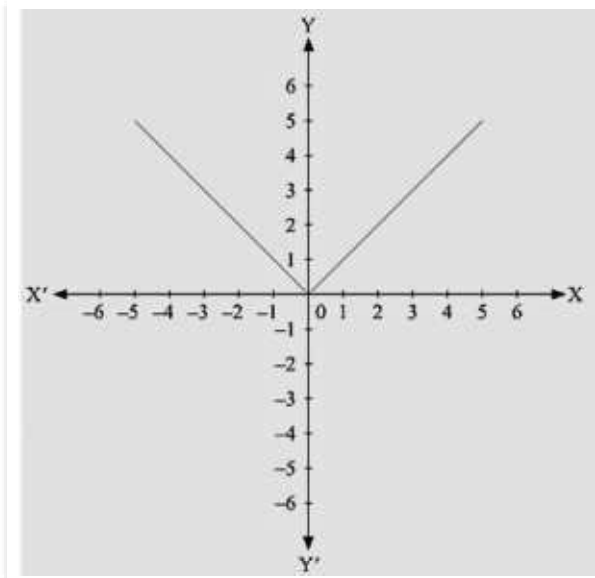
$$y = |x|$$

Substituting $x = 1$, we get $y = 1$

Substituting $x = -1$, we get $y = 1$

Substituting $x = 2$, we get $y = 2$

Substituting $x = -2$, we get $y = 2$



For every value of x , whether positive or negative, we get y as a positive number.

Q 16: Draw the graph of $y = |x| + 2$.

A16:

We are given,

$$Y = |x| + 2$$

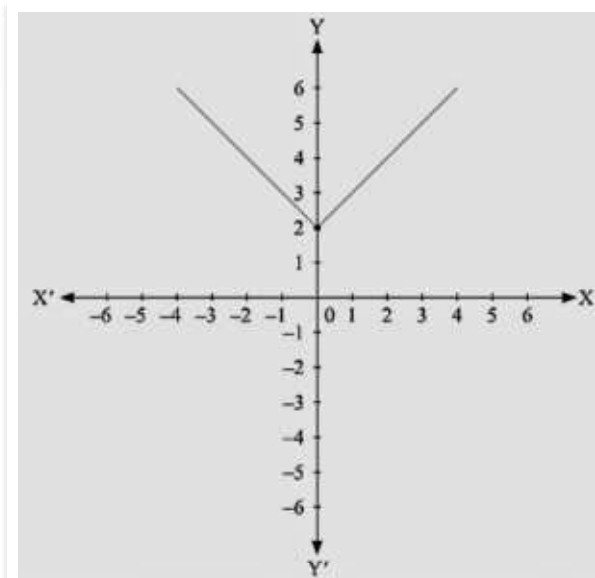
Substituting $x = 0$ we get $y = 2$

Substituting $x = 1$, we get $y = 3$

Substituting $x = -1$, we get $Y = 3$

Substituting $x = 2$, we get $y = 4$

Substituting $x = -2$, we get $y = 4$



For every value of x , whether positive or negative, we get y as a positive number and the minimum value of y is equal to 2 units.

Q 17 : Draw the graphs of the following linear equations on the same graph paper: $2x + 3y = 12$, $x - y = 1$ Find the coordinates of the vertices of the triangle formed by the two straight lines and the y-axis. Also, find the area of the triangle.

A17:

We are given,

$$2x + 3y = 12$$

We get, $y = \frac{12-2x}{3}$

Now, substituting $x = 0$ in $y = \frac{12-2x}{3}$, we get

$$y = 4$$

Substituting $x=6$ in $y = \frac{12-2x}{3}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	6
Y	4	0

Plotting A(0,4) and E(6,0) on the graph and by joining the points , we obtain the graph of equation $2x+3y=12$.

