EXERCISE 26B

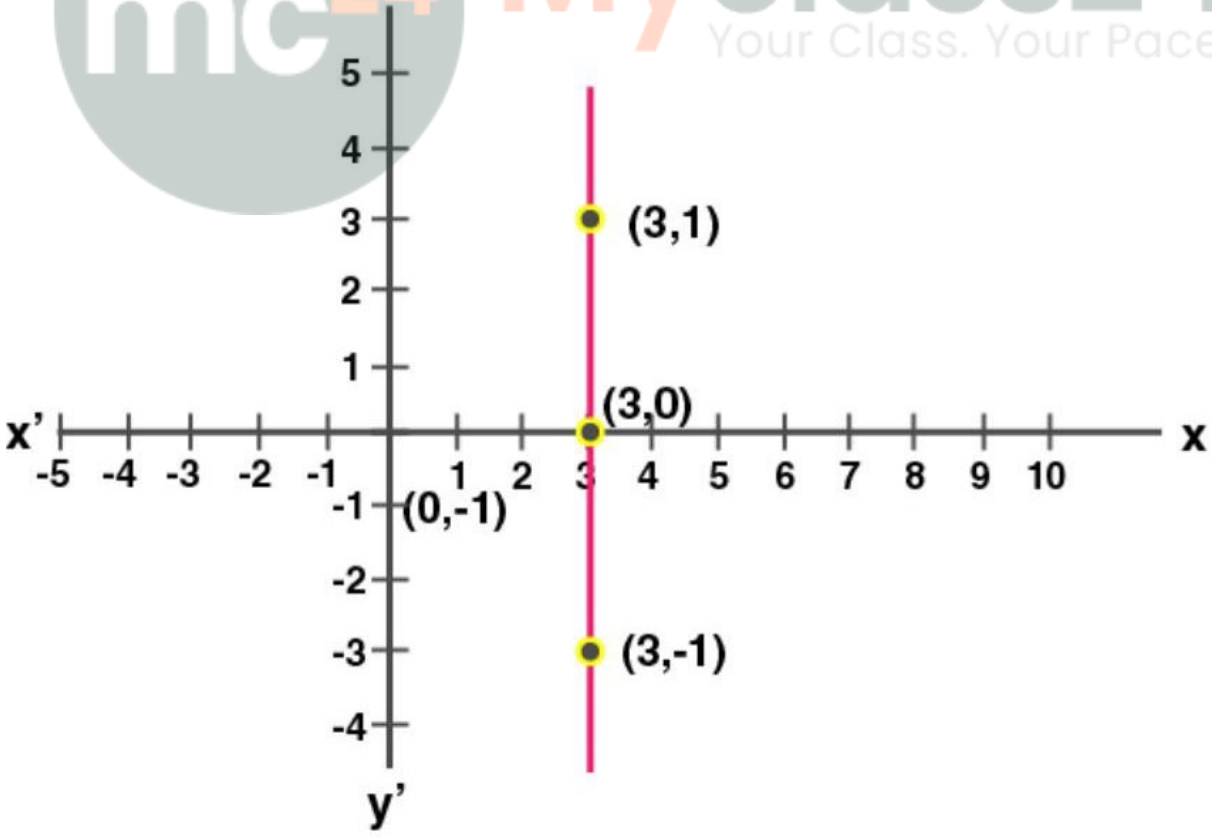
Draw the graph for each linear equation given below:

(i) x = 3
(ii) x + 3 = 0
(iii) x – 5 = 0
(iv) 2x – 7 = 0
(v) y = 4
(vi) y + 6 = 0
(vii) y – 2 = 0
(viii) 3y + 5 = 0
(ix) 2y – 5 = 0
(x) y = 0
(xi) x = 0
Solution:

(i)

