UNIT 9 LINEAR GRAPHS

SHORT QUESTIONS

Q.1- Find three points on the line whose equation is $y = 2x$

Solution:-

The given equation is $y = 2x$

For $x = 0$, $y = 2(0) = 0$

$\Rightarrow (0,0)$ is on the line.

For $x = 1$, $y = 2(1) = 2$

$\Rightarrow (1,2)$ is on the line.

For $x = 2$, $y = 2(2) = 4$

$\Rightarrow (2,4)$ is on the line.

Thus $(0,0),(1,2),(2,4)$ satisfy the equation $y = 2x$.

Q.2- Construct the table and draw the line whose equation is $y = 2x + 1$

Solution:-

Let us consider the equation $y = 2x + 1$

When $x = -2,\ y = 2(-2) + 1 = -3$

$x = -1,\ y = 2(-1) + 1 = -1$

$x = 0,\ y = 2(0) + 1 = 1$

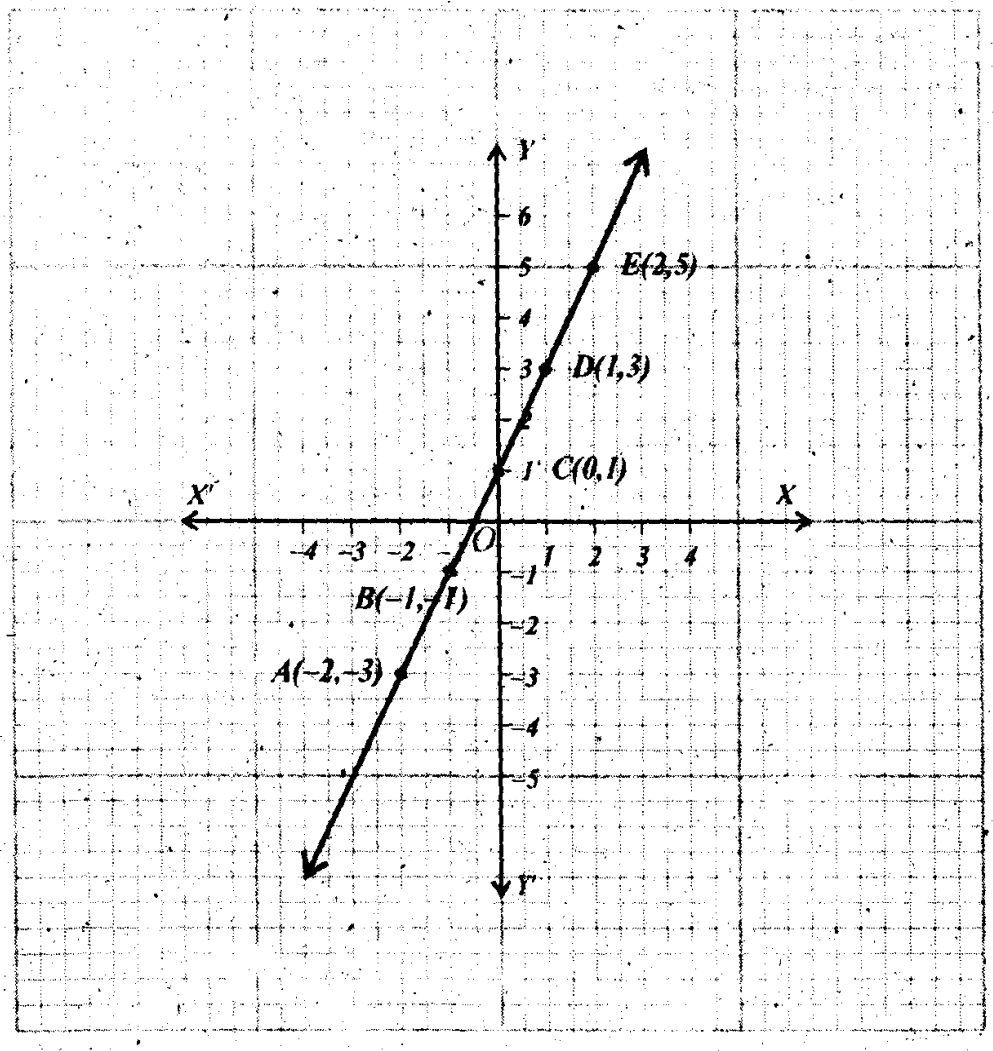
$x = 1,\ y = 2(1) + 1 = 3$

$x = 2,\ y = 2(2) + 1 = 5$

The following table shows five pairs of values of x and y mentioned above.

x	-2	-1	0	1	2
$y = 2x + 1$	-3	-1	1	3	5

We use 2 small squares $= 1$, along both x and y-axis.



Q.3- Draw the graph of $y = 2x + 6$.

Solution:-

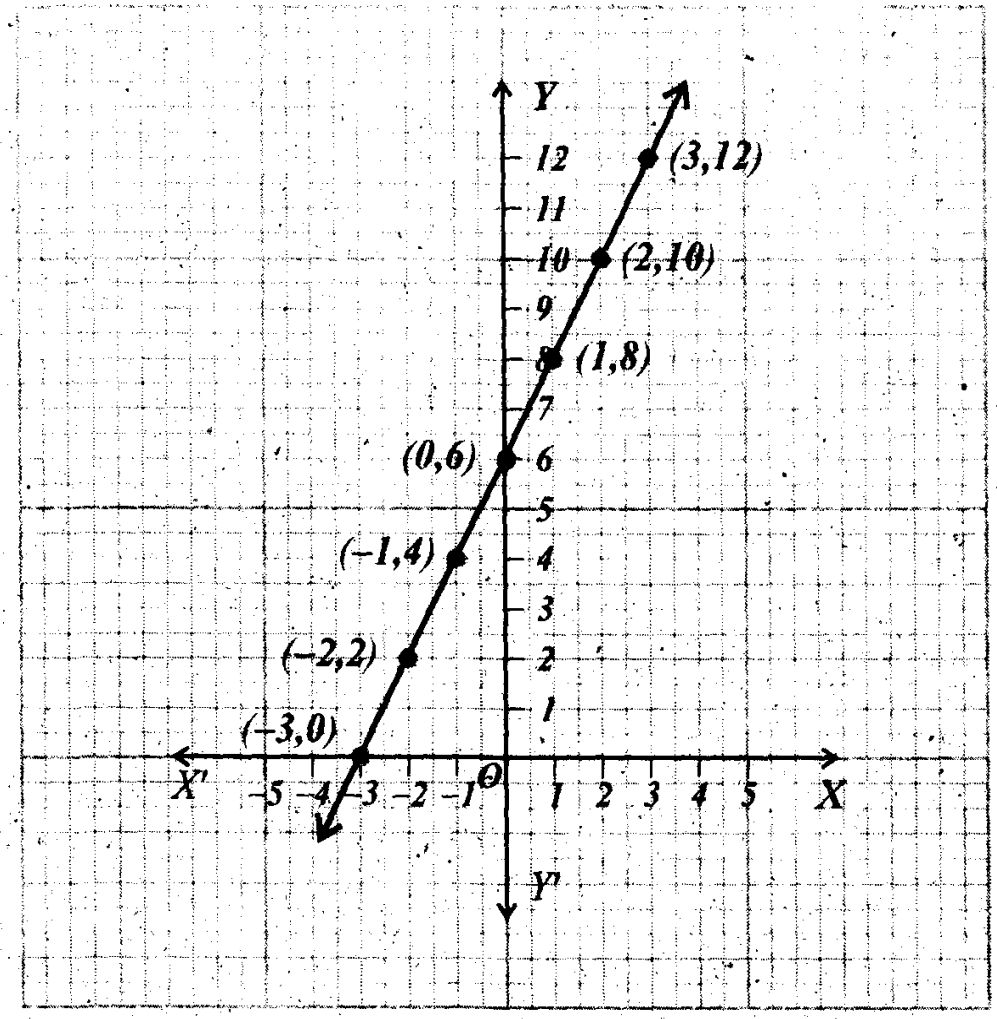
If we put $x = 0$ in $y = 2x + 6$

We get $y = 2(0) + 6 = 6$ i. e $y = 6$

Similarly putting $x = \pm 1, \pm 2, \pm 3, ...$

We get the value of y as shown in the table.

x	-3	-2	0	1	2	3
y	0	2	6	8	10	12



Q.4- Graph the equation $x = -2$

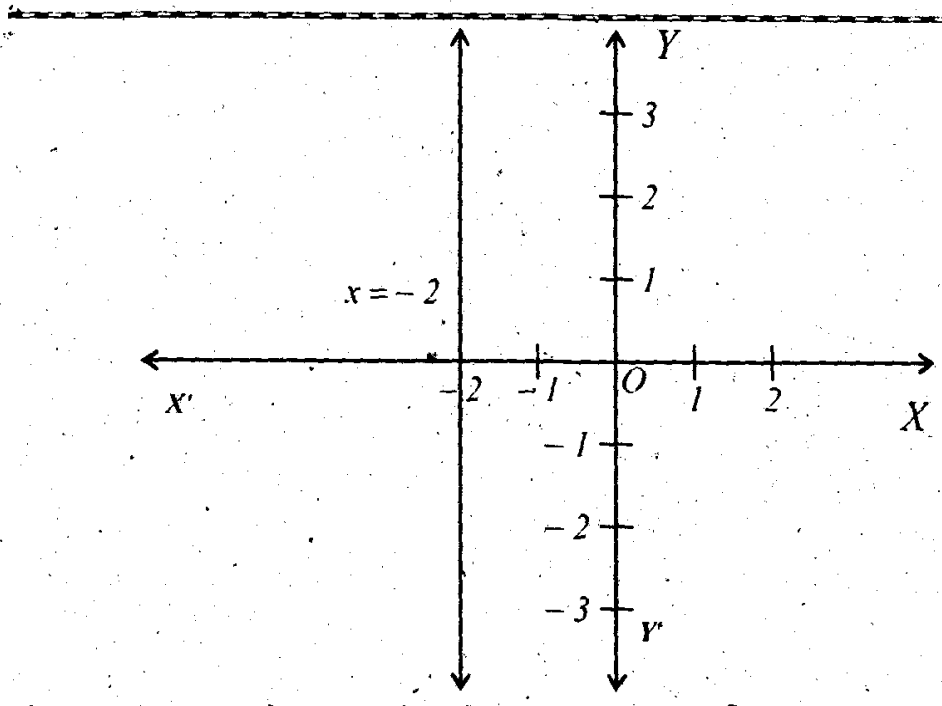
Solution:-

The equation $x = -2$ can be written as $x + 0y = -2$, if we put $y = 0$ in this equation, we get $x = -2$. Similarly putting $y = \pm 1, \pm 2, \pm 3, \ldots$ in the equation $x = +0$, $y = -2$, we have $x = -2$.

For all values of y we have $x = -2$, i.e. x remains constant.