We are given,

$$x - y = 1$$

We get, $y = x - 1$

Now, substituting $x = 0$ in $y=x-1$,

we get $y = -1$

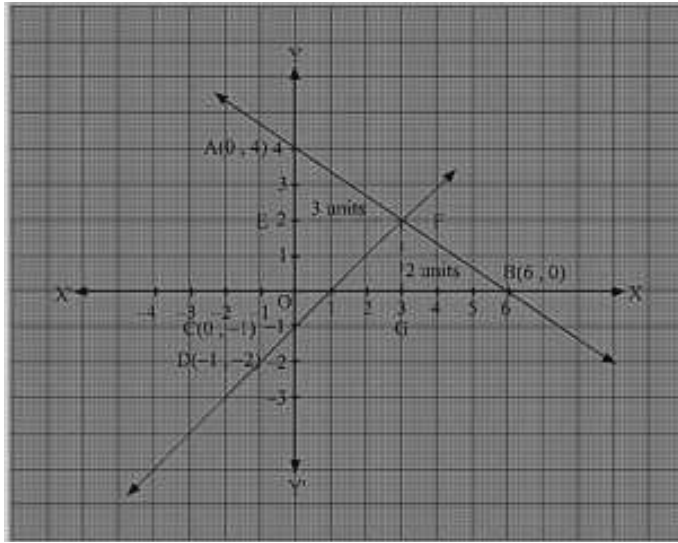
Substituting x in $y=x-1$,

we get $y = -2$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	-1
Y	-1	-2

Plotting D(0,) and E(-1,0) on the graph and by joining the points , we obtain the graph of equation $x - y = 1$.



By the intersection of lines formed by $2x + 3y = 12$ and $x - y = 1$ on the graph, triangle ABC is formed on y axis.

Therefore, AC at y axis is the base of triangle ABC having AC = 5 units on y axis.

Draw FE perpendicular from F on y axis. FE parallel to x axis is the height of triangle ABC having FE = 3 units on x axis.

Therefore, Area of triangle ABC, say A is given by $A = (\text{Base} \times \text{Height})/2 = (AC \times FE)/2 = (5 \times 3)/2 \Rightarrow 15/2 = 7.5$ sq. units

Q 18 : Draw the graphs of the linear equations $4x - 3y + 4 = 0$ and $4x + 3y - 20 = 0$. Find the area bounded by these lines and x-axis.

A18 :

We are given, $4x - 3y + 4 = 0$

We get, $y = \frac{4x+4}{3}$

Now, substituting $x = 0$ in $y = \frac{4x+4}{3}$, we get

Substituting $x = -1$ in $y = \frac{4x+4}{3}$

we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

x	0	-1
y	4/3	0

Plotting $E(0, 4/3)$ and $A(-1, 0)$ on the graph and by joining the points, we obtain the graph of equation

$4x - 3y + 4 = 0$.

We are given, $4x + 3y - 20 = 0$

We get,

$$y = \frac{20-4x}{3}$$

Now, substituting $x = 0$ in $y = \frac{20-4x}{3}$, we get

$$y = 7$$

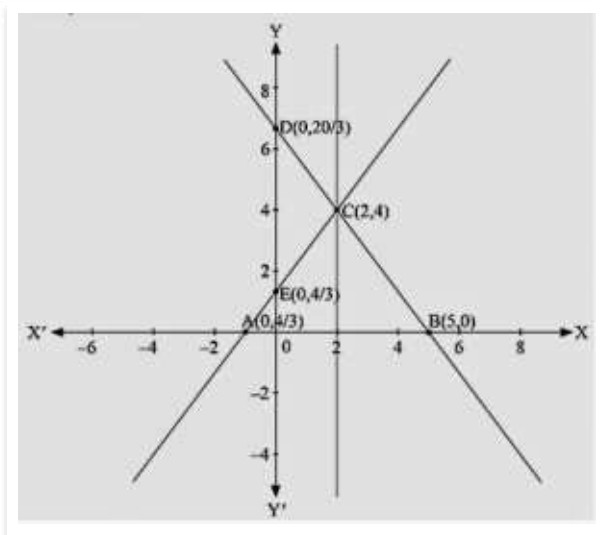
Substituting $x = 5$ in $y = \frac{20-4x}{3}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	5
Y	20/3	0

Plotting D (0,20/3) and B(5,0) on the graph and by joining the points , we obtain the graph of equation $4x + 3y - 20 = 0$.



By the intersection of lines formed by $4x-3y + 4 = 0$ and $4x+ 3y - 20 = 0$ on the graph,

Triangle ABC is formed on x axis. Therefore, AB at x axis is the base of triangle ABC having $AB = 6$ units on x axis.