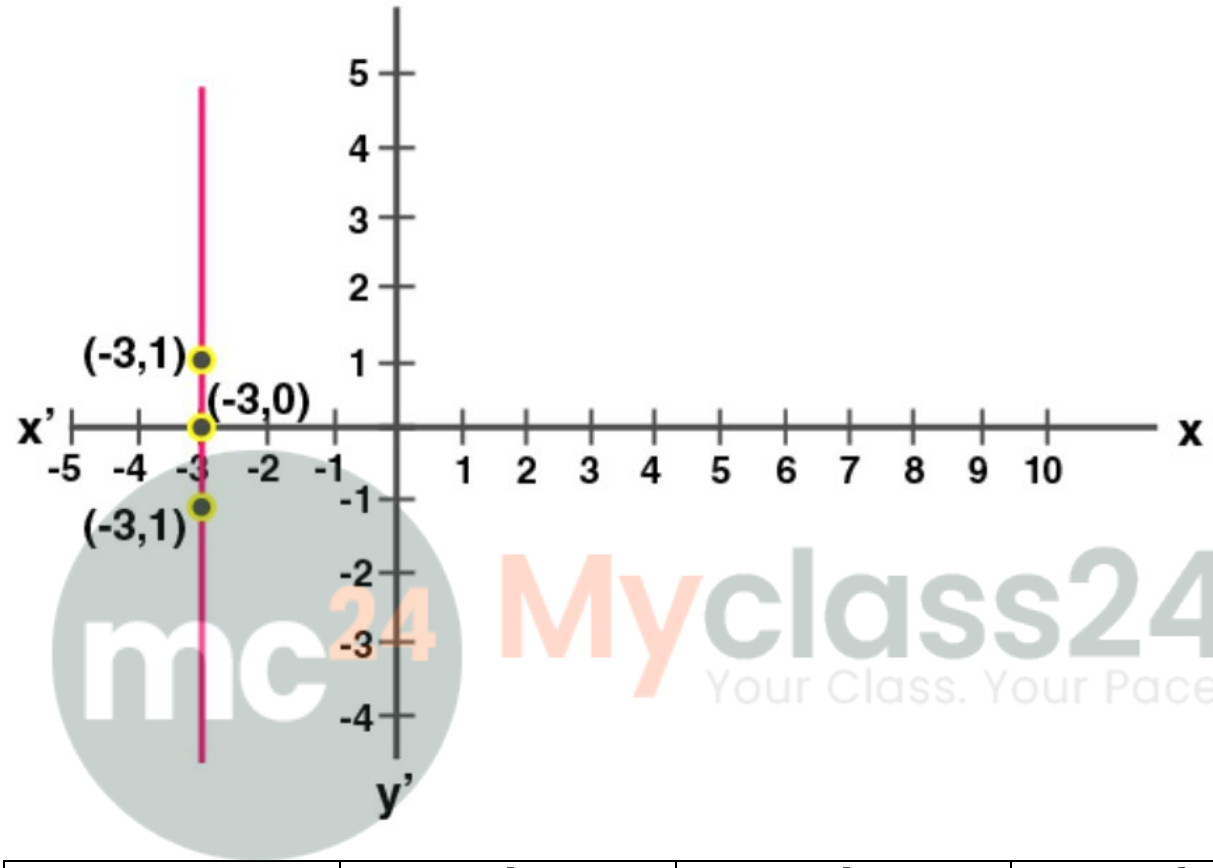
x	3	3	3
y	-1	0	1

(ii)