Table of values of x and y is as under:

x	-2	-2	-2	-2	-2	-2	-2
y	-3	-2	-1	0	1	2	3

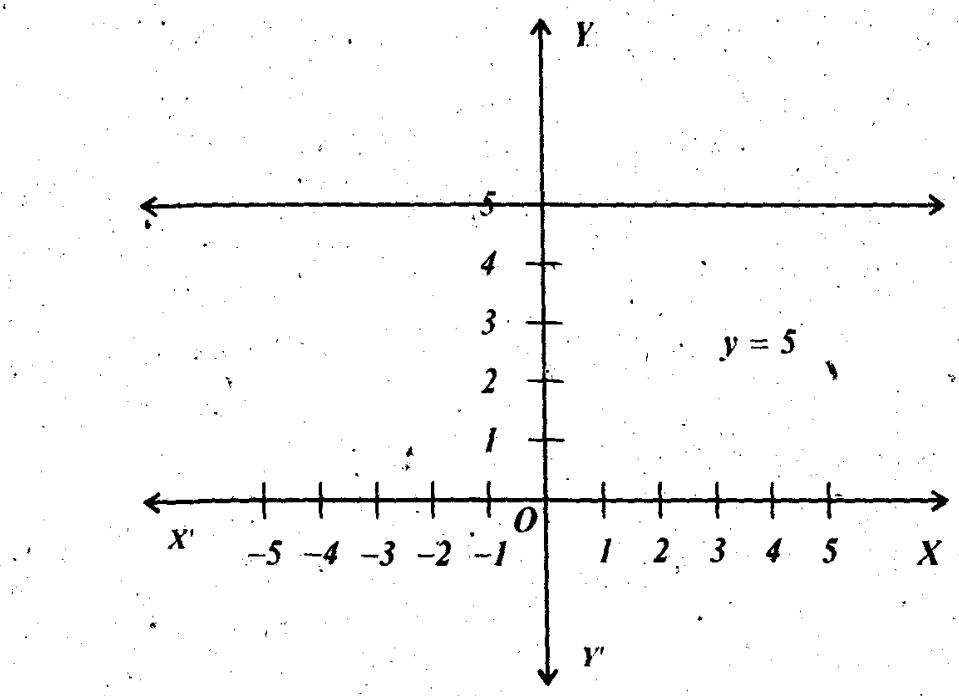


Q.5- Draw the graph of equation $y = 5$

Solution:-The equation $y = 5$ can be written as $y = 0 \times x + 5$

If we put $x = 0$ in the equation we get $y = 5$. Similarly putting $x = \pm 1, \pm 2, \pm 3, \ldots$ in the equation $y = 0$, $x + 5$, we have $y = 5$. For all values of x We have $y = 5$, i.e. y remains constant. Table of value of x and y is as under:

x	-3	-2	-1	0	1	2	3
y	5	5	5	5	5	5	5



Q.6- Define Domain and Range of a linear funtion.

Ans. A funtion is a set of ordered pair of the kind (x, y) where $x, y \in R$. The set of all suitable values of x is called Domain and the set of all suitable values of y is called Range of the function. Usually, in case of linear funtion.

Domain of funtion = Range of funtion.

And both of these are equal to the set of real numbers.

Q.7- Define integral subset of domain and integral subset of Range of a funtion.

Ans. The set of only suitable integral values of x for a linear function is called integral subset of Domain of the funtion.

Q.8- Draw the graph of $y = 2x + 1$ and find integral subsets of Domain and Rang of given funtion.

Solution:

The graph shown in the figure is of a function $y = 2x + 1$. This graph has been drawn with the help of the following ordered pairs. $A(-2, -3)$, $B(-1, -1)$ $C(0, 1)$, $D(1, 3)$ and $E(2, 5)$.

From these ordered pairs we construct a table consisting the value of x and y.

x	-2	-2	0	1	2
y	-3	-1	1	3	5

In a function $y = 2x + 1$, the set consisting of the values of x is called the domain and the set consisting the values of y is called the range of the function.

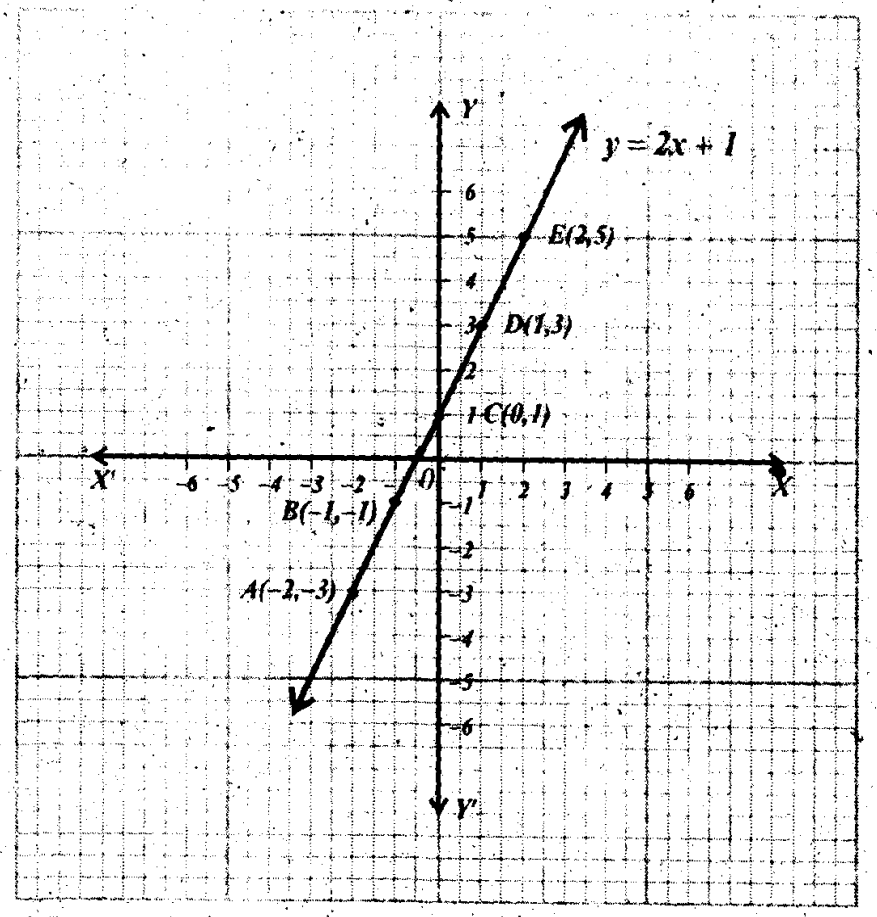
Thus for $y = 2x + 1$:

Integral subset of Domain of function

$= \{..., -2, -1, 0, 1, 2, ...\}$

Integral subset of Range of function

$= \{..., -3, -1, 1, 3, 5, ...\}$



Q.9- What is meant by converssion graph?

Ans. Two different units of a single physical quantity can be intercoverted by a simple linear graph. The straight line used for this purpose is called the converssion graph.

Q.10- Define the term "Ordered Pair".

Ans. An ordered pair is a set of two elements in which order of elements is also important. Ordered pair of x and y is denoted as. (x,y)

Note that for two sets

$\{x, y\} = \{y, x\}$, but $(x, y) \neq (y, x)$

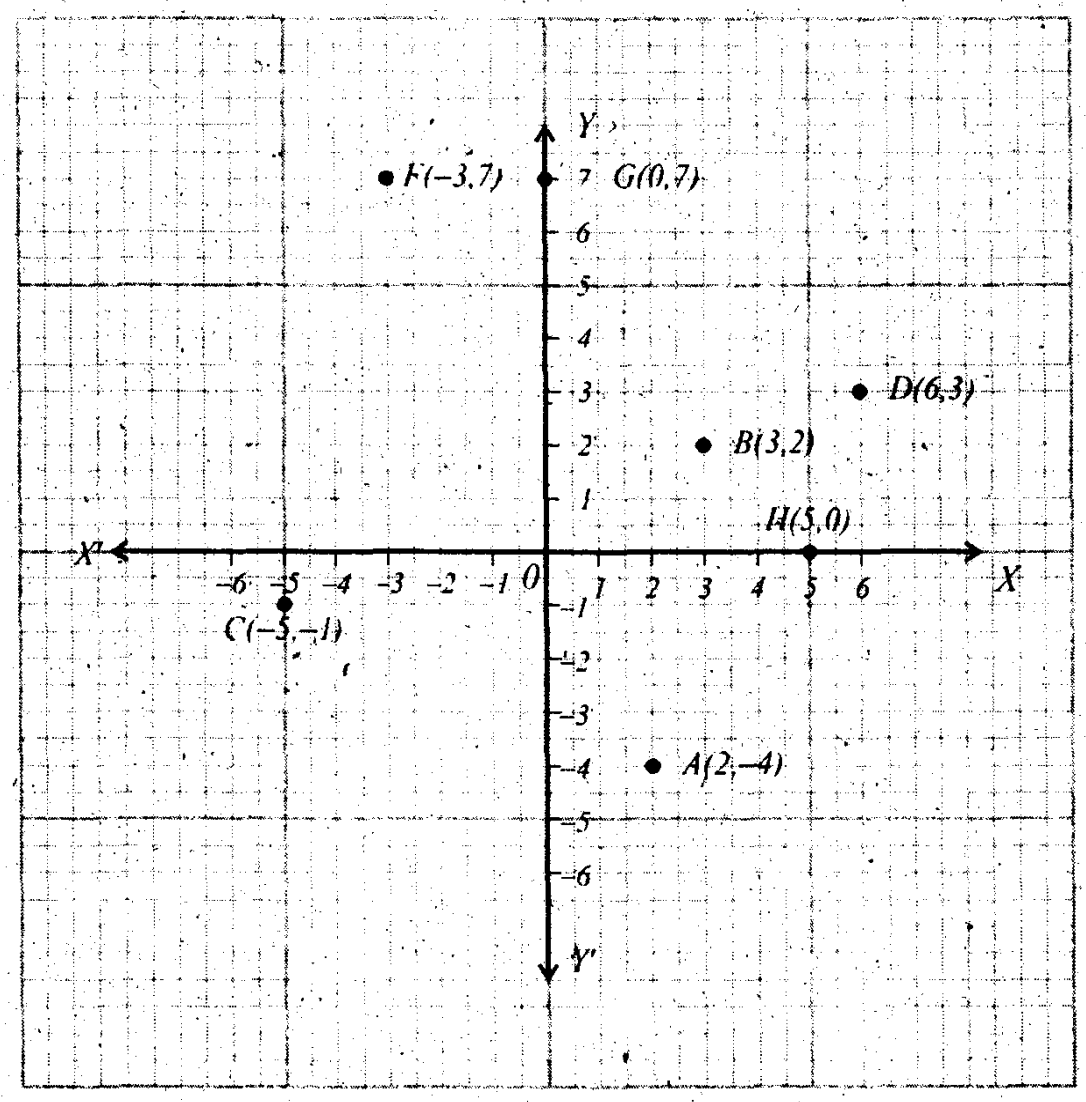
SOLVED EXERCISES

EXERCISE 9.1

Q.1- Represent the points on the graph whose co-ordinates are given below.

(i)	A(2, –4)	*(ii)*	B(3,2)
(iii)	C(–5,–1)	*(iv)*	D(6,3)
(v)	B(3,2)	*(vi)*	F(–3,7)
(vii)	G(0,7)	*(viii)*	H(5,0)

Solution:



Q.2- Write down the co-ordinates of:

(i) **Origin**

Ans. Co-ordinates of Origine $=(0,0)$

(ii) **A point lying on the left hand side of x-axis and at a distance of 5 units from the origine.**

Ans. A point lying on left side of Origene on *x-axis* 5 units from Origine $=(-5,0)$

(iii) **A point lying on the right hand side of the origine on x-axis at a distance of 3 units from the origine.**

Ans. A point on right side of Origine on *x-axis* at a distance of *3* units from the Origine $=(3,0)$

(vi) **A point lying above x-axis and on y-axis at a distance of 4 units.**

Ans. A point above *x-axis* on *y-axis* at a distance of *4* units from Origine $=(0,4)$

(v) **A point lying below x-axis and on y-axis at a distance of 6 units.**

Ans. A point below *x-axis* and on *y-axis* 6 unit from Origine $=(0,-6)$

Q,3- Draw the figures with help of the following points on the graph paper.