Draw CF perpendicular from C on x axis.

CF parallel to y axis is the height of triangle ABC having $CF = 4$ units on y axis.

Therefore, Area of triangle ABC, say A is given by

$$A = (\text{Base} \times \text{Height})/2$$

$$A = (AB \times CF)/2$$

$$A = (6 \times 4)/2$$

$$k = 12 \text{ sq. units}$$

Q19 : The path of a train A is given by the equation $3x + 4y - 12 = 0$ and the path of another train B is given by the equation $6x + 8y - 48 = 0$. Represent this situation graphically.

A19:

We are given the path of train A, $3x + 4y - 12 = 0$

We get,

$$y = \frac{12-3x}{4}$$

Now, substituting $x = 0$ in $y = \frac{12-3x}{4}$, we get

$$Y=3$$

Substituting $x = 4$ in $y = \frac{12-3x}{4}$, we get

$$y = 0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	4
Y	3	0

Plotting A(4,0) and E(0,3) on the graph and by joining the points , we obtain the graph of equation $3x+4y-12 = 0$.

We are given the path of train B,

$$6x + 8y - 48 = 0$$

$$\text{We get, } y = \frac{48-6x}{8}$$

Now, substituting $x = 0$ in $y = \frac{48-6x}{8}$,we get

$$y=6$$

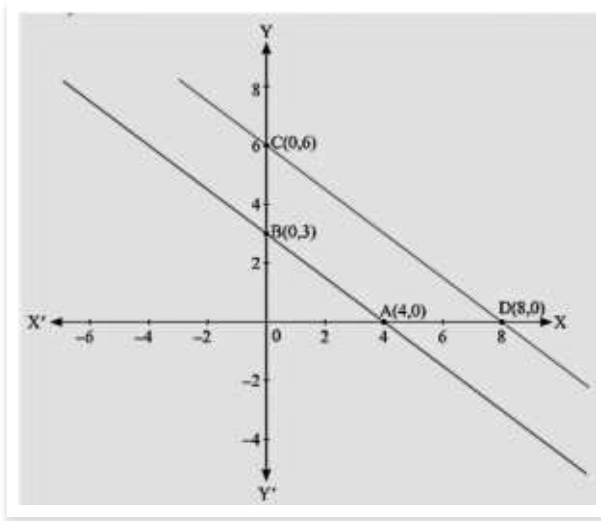
Substituting $x = 8$ in $y = \frac{48-6x}{8}$, we get

$$y=0$$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	8
Y	6	0

Plotting C(0,6) and D(8,0) on the graph and by joining the points , we obtain the graph of equation $6x+8y-48=0$



Q 20 : Ravish tells his daughter Aarushi, “Seven years ago, I was seven times as old as you were then. Also, three years from now, I shall be three times as old as you will be”. If present ages of Aarushi and Ravish are x and y years respectively, represent this situation algebraically as well as graphically.

A20:

We are given the present age of Ravish as y years and Aarushi as x years.

Age of Ravish seven years ago = $y - 7$

Age of Aarushi seven years ago = $x - 7$

It has already been said by Ravish that seven years ago he was seven times old then Aarushi was then

So, $y - 7 = 7 (x - 7)$

$$Y - 7 = 7 x - 49$$

$$7x - y = - 7 + 49$$

$$7x - y - 42 = 0 \quad \text{---(1)}$$

Age of Ravish three years from now = $y + 3$

Age of Aarushi three years from now = $x + 3$

It has already been said by Ravish that three years from now he will be three times older then Aarushi will be then
So,

$$Y + 3 = 3 (x + 3)$$

$$y + 3 = 3x + 9$$

$$3x + 9 - y - 3 = 0$$

$$3x - y + 6 = 0 \quad \text{---(2)}$$

(1) and (2) are the algebraic representation of the given statement.