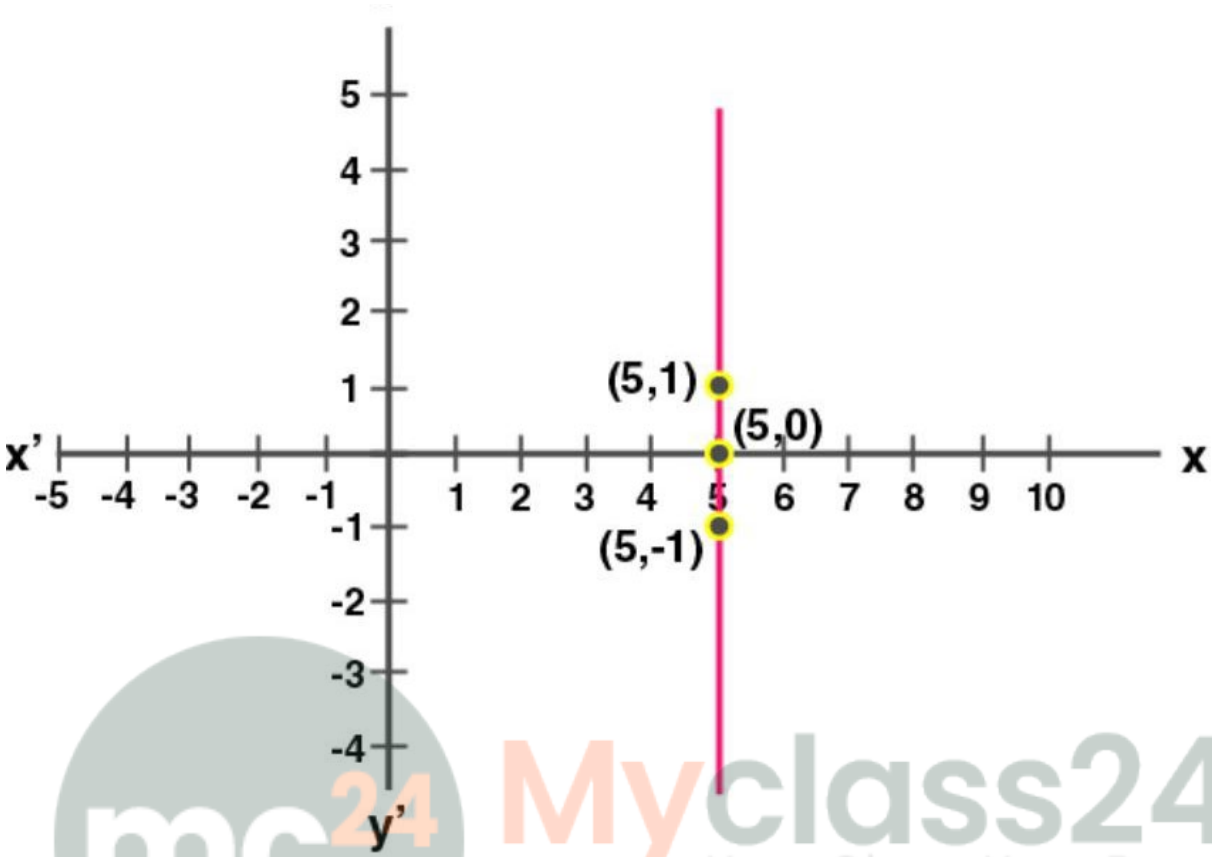


x	-3	-3	-3
y	-1	0	1

(iii)