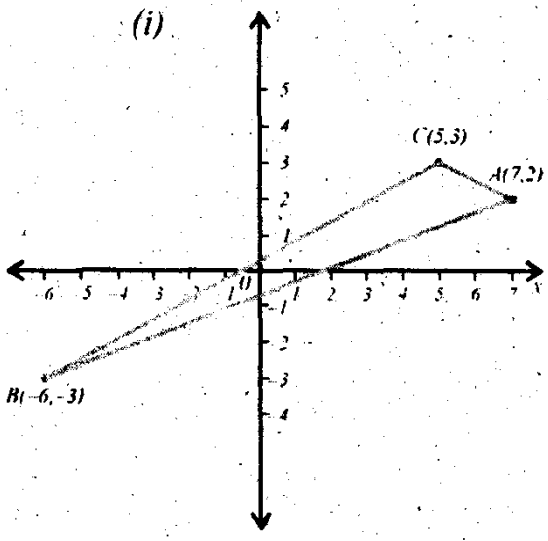
(i) **A(7, 2), B(–6,–3), C(5,3)**

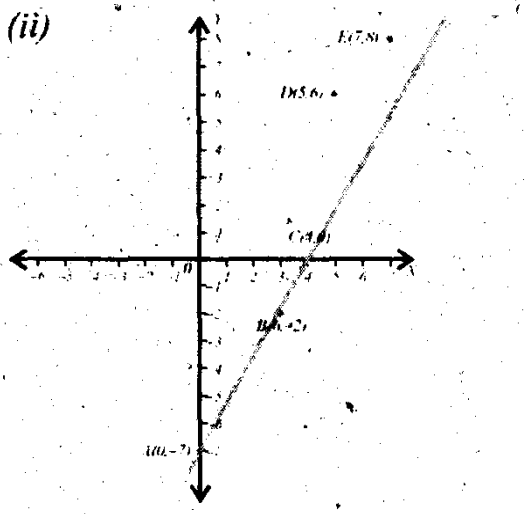
(ii) **A(0, –7), B(3,–2), C(4,0), D(5,6) E(7,8)**

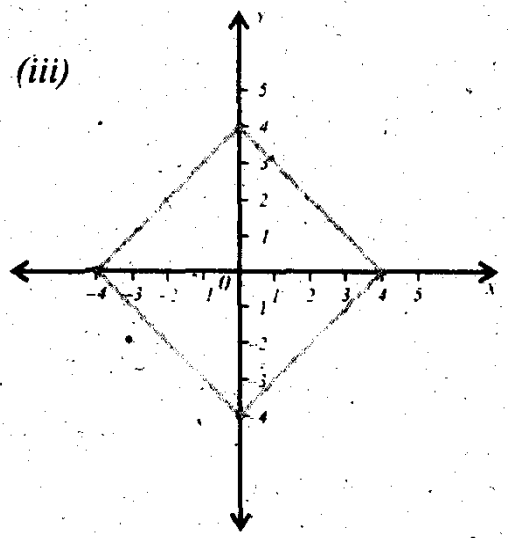
(iii) **A(4, 0), B(0,4), C(–4,0) D(0,–4)**

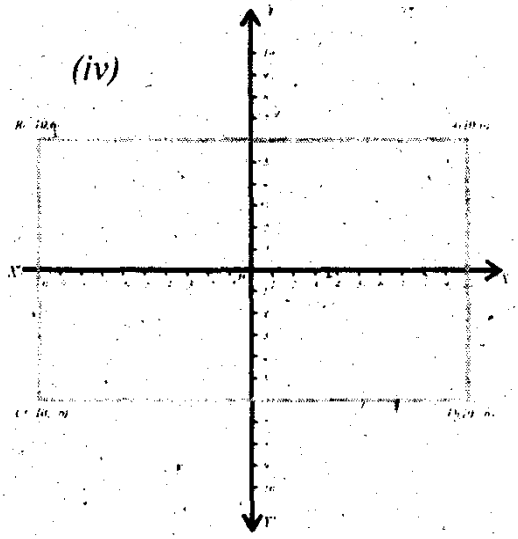
(iv) **A(10, 6), B(–10,6), C(–10,–6) D(10,–6)**

Ans.









EXERCISE 9.2

Q.1- Draw the graph of $y = 3x$

Solution:

In the given equation put

$x = -3, -2, -1, 0, 1, 2, 3$

We get the values of y as:

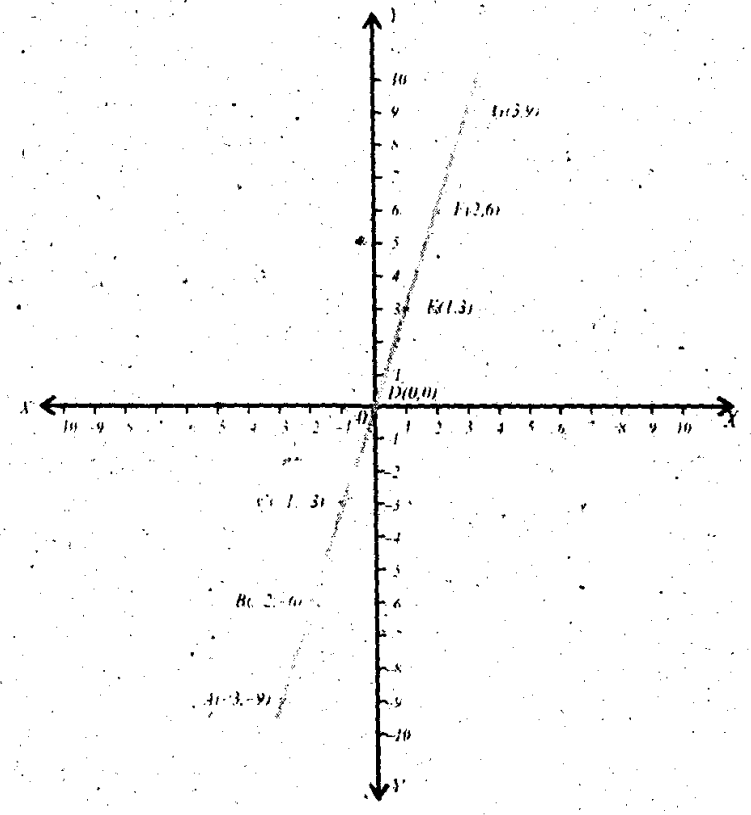
$y = -9, -6, -3, 0, 3, 6, 9$

So, We construct the table.

x	-3	-2	-1	0	1	2	3
y	-9	-6	-3	0	3	6	9

So locate the points

$(-3,-9),(-2,-6),(-1,-3),(0,0),(1,3),(2,6)$ and $(3,9)$ on the graph paper and join them to get a straight line as the required graph.



Q.2- Draw the graph of $y = x + 7$

Solution:

Replace x by the numbers $-4, -3, -2, -1, 0, 1, 2,$

We get the values of y as $3, 4, 5, 6, 7, 8, 9.$

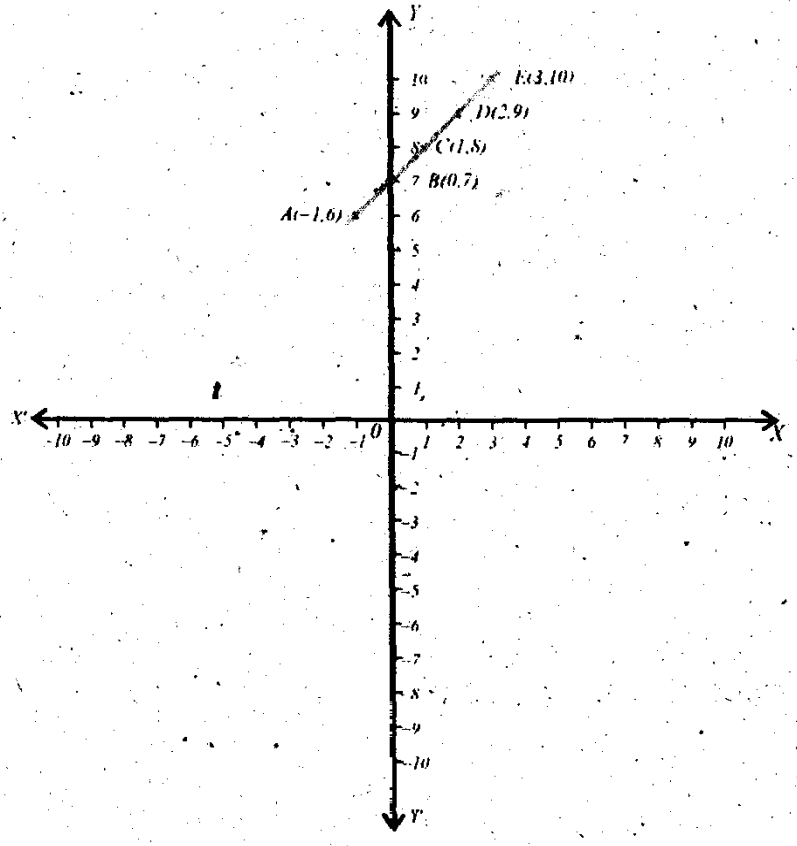
So, We get the table.

x	-4	-3	-2	-1	0	1	2
y	3	4	5	6	7	8	9

On the graph paper locate the points

$(-4,3),(-3,4),(-2,5),(-1,6),(0,7),(1,8),(2,9)$

and jion them to get the required strainght line.



Q.3- Draw the graph of $y = 2x - 3$

Solution:

In the given equation put the values of x.

$x = -3, -2, -1, 0, 1, 2, 3, 4, 5.$

We will get the values of y as:

$y = -9, -7, -5, -3, -1, 0, 1, 3, 5, 7$

Now we have the table.

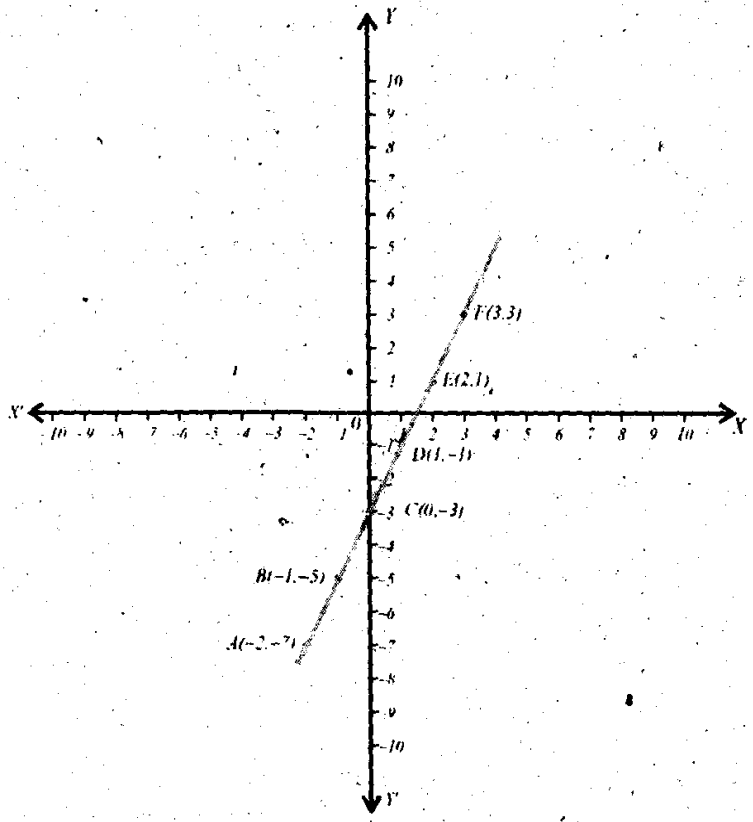
x	-3	-2	-4	0	1	2	3	4	5
y	-9	-7	-5	-3	-1	1	3	5	7

So the points on the line are

$(-3,-9),(-2,-7),(-1,-5),(0,-3),(1,-1),(2,1)$

$(3,3),(4,5),(5,7)$

Locate these points on the graph paper and draw the required strenght line.