We are given,

$$7x - y - 42 = 0$$

We get,

$$Y = 7x - 42$$

Now, substituting $x = 0$ in $y = 7x - 42$,

we get $y = -42$

Substituting $x = 6$ in $y = 7x - 42$,

we get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	6
Y	-42	0

We are given,

$$3x - y + 6 = 0$$

We get,

$$Y = 3x + 6$$

Now, substituting $x=0$ in $y = 3x + 6$,

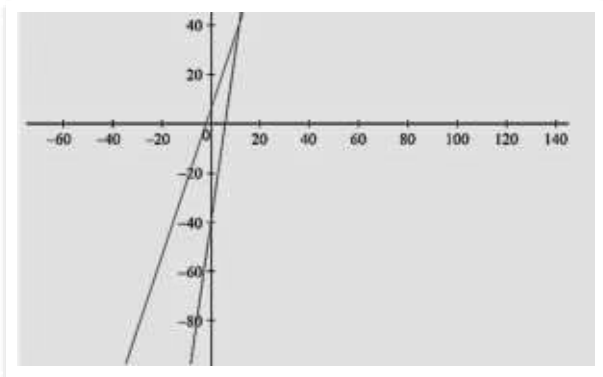
We get $y = 6$

Substituting $x = -2$ in $y = 3x + 6$,

We get $y = 0$

Thus, we have the following table exhibiting the abscissa and ordinates of points on the line represented by the given equation

X	0	-2
Y	6	0



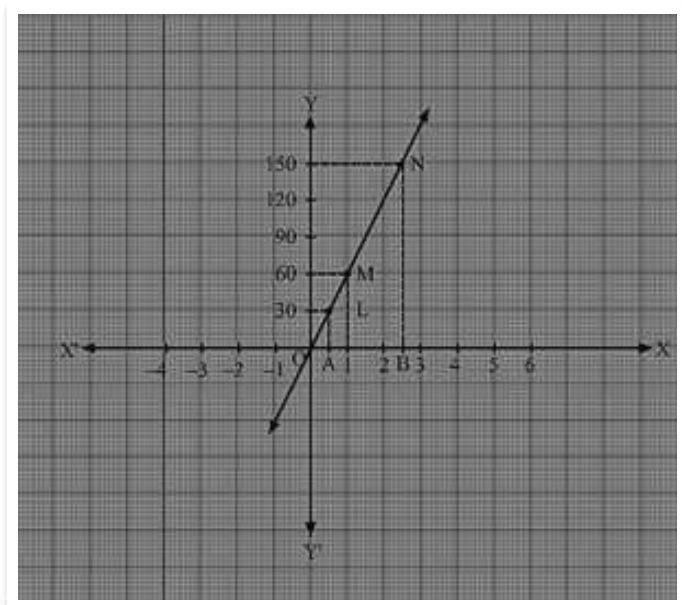
The red -line represents the equation $7x - y - 42 = 0$.

The blue-line represents the equation $3x - y + 6 = 0$.

Q21: Aarushi was driving a car with uniform speed of 60 km/h. Draw distance-time graph From the graph, find the distance travelled by Aarushi in (i) $2\frac{1}{2}$ Hours (ii) $\frac{1}{2}$ Hour

A21:

Aarushi is driving the car with the uniform speed of 60 km/h. We represent time on X-axis and distance on Y-axis
Now, graphically



We are given that the car is travelling with a uniform speed 60 km/hr. This means car travels 60 km distance each hour. Thus the graph we get is of a straight line.

Also, we know when the car is at rest, the distance travelled is 0 km, speed is 0 km/hr and the time is also 0 hr. Thus, the given straight line will pass through O (0 , 0) and M (1 , 60).

Join the points O and M and extend the line in both directions.

Now, we draw a dotted line parallel to y-axis from $x = 2$ that meets the straight line graph at L from which we draw a line parallel to x-axis that crosses y-axis at 30. Thus, in 2hr, distance travelled by the car is 30 km.

Now, we draw a dotted line parallel to y-axis from $x = 3$ that meets the straight line graph at N from which we draw a line parallel to x-axis that crosses y-axis at 150. Thus, in 3hr, distance travelled by the car is 150 km.

(i) Distance = Speed x Time Distance travelled in $2\frac{1}{2}$ hours is given by

$$\text{Distance} = 60 \times 2\frac{1}{2}$$

$$\text{Distance} = 60 \times \frac{5}{2}$$

$$\text{Distance} = 150 \text{ Km}$$

(ii) Distance = Speed x Time Distance travelled in $\frac{1}{2}$ hour is given by

$$\text{Distance} = 60 \times \frac{1}{2}$$

$$\text{Distance} = 30 \text{ km}$$