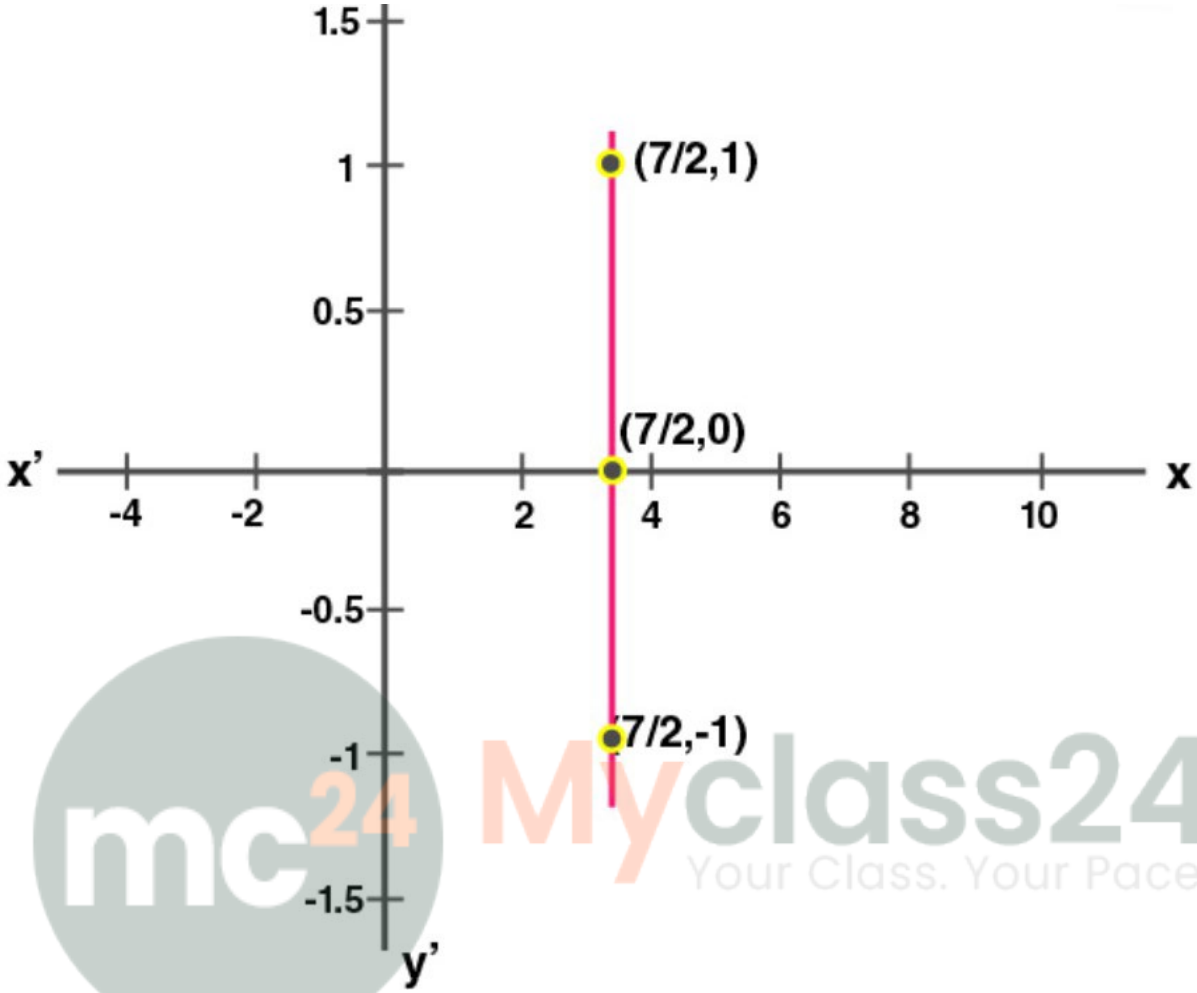


x	5	5	5
y	-1	0	1



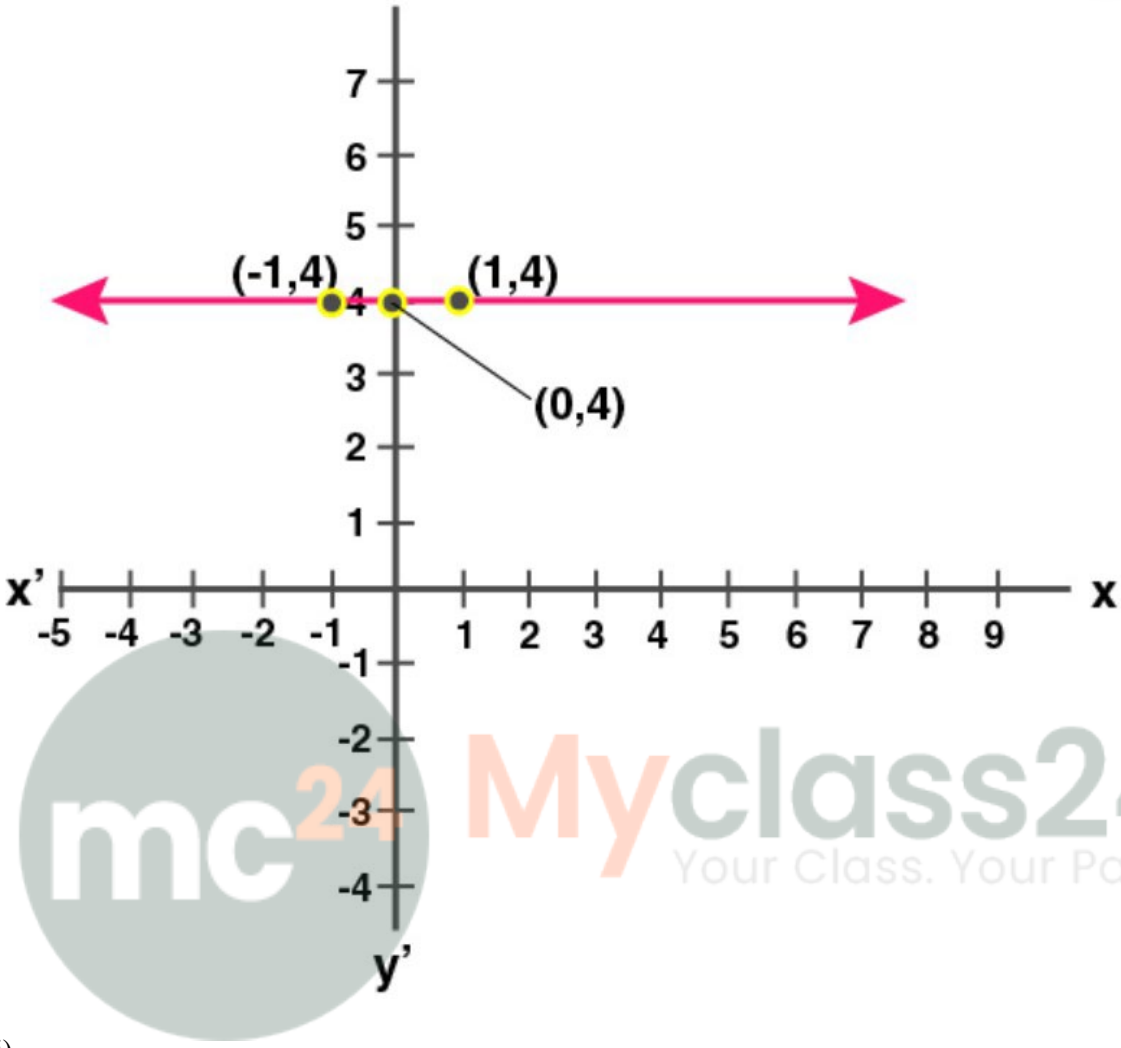
(iv)