Q.4- Draw the graph of $y = 4x + 1$

Solution:

Put the values of x in the given equation as:

$x = -2,-1,0,1,2,3$

We get $y = -7-3,1,5,9,13$

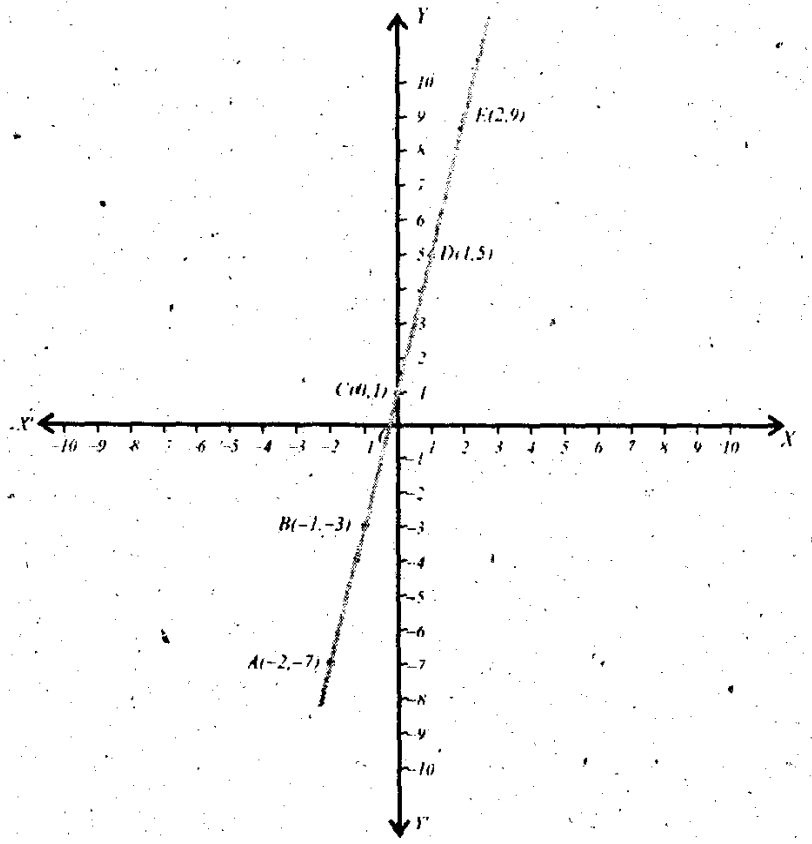
So the table of values is

x	-2	-1	0	1	2	3
y	-7	-3	1	5	9	13

The point on the graph are.

$(-2,-7),(-1,-3),(0,1),(1,5),(2,9)$ and $(3,13)$.

Draw these points on the graph and joint them to get the required line.



Q.5- Draw the graph of $y = -\frac{x}{2} - \frac{3}{2}$

Solution:

Replace x by numbers $-7, -5, -3, -1, 1, 3, 5$

We get the values of y as:

$y = 2, 1, 0, -1, -2, -3, -4$

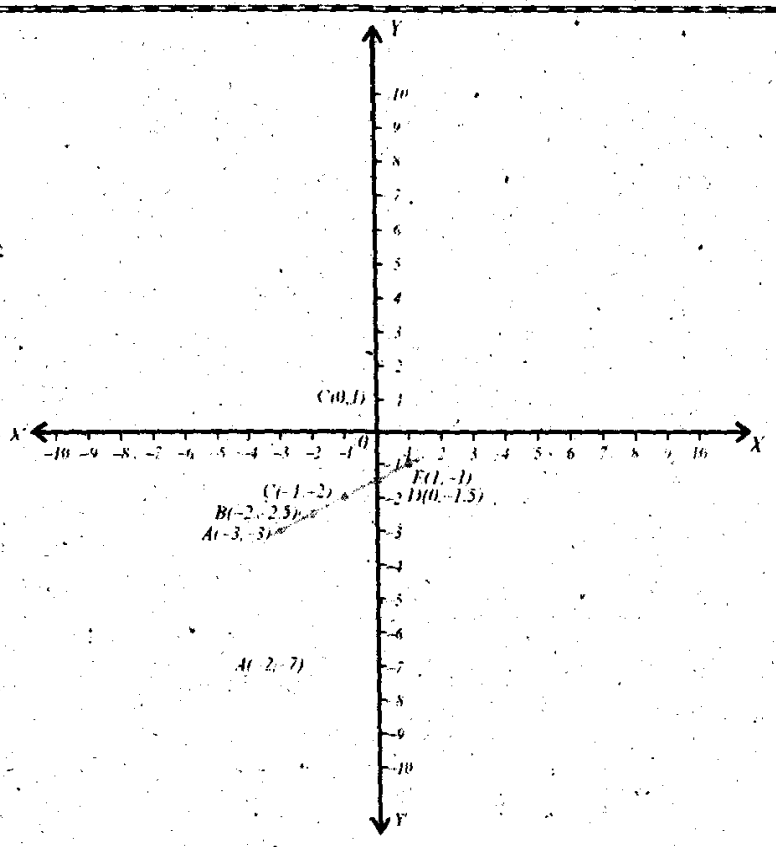
So, We get the table.

x	-7	-5	-3	-1	1	3	5
y	2	1	0	-1	-2	-3	-4

Thus the points on the line are.

$(-7,2),(-5,1),(-3,0),(-1,-1),(1,-2),(3,-3),(5,-4)$

Locate these points on graph and join them.



Q.6- Draw the graph of $y = x - 1$

Solution:

In the given equation.

Put $x = -2$ we get $y = -3$

Put $x = -1$ we get $y = -2$

Put $x = 0$ we get $y = -1$

For $x = 1$, $y = 0$

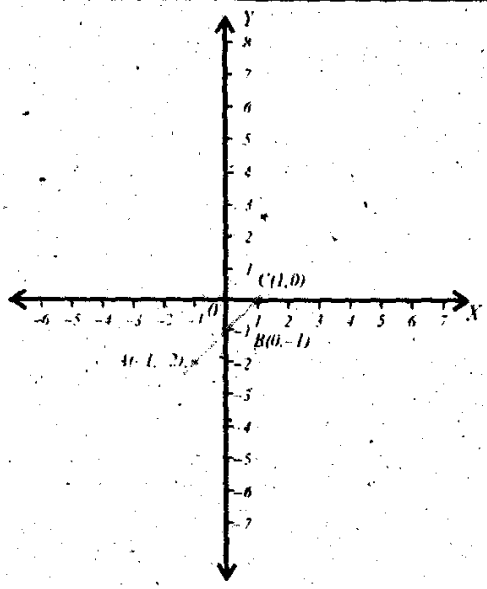
For $x = 2$, $y = 1$

For $x = 3$ $y = 2$

Thus the points on the line are

$(-1,-2),(0,-1),(1,0),(2,1),(3,2)$

Locate these points on the graph and join them.

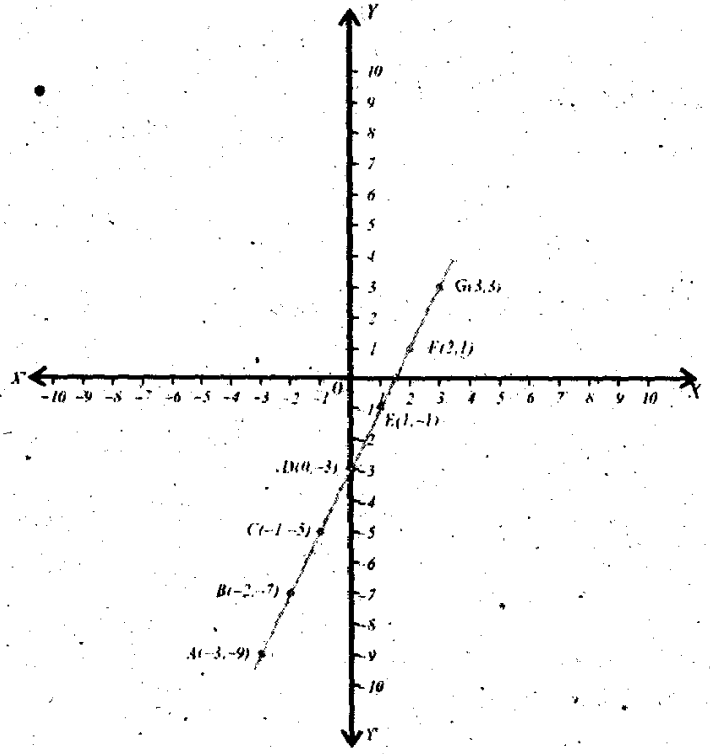


Q.7- Draw the graph of $y = 2x - 3$

Solution: Consider the equation $y = 2x - 3$

For $x = -2, y = -7 \Rightarrow (-2,-7)$ is on the line.
For $x = -1, y = -5 \Rightarrow (-1,-5)$ is on the line.
For $x = 0, y = -3 \Rightarrow (0,-3)$ is on the line.
For $x = 1, y = -1 \Rightarrow (1,-1)$ is on the line.
For $x = 2, y = 1 \Rightarrow (2,1)$ is on the line.
For $x = 3, y = 3 \Rightarrow (3,3)$ is on the line.

Thus locate these points on the graph and join them.



Q.8- Draw the graph of $y = 3x + 5$

Solution:

Consider the equation $y = 3x + 5$

For $x = -3, y = -4 \Rightarrow (-3, -4)$ is on the line.

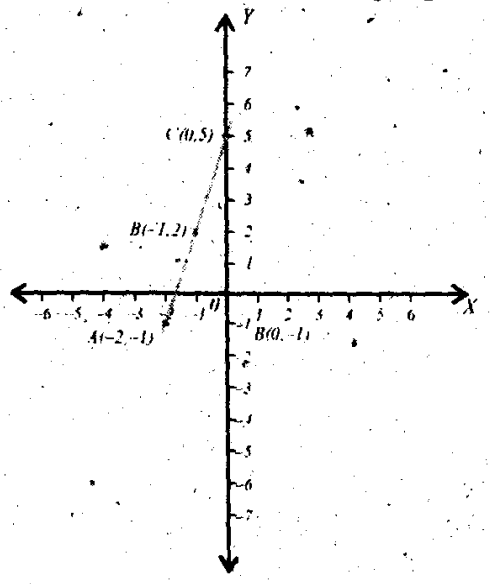
For $x = -2, y = -1 \Rightarrow (-2, -1)$ is on the line.

For $x = -1, y = 2 \Rightarrow (-1, 2)$ is on the line.

For $x = 0, y = 5 \Rightarrow (0, 5)$ is on the line.

For $x = 1, y = 8 \Rightarrow (1, 8)$ is on the line.

Now locate these points on the graph and join them.



Q.9- Draw the graph of $y = \frac{x}{2}$

Solution:

Consider the equation $y = \frac{x}{2}$

For $x = -4, y = -2 \Rightarrow (-4, -2)$ is on the line.

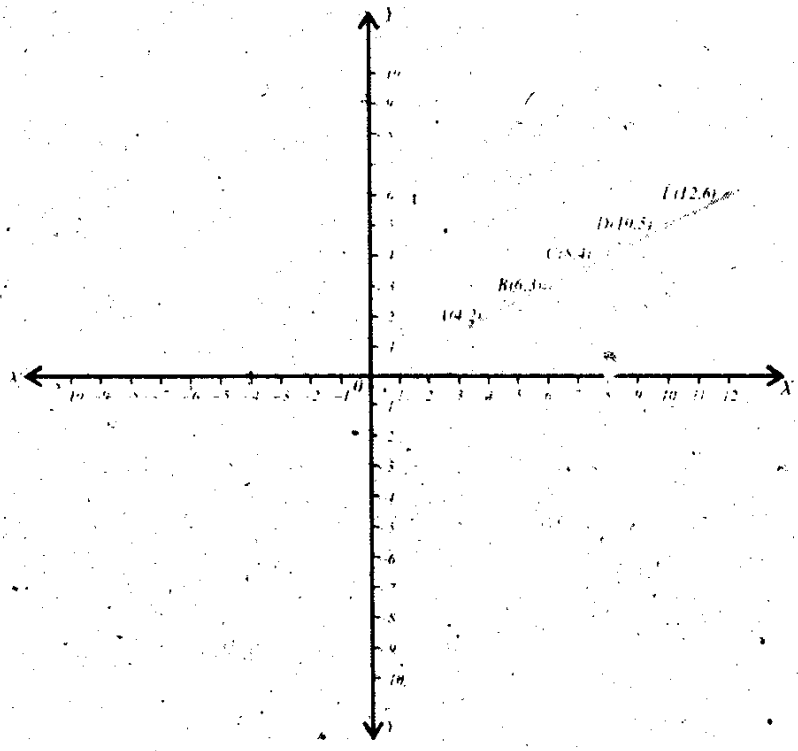
For $x = -2, y = -1 \Rightarrow (-2, -1)$ is on the line.

For $x = 0, y = 0 \Rightarrow (0, 0)$ is on the line.

For $x = 2, y = 1 \Rightarrow (2, 1)$ is on the line.