x	7/2	7/2	7/2
y	-1	0	1



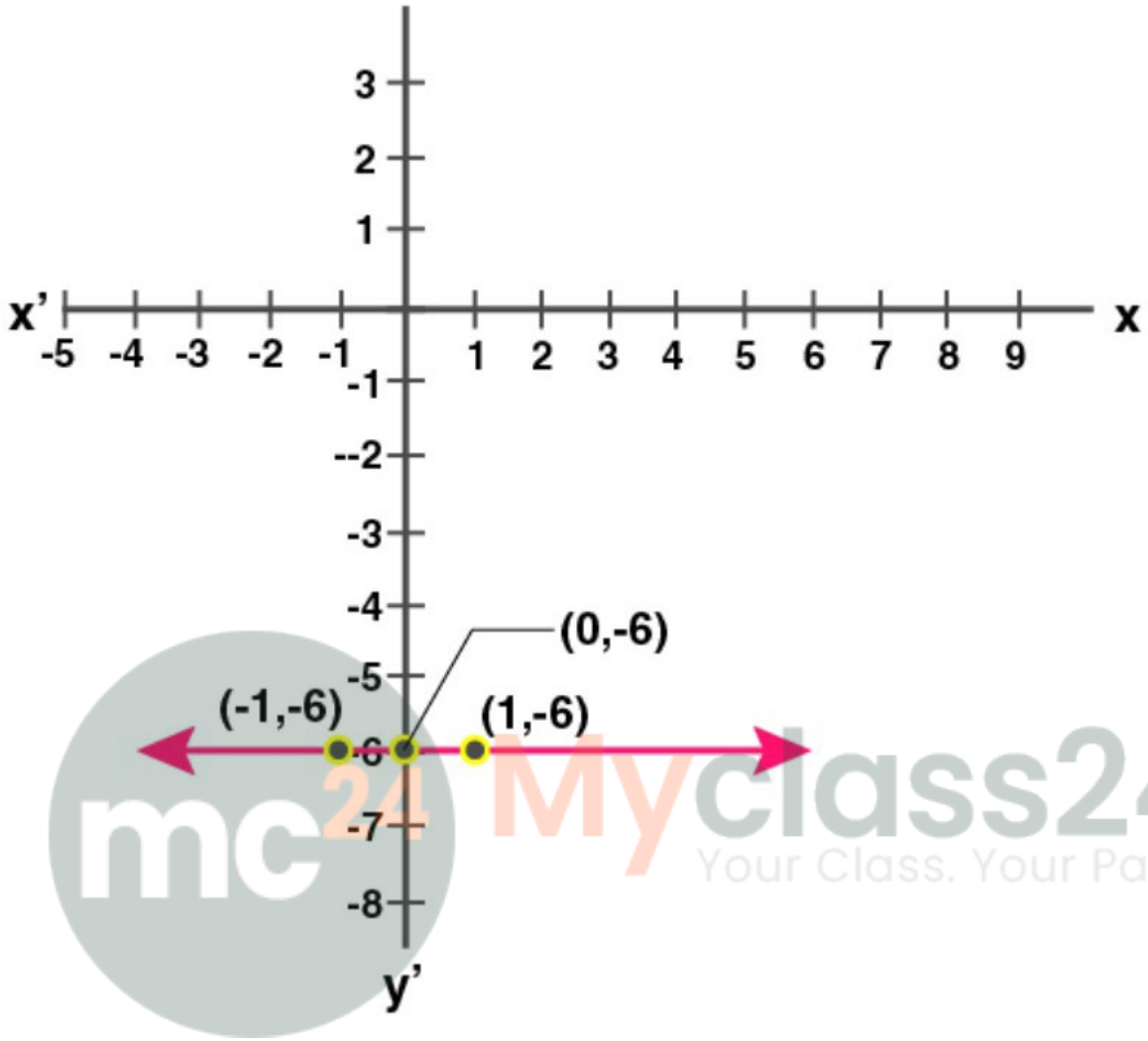
(v)

x	-1	0	-1
y	4	4	4



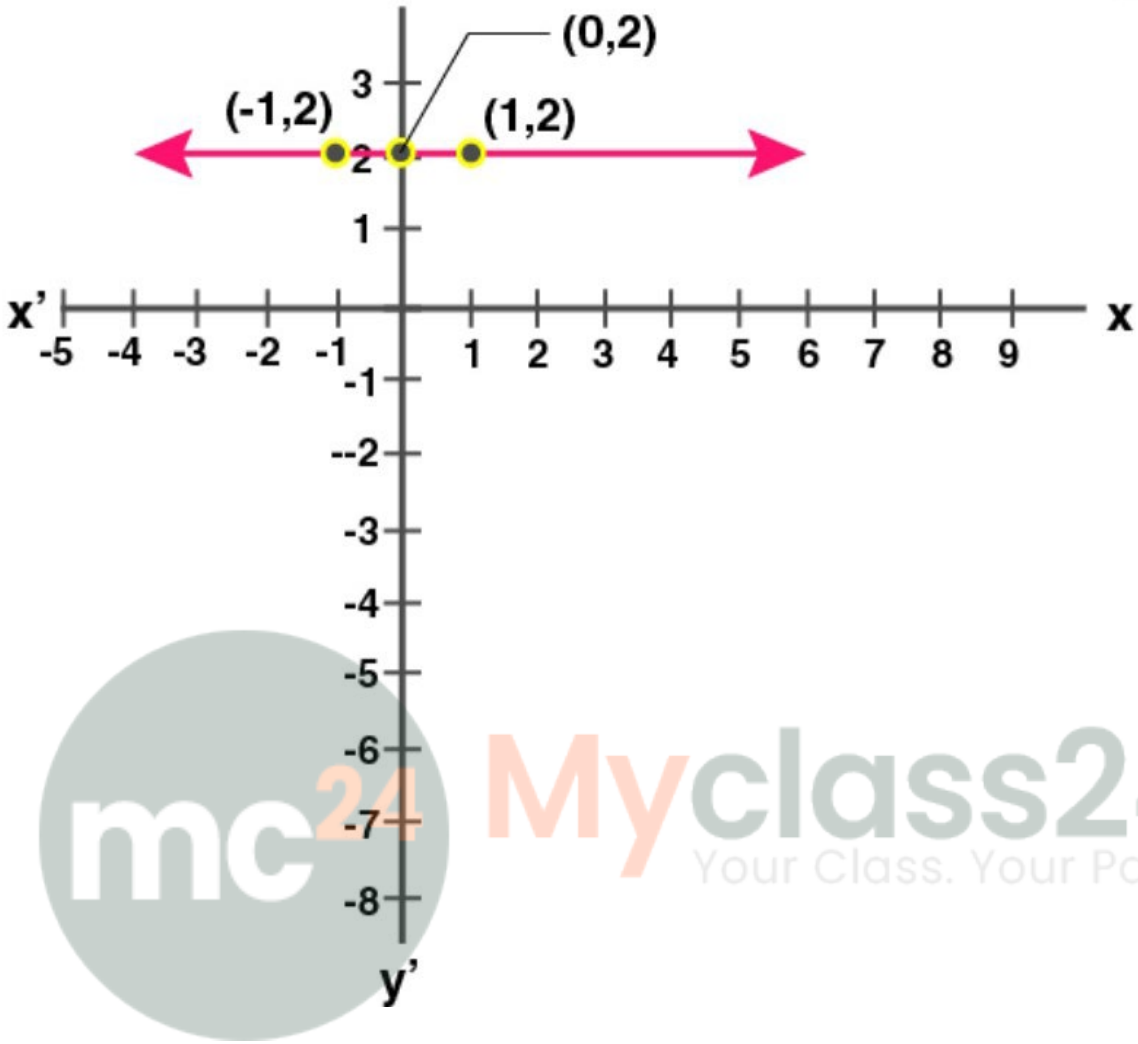
(vi)