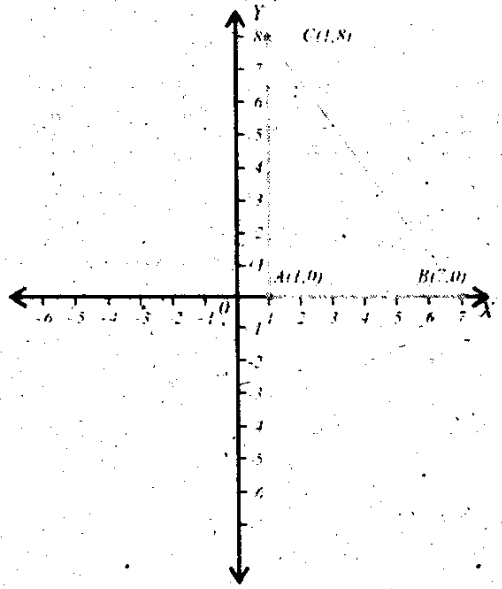
For $x = 4, y = 2 \Rightarrow (4, 2)$ is on the line.

Draw these points on the graph paper and join them.



Q.10- Draw the graph by plotting A(1,0), B(7,0) and C(1,8)

Solution:



Q.11- Draw the graph from the given tables.

(i)

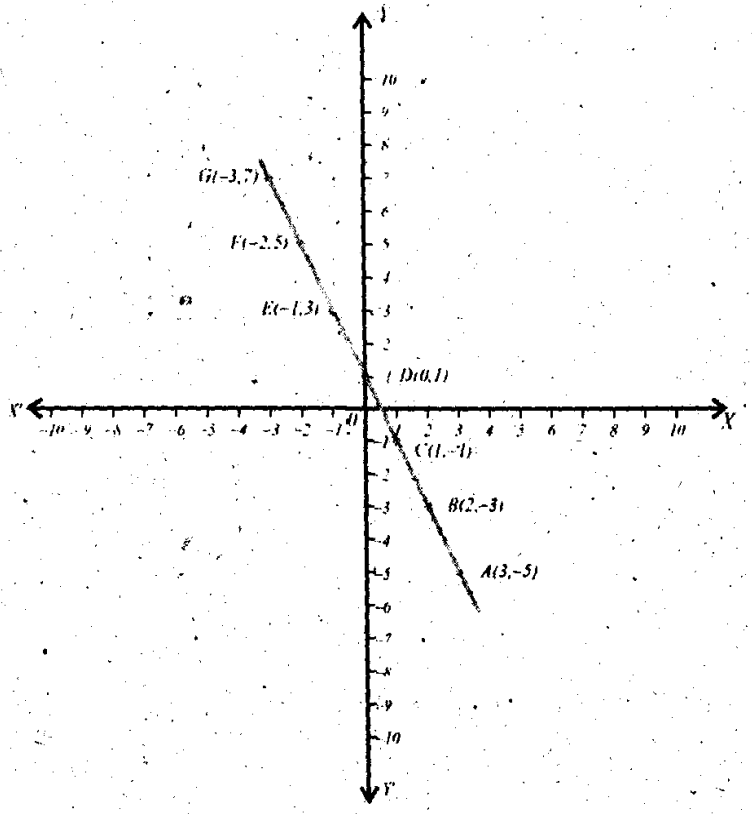
x	3	2	1	0	−1	−2	−3
y	−5	−3	−1	1	3	5	7

Solution: From the values of x and y given in the table.

We get the points

$(3,-5),(2,-3)(1,-1),(0,1),(-1,3),(-2,5),(-3,7)$

Draw these points on the graph and join them.



(ii)

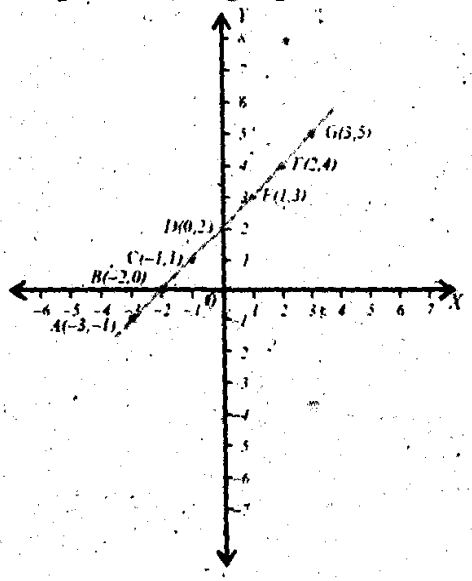
x	−3	−2	−1	0	1	2	3
y	−1	0	1	2	3	4	5

Solution: From the values of x and y given in the table.

We get the points

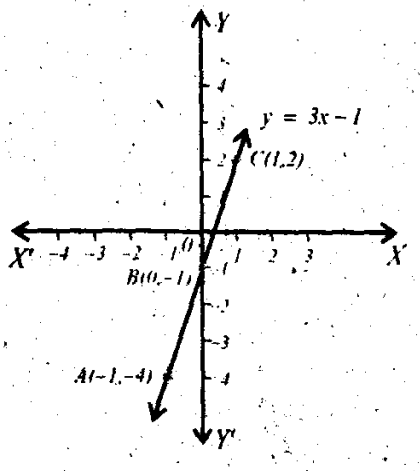
$(-3,-1),(-2,0),(-1,1)(0,2),(1,3),(2,4),(3,5)$

Locate these points on graph and draw the straight line



Identify through the given graphs the domain and the range of a function

Q.12-



Solution:

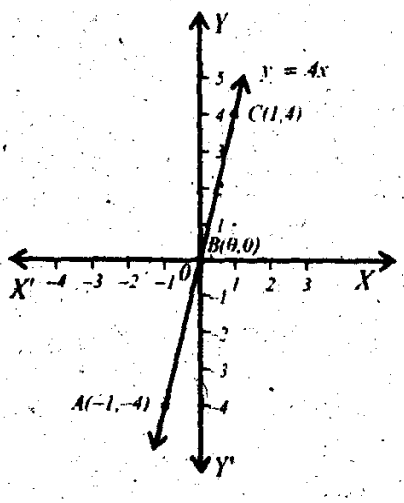
The integral subset of Domain =

The set of integral values of $x = \{..., -1, 0, 1...\}$

the integral sub set a range =

The set of integral values of $y = \{..., -4, -1, 2...\}$

Q.13-



Solution:

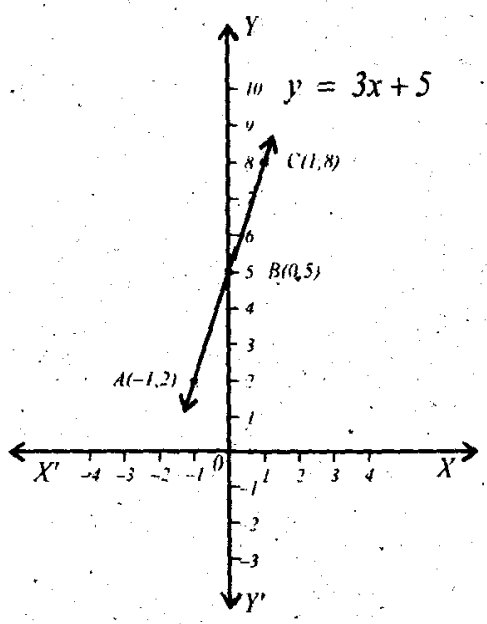
The integral subset of Domain =

The set of integral values of $x = \{..., -2, -1, 0, 1, 2...\}$

the integral sub set a range =

The set of integral values of $y = \{..., -4, 0, 4...\}$

Q.14-



Solution:

The integral subsets of Domain and range are.

The set of integral values of $x = \{..., -2, -1, 0, 1, 2...\}$

The set of integral values of $y = \{..., 2, 5, 8...\}$

EXERCISE 9.3

Q.1- The table gives temperatures in dgrees Fahrenheit ^{0}F and the equivalent values in degrees Centigrade ^{0}C.

Temperatures in ^{0}F	**57**	**126**	**158**	**194**
Temperatures in ^{0}C	**14**	**52**	**70**	**90**

Plot these points on a graph paper for centigrade values from 0 to 100 and Fahrenheit value from 0 to 220. Let 5 small squares represent 20 units on each axis. Use your graph to convert the following:

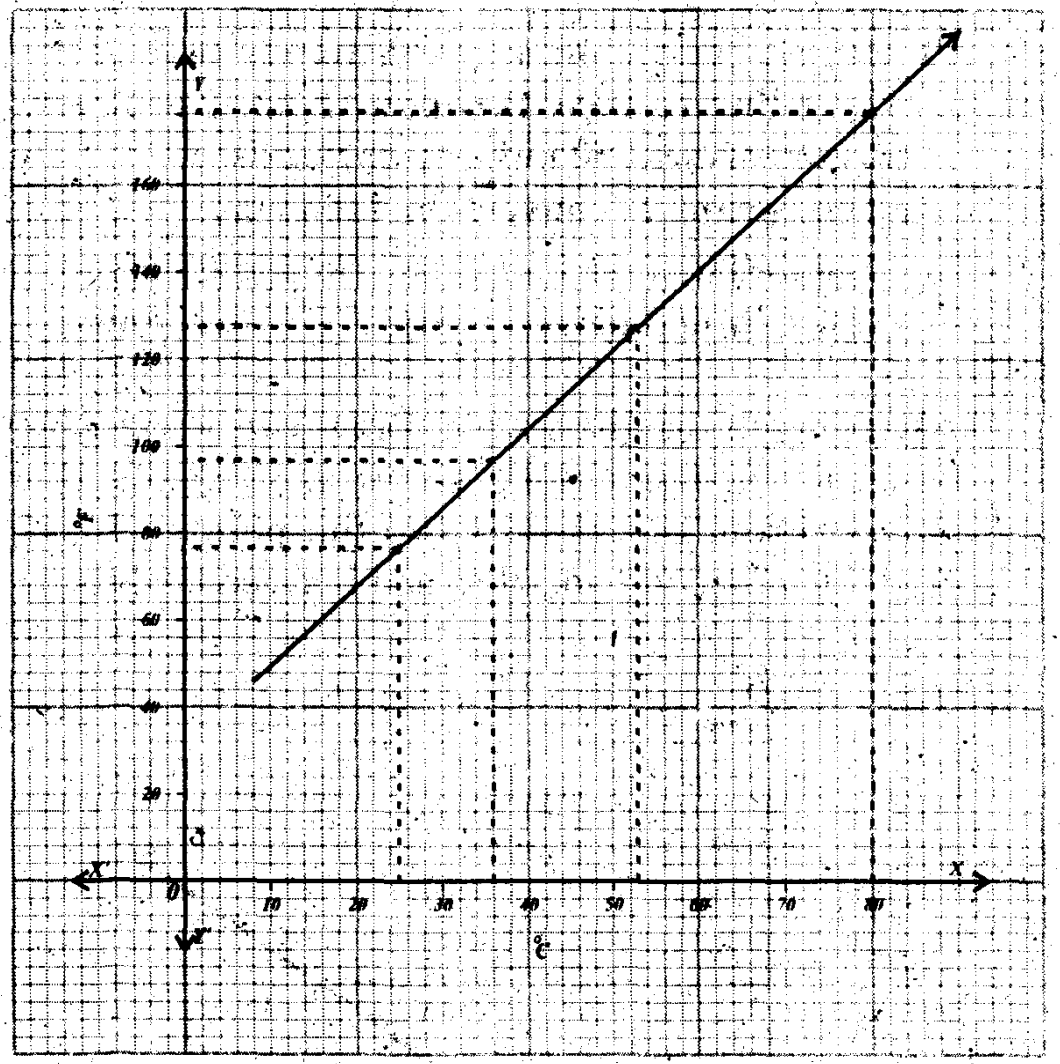
(a) **97 ^{0}F into ^{0}C** **(b)** **127 ^{0}F into ^{0}C**

(c) **25 ^{0}C into ^{0}F** **(d)** **80 ^{0}C into ^{0}F**

Solution:

According to the given scale, take Centigrade degree along *x-axis* and Fahrenheit values along *y-axis*.

The points *(14,57)*, *(52,126)*, *(70,158)* and *(90,194)* are given. Locate these points and joining them. Draw the straight line.



The graph shows that

(i) Corresponding to $97\ ^0F$, the points on the graph gives $(36.10)\ ^0C$

(ii) Similarly we can find $127\ ^0F = 52.8\ ^0C$

(iii) $25^0C = 77^0F$

(iv) $80^0C = 176^0F$

Q.2- The table shows the conversion from US Dollars ($) to Pounds (£) for various amounts of money.

$	50	100	200
£	35	70	140

Plot these points on a graph paper and draw a straight line to pass through them. Let 5 small squares represent 50 units on each exis.

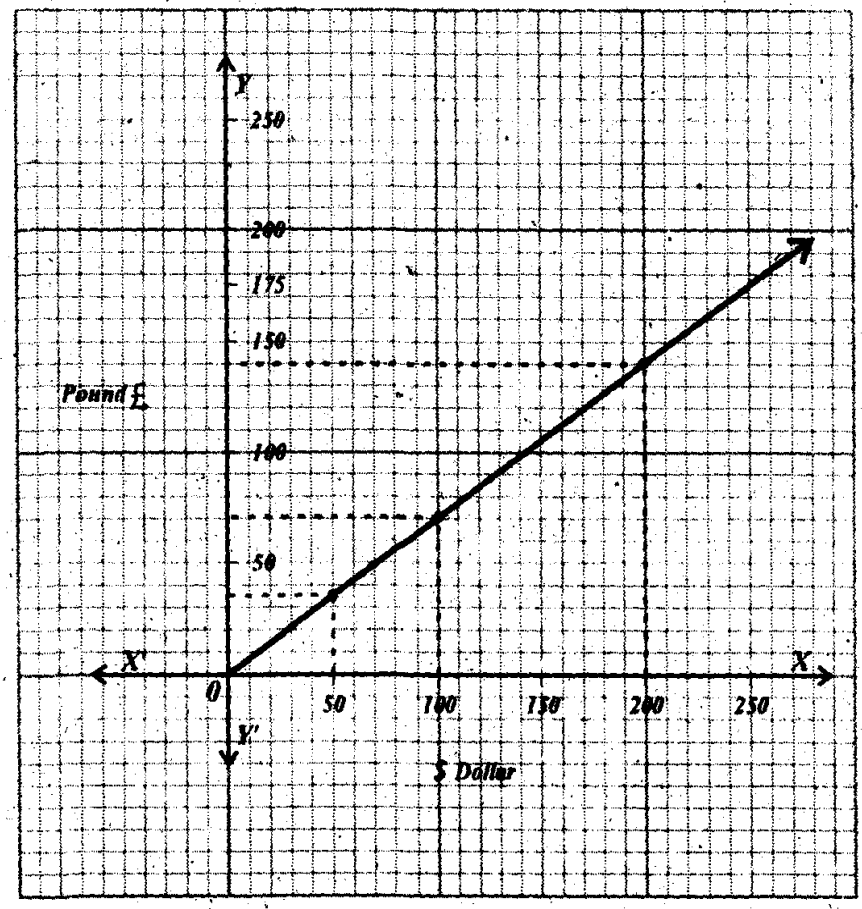
Use your graph to convert the following:

a) 160 dollars into £ **b) 96 dollars into £**

c) 120 £ into dollars **d) 76 £ into dollars**

Solution:

According to the given scale. Draw *x-axis* and *y-axis*, taking US Dollers along *x-axis* and Pounds along *y-axis*. From the given table the points *(50,35), (100,70), (200,140)* are taken and Located the line.



By this line Dollars and Pounds can be inter convertible.

(a) Corresponding to *160* dollars we nate the point *(160,112)*. So it means.

160 Dollars = *112* Pounds.

Similarly, with the help of this graph.

We see that

(b) *96* Dollars = *67.2* Pounds.

(c) *120* Pounds = *171.4* Dollars.

(d) *76* Pounds = *108.6* Dollars.

Q.3- The table below gives various distances in kilometers with the equivalent values in miles.

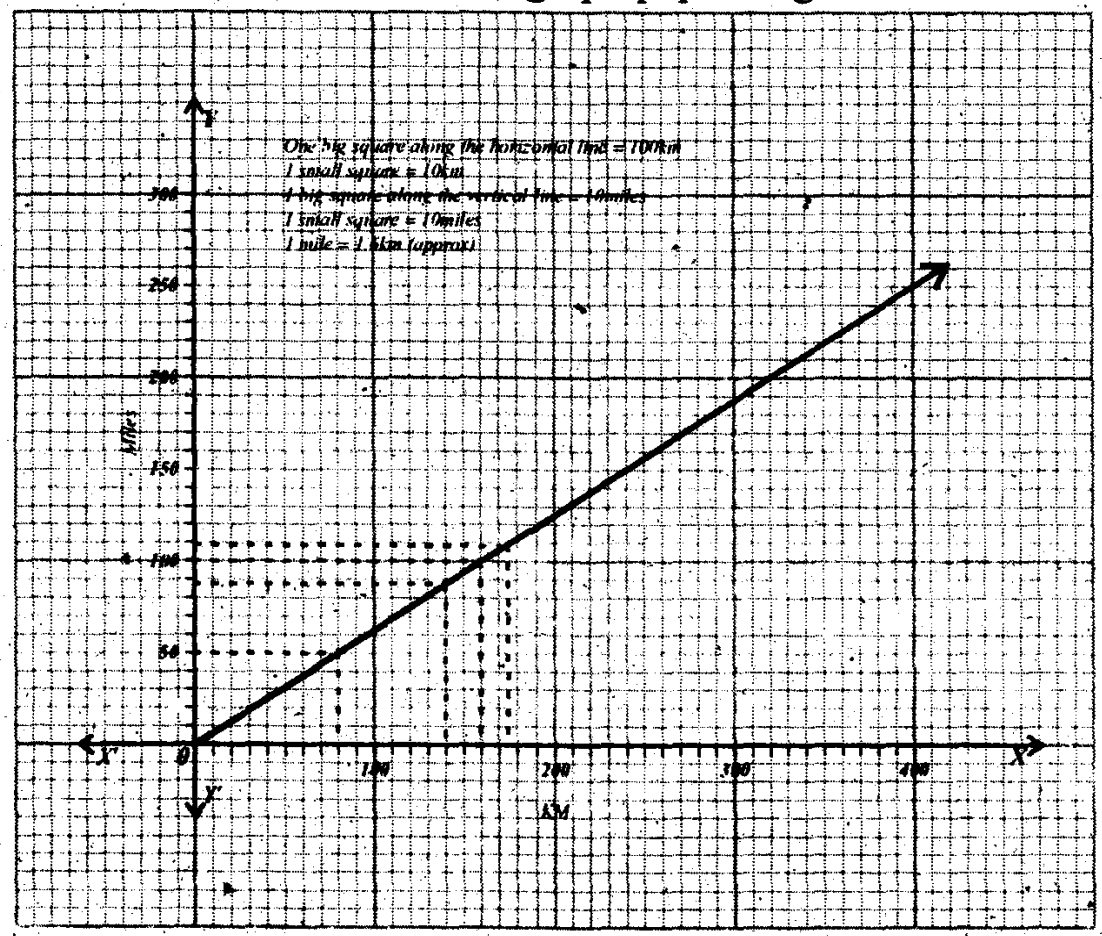
Kilometers	0	100	200	300
Miles	0	62.5	125	187.5

Plot these values on a graph paper taking 10 small squares equal to 100 kilometers on x-axis and 10 small squares equal to 100 miles on y-axis. Use your graph to convert the following:

a) 140 kilometers into miles b) 175 kilometers into miles

c) 50 miles into kilometers d) 100 miles into kilometers

Solution: According to the given scale and table. The points and line are drown on graph paper as given below



This conversion line shows that

(a) *140* km = *87.5* Miles.

(b) *175* km = *109.40* Miles.

(c) *50* Miles = *80* km.

(d) *100* Miles = *160* km.

Q.4- Use the graph in article 9.2.3 to convert:

(a) 6 acres into hectares.

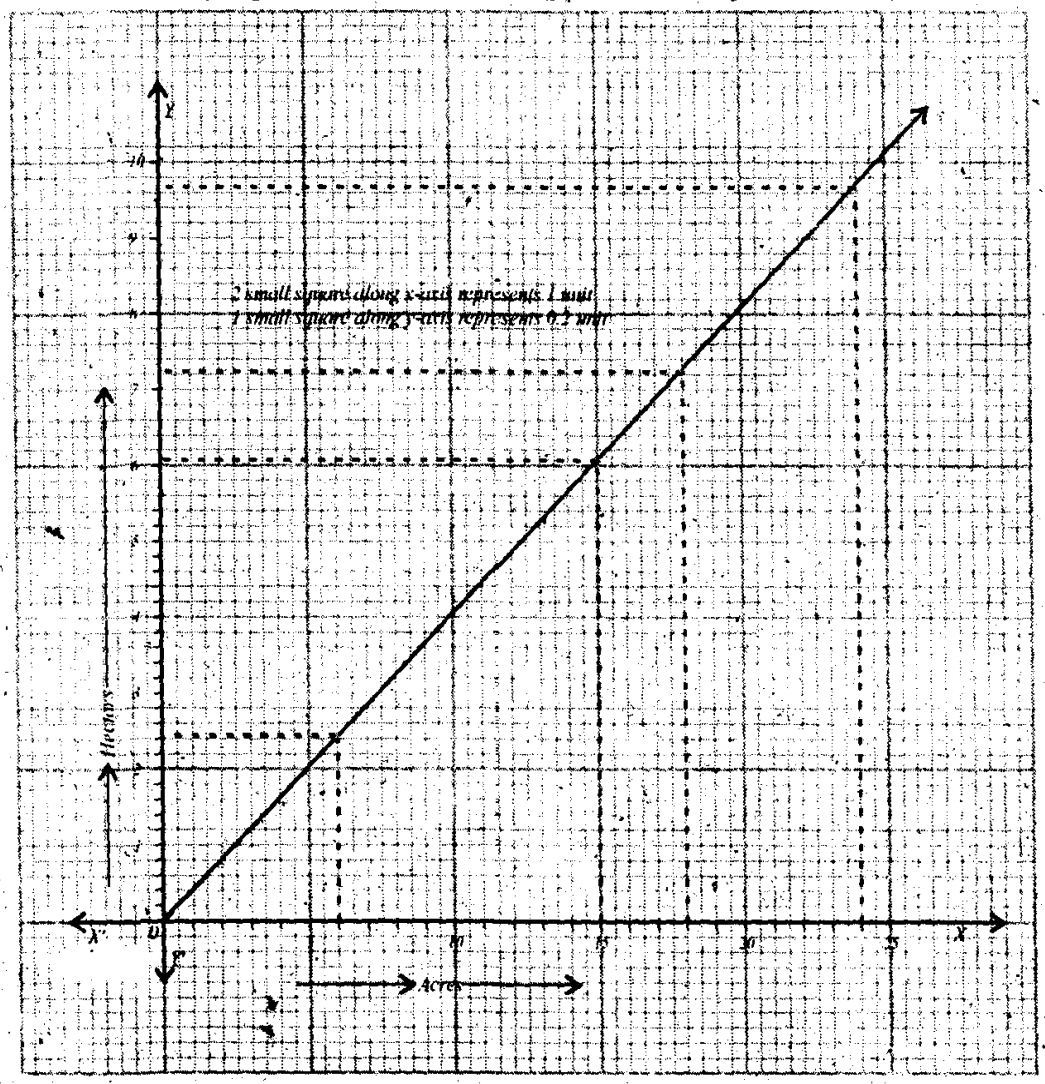
(b) 18 acres into hectares.

(c) 24 acres into hectares.

(d) 6.0702 hectares into acres.

Solution:

The graph refered in the question is given below.



The graph shows that

(a) 6 acres = 2.4278 Hectars.

(b) 18 acres = 7.2833 Hectars.

(c) 24 acres = 9.7111 Hectars.

(d) 6.0702 Hectars = 15.00 acres.

Review Exercise 9

Q.1- Encircle the correct answer.