x	-1	0	1
y	-6	-6	-6



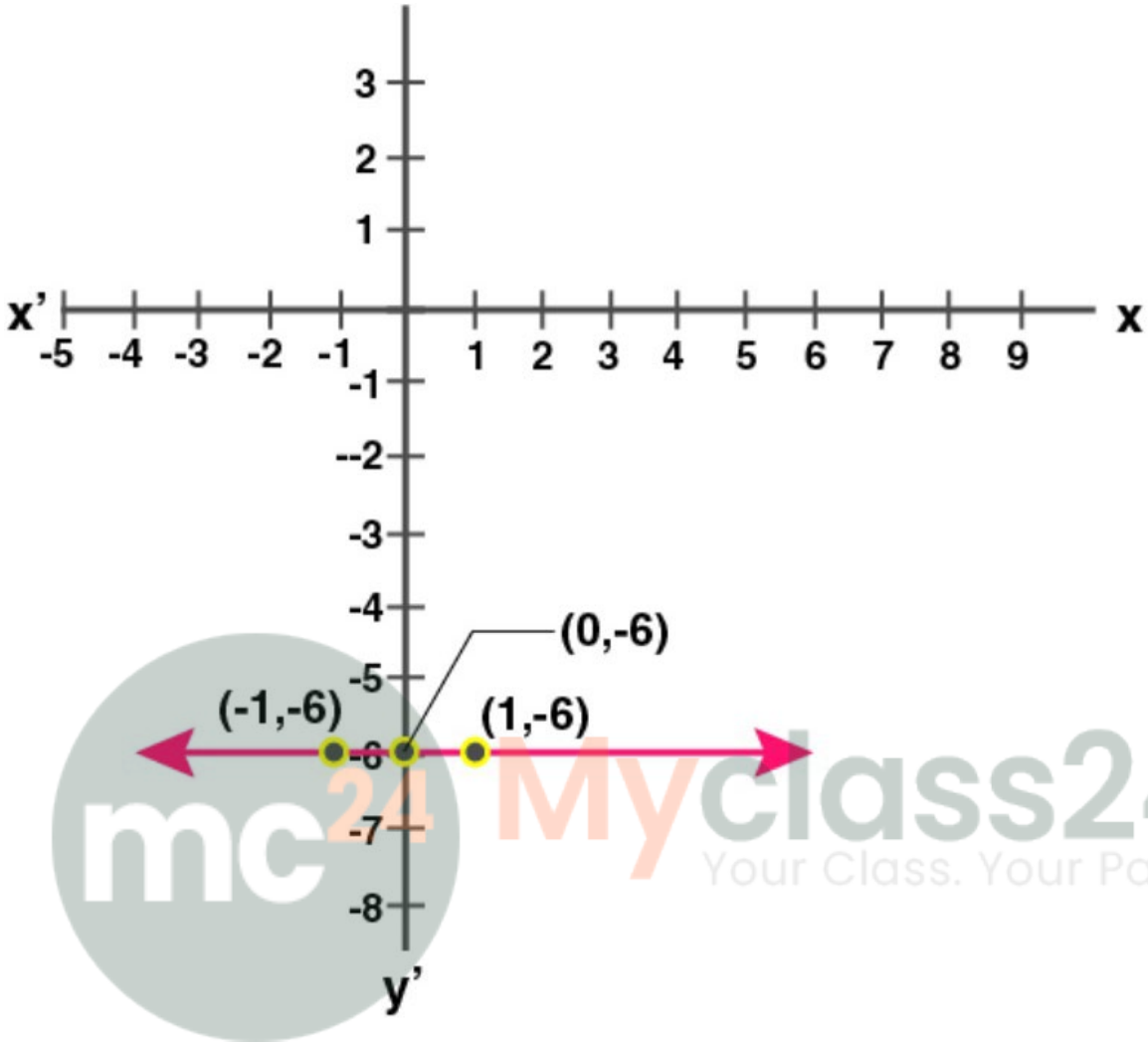
(vii)