(i) The co-ordinates of origin are:

(a) (1,0) (b) (0,1) (c) (0,0) (d) (1,1)

(ii) The perpendicular distance of a point form y-axis is called

(a) ordinate (b) abscissa (c) origin (d) straight line

(iii) The perpendicular distance of point from x-axis is called

(a) ordinate (b) abscissa (c) origin (d) straight line

(iv) For $x = 1$ in $2x + y = 6$, we have $y = ?$

(a) 8 (b) 4 (c) -8 (d) -4

(v) For $y = 2$ in $2x - y = 6$, we have $x = ?$

(a) 4 (b) -4 (c) 2 (d) -2

(vi) Graphs of equations in the form $y = c$ have y co-ordinate:

(a) 1 (b) c (c) 0 (d) -1

(vii) Graphs of equations in the form $x = a$ have x co-ordinate:

(a) a (b) undefined (c) 1 (d) c

(viii) $f(x) = \frac{x}{2}, 4 \le x \le 12$, x is a multiple of "2".

The domain of $f(x)$ is:

(a) {4,6,8,10,12} (b) {6,8,10}

(c) {4,6,8,10} (d) {2,3,4,5,6}

(ix) $f(x) = \frac{x}{2}, 4 \le x \le 12$, x is a multiple of "2".

The range of $f(x)$ is:

(a) {4,6,8,10,12} (b) {2,3,4,5,6}

(c) {3,4,5} (d) {2,3,4,5,6}

(x) If $y = 3x$, then for $x = 2$, we have $y = ?$

(a) 0 *(b) 6* *(c) −3* *(d) 2*

Ans:

(i) c	*(ii) b*	*(iii) a*	*(iv) b*
(v) a	*(vi) b*	*(vii) a*	*(viii) a*
(ix) b	*(x) b*		

Q.2- Fill in the blanks.

(i) A plane consisting of two number lines *OX* and *OY* intersecting at right angle at *"O"* is called a _____

(ii) The perpendicular distance of a point from y-axis is called_____

(iii) The perpendicular distance of a point from x-axis is called_____

(iv) The pair of numbers *(2,3)* is called an_____

(v) The horizontal line *X'OX* is called_____

(vi) The vertical line *YOY'* is called_____

(vii) For a point *(−1,−2)* we move *1* unit towards left of *"O"* and *2* units_____

(viii) The co-ordinate of origin are_____

(ix) An equation for a straight line that consists of *y* term is as_____

(x) In the graph of $2x + y = 6$, the *x*-intercept is _____

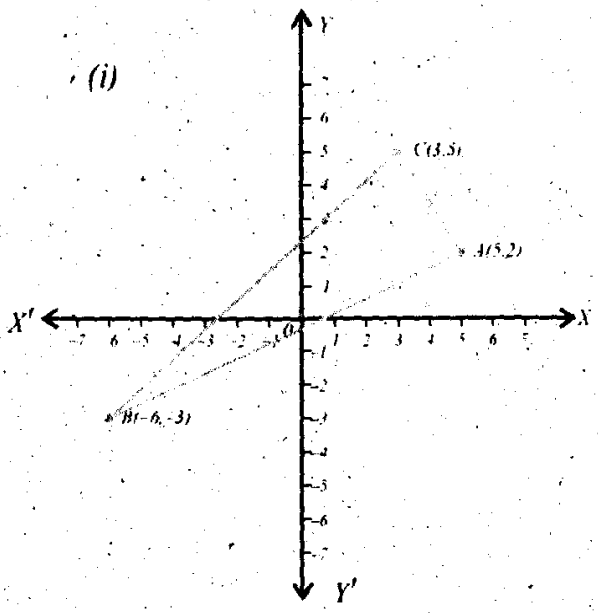
Ans:

(i) Co-ordinate plane	*(ii)Abscissa*	*(iii) Ordinate*	*(iv) Ordered pair*
(v) x-axis	*(vi) y-axis*	*(vii) Downward of x-axis*	*(viii) (0,0)*
(ix) y = c	*(x) 3*		

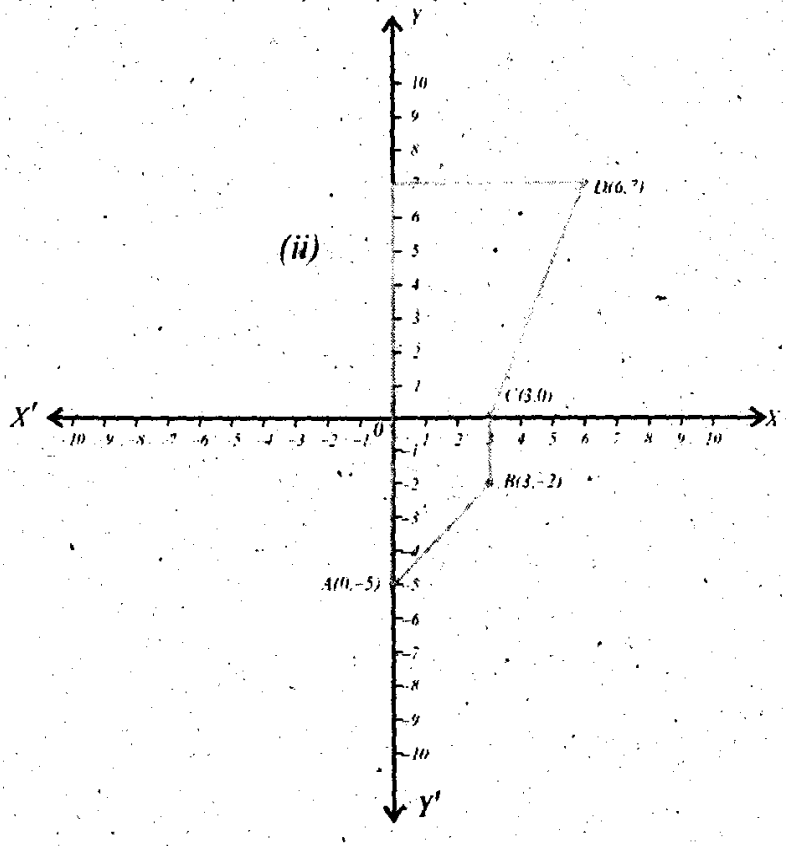
Q.3- Draw the figures with the help of the following points on the graph paper.

Solution:

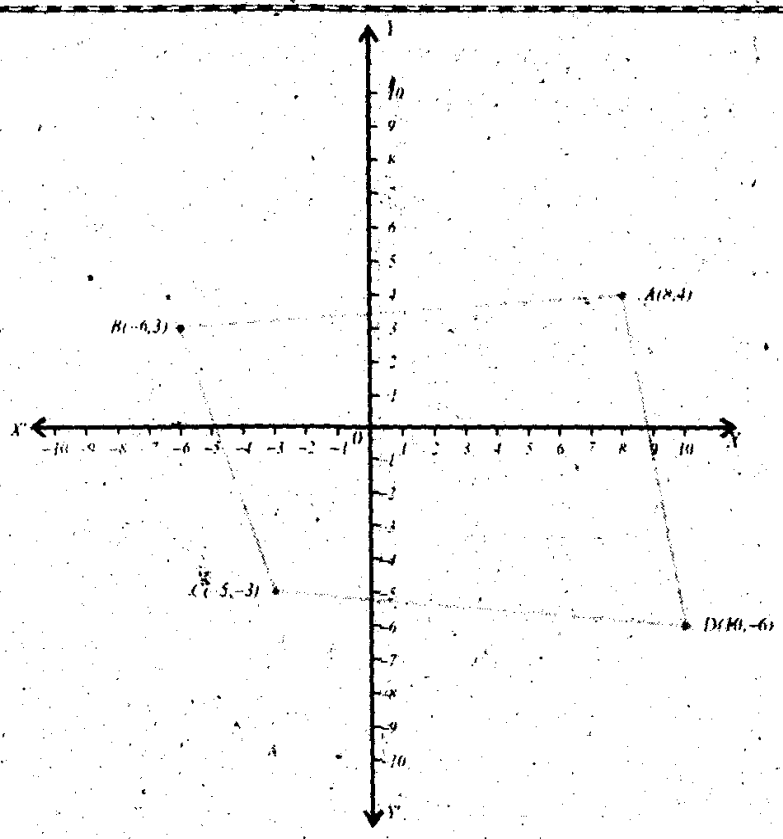
(i) A(5,2), B(-6,-3) and C(3,5)



(ii) A(0,-5), B(3,-2), C(3,0) and D(6,7)



(iii) A(8,4), B(-6,3), C(-5,-3) and D(10,-6).


A(8,4)
B(−6,3)
C(−5,−3)
D(8,−6)
X'
X
Y'
Y
O

Q.4- Sketch the graph

(i) Sketch the graph of $y = 3x + 2$

Solution: Put different values of x in the equation.

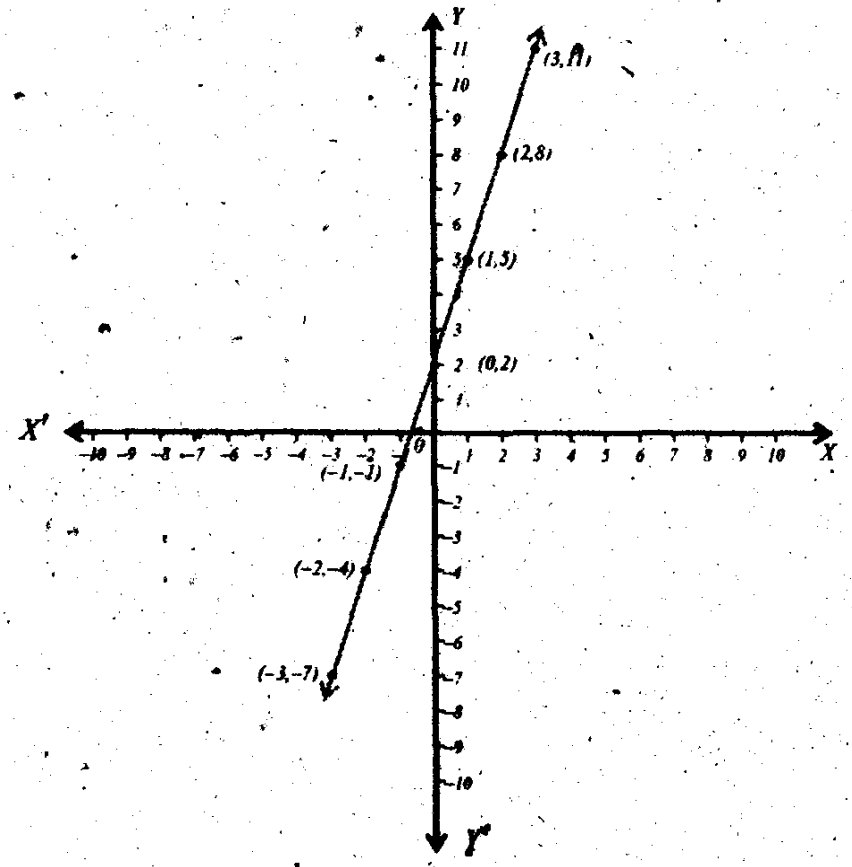
For $x = -3, y = -7 \Rightarrow (-3, -7)$ is on the graph.

For $x = -2, y = -4 \Rightarrow (-2, -4)$ is on the graph.

For $x = -1, y = -1 \Rightarrow (-1, -1)$ is on the graph.

For $x = 0, y = 2 \Rightarrow (0, 2)$ is on the graph.

Now we plot these points on graph paper and join them as given below.



(ii) Sketch the graph of $y = 2x + 1$

Solution:

Replace x by different numbers.

For $x = -3, y = -5 \Rightarrow (-3, -5)$ is on the graph.

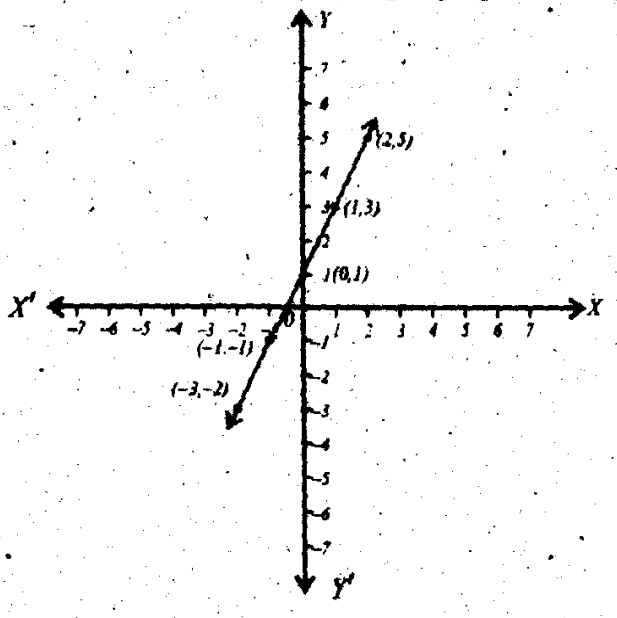
For $x = -2, y = -3 \Rightarrow (-2, -3)$ is on the graph.

For $x = -1, y = -1 \Rightarrow (-1, -1)$ is on the graph.

For $x = 0, y = 1 \Rightarrow (0, 1)$ is on the graph.

For $x = 2, y = 3 \Rightarrow (2, 3)$ is on the graph.

Now plot these points on graph paper and join them.



(iii) Sketch the graph of $y = x + 1$

Solution:

Here

For $x = -2, y = -1 \Rightarrow (-2, -1)$ is on the graph.

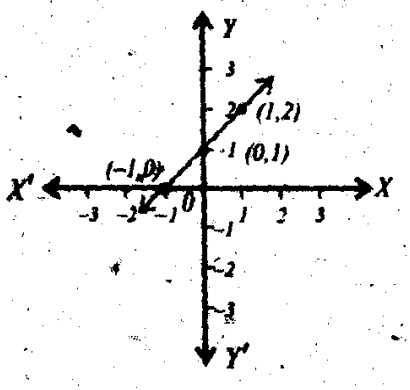
For $x = -1, y = 0 \Rightarrow (-1, 0)$ is on the graph.

For $x = 0, y = 1 \Rightarrow (0, 1)$ is on the graph.

For $x = 1, y = 2 \Rightarrow (1, 2)$ is on the graph.

For $x = 2, y = 3 \Rightarrow (2, 3)$ is on the graph.

Locate these points on graph paper and join them as given below.



(iv) Sketch the graph of $y = -\frac{x}{2} - \frac{5}{2}$

Solution: Replace x for different numbers.

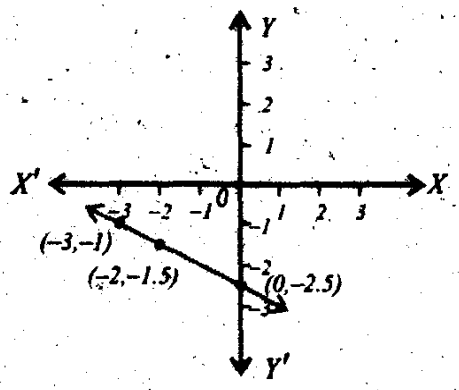
For $x = -3, y = -1 \Rightarrow (-3, -1)$ is on the graph.

For $x=-1, y=-2 \Rightarrow (-1,-2)$ is on the graph.

For $x=1, y=-3 \Rightarrow (1,-3)$ is on the graph.

For $x=3, y=-4 \Rightarrow (3,-4)$ is on the graph.

Locate these points on graph paper and join them as given below.



(v) Sketch the graph of $y=3x+4$

Solution:

Replace x for different numbers.

For $x=-2, y=-2 \Rightarrow (-2,-2)$ is on the graph.

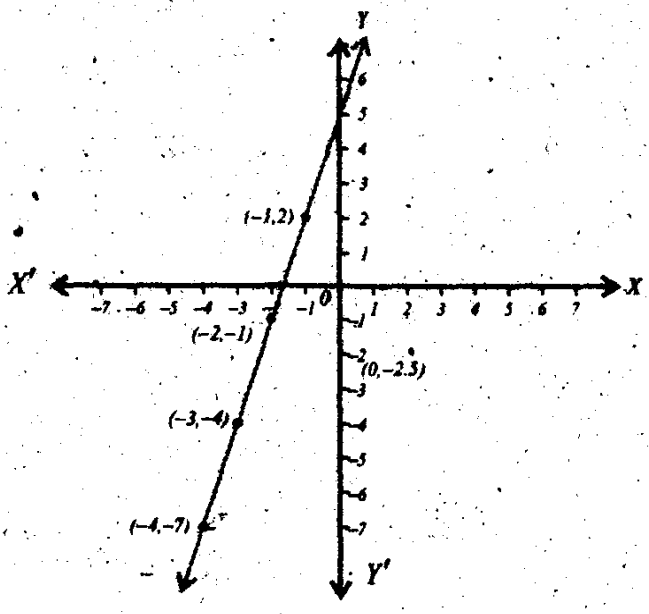
For $x=-1, y=1 \Rightarrow (-1,1)$ is on the graph.

For $x=0, y=4 \Rightarrow (0,4)$ is on the graph.

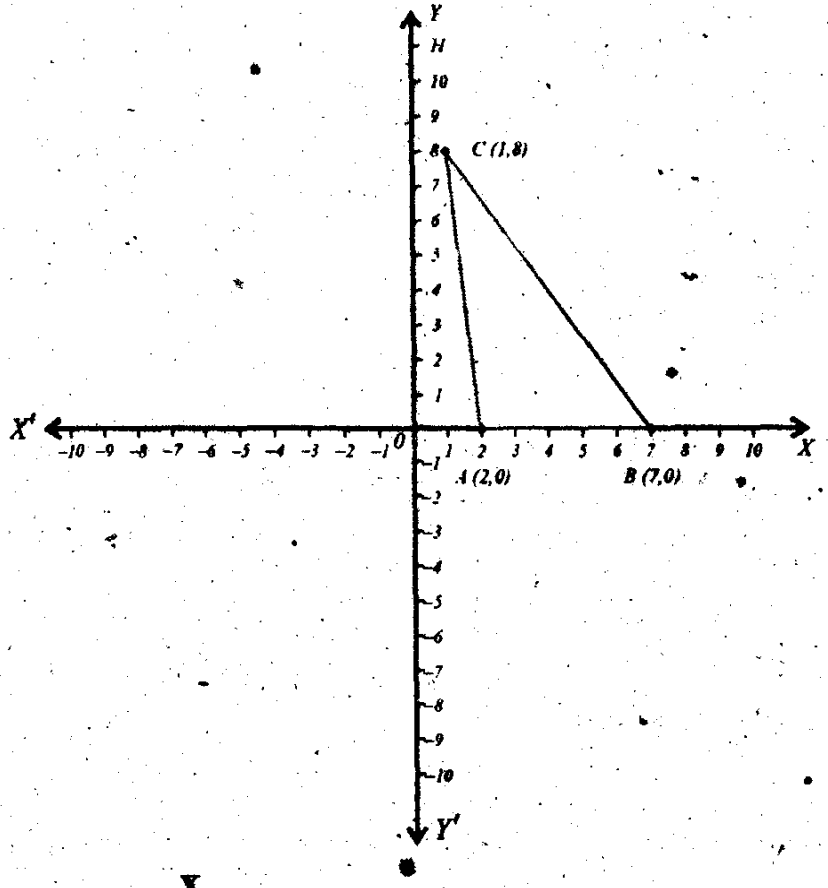
For $x=1, y=7 \Rightarrow (1,7)$ is on the graph.

For $x=2, y=10 \Rightarrow (2,10)$ is on the graph.

Locate these points on graph paper and join them as given below.



Q.5- Draw the graph by plotting points A(2,0), B(7,0) and C(1,8).



Q.6- If $f(x)=\frac{x}{2}$, $4\le x\le 12$ and x is an integer multiple of 2. Then find the domain and range of f(x).

Ans. As $4 \le x \le 12$ and x is an integer multiple of 2. So values of x in the funtion. We get

$$f(x)=\frac{x}{2} \Rightarrow f(4)=\frac{4}{2}=2$$

For $x=6 \Rightarrow f(6)=\frac{6}{2}=3$

For $x=6 \Rightarrow f(8)=\frac{8}{2}=4$

For $x=10 \Rightarrow f(10)=\frac{10}{2}=5$

For $x=12 \Rightarrow f(12)=\frac{12}{2}=6$

Thus $f(x)=\{(4,2),(6,3),(8,4),(10,5),(12,6)\}$

So Dom: $f(x)=\{4,6,8,10,12\}$

Rng: $f(x)=\{2,3,4,5,6\}$

MULTIPLE CHOICE QUESTIONS

Q.1- Tick the best of given choice.

(i) Choose the wrong statement.

(a) $\{x, y\} = \{y, x\}$ *(b)* $(x, y) = (y, x)$

(c) $(9, 1) = (9, 1)$ *(d)* $(p, q) = (p, q)$

Q.2- The point $(-3, 0)$ is

(a) On *x-axis* *(b)* On *y-axis*

(c) Above *x-axis* *(d)* Blow *x-axis*

Q.3- Graph of a Linear equation is

(a) Alwayes line *(b)* Never line

(c) Some times lime

(d) Some times other than line.

Q.4- The graph of equation $y = 3x + 1$ passes through.

(a) *(0,0)* *(b)* *(2,5)*

(c) *(3,10)* *(d)* *(0,2)*

Q.5- The line $y = 5$ is

(a) Parallel to *x-axis* *(b)* Parallel to *y-axis*

(c) Cuts *x-axis* *(d)* Not cuts *y-axis*

Q.6- The line $x = -2$ is

(a) Above *x-axis* *(b)* Below *x-axis*

(c) On left of *y-axis* *(d)* On right of *y-axis*

Q.7- The line $y = 2x + 6$ Cuts x-axis at

(a) $x = 3$ *(b)* $x = -3$

(c) $y = 6$ *(d)* $y = 8$

Q.8- The first element of ordered pair (x, y) is called

(a) Ordinate *(b)* Abscissa

(c) Domain *(d)* Range

Q.9- The equation of a line parallel to x-axis and below x-axis is

(a) $y = 5$ *(b)* $y = -3$

(c) $x = -5$ *(d)* $x = 3$

Q.10- **The equation of a line parallel to y-axis and on right side of y-axis is**

(a) $x = 3$ (b) $x = -3$

(c) $y = 3$ (d) $y = -3$

MODEL CLASS TEST

Time : One Hour Max Marks : 25

Q.1- Tick the best of given choices.

(i) The point $(-3, 1)$ is

(a) On *x-axis* (b) On *y-axis*

(c) Above *x-axis* (d) below *x-axis*

(ii) The point $(1, -4)$ is on the line

(a) $y = x + 1$ (b) $y = 2x + 2$

(c) $y = 2x - 6$ (d) $y = 2x + 6$

(iii) The line $y = 3x$, press through the

(a) Origine (b) $(0, 1)$

(c) $(3, 0)$ (d) $(3, 3)$

(iv) In the function $y = 3x + 2$, the set of values of x is called

(a) Range (b) Domain

(c) Ordinate (d) Abscissa

(v) 0^oC is equal to

(a) ^0F (b) 10^0F

(c) 25^0F (d) 32^0F

(vi) *200* Kilometers are equal to

(a) *100* Miles (b) *125* Miles

(c) *150* Miles (d) *200* Miles

(vii) Two units of the same quantity can be inter converted easily by.

(a) Linear graph (b) Non linear graph

(c) Conversion graph (d) Point graph.

Q.2- Attempt any five questions.

(i) Plot the points and join them orderly.
$A(0,-7), B(3,-2), C(4,0)$

(ii) Find four points lying on the line $y = 2x + 3$

(iii) Draw the graph of $y = 5$

(iv) Draw the graph of $x = -2$

(v) Draw the graph of $y = x$

(vi) Define domain and range of a funtion.

(vii) If $f(x) = \frac{x}{2}$, $4 \le x \le 12$ and x is an integer, multiple of 2, then find domain and range of $f(x)$.

Attemp any two of the following questions.

Q.3- Draw the graph of $y = -\frac{x}{2} - \frac{5}{2}$

Q.4- Consider the table

Kilometers	**0**	**100**	**200**	**300**
Miles	**0**	**62.5**	**125**	**187.5**

Plot the graph and using this graph, convert

(a) *140 km* into miles *(b)* *50* Miles into Km.

Q.5- Draw the graph of $y = 4x - 1$