x	-1	0	1
y	2	2	2



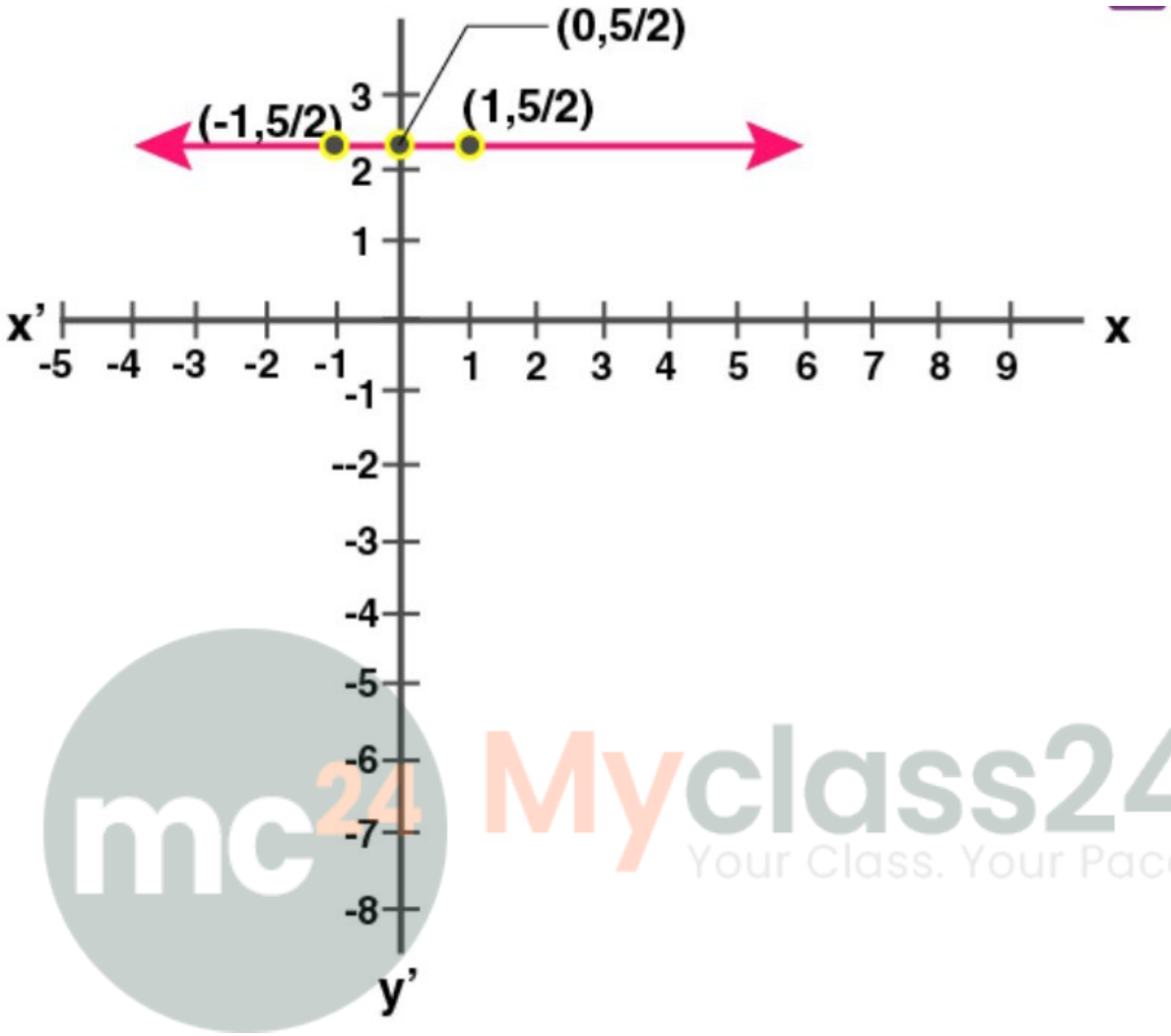
(viii)

x	-1	0	1
y	-6	-6	-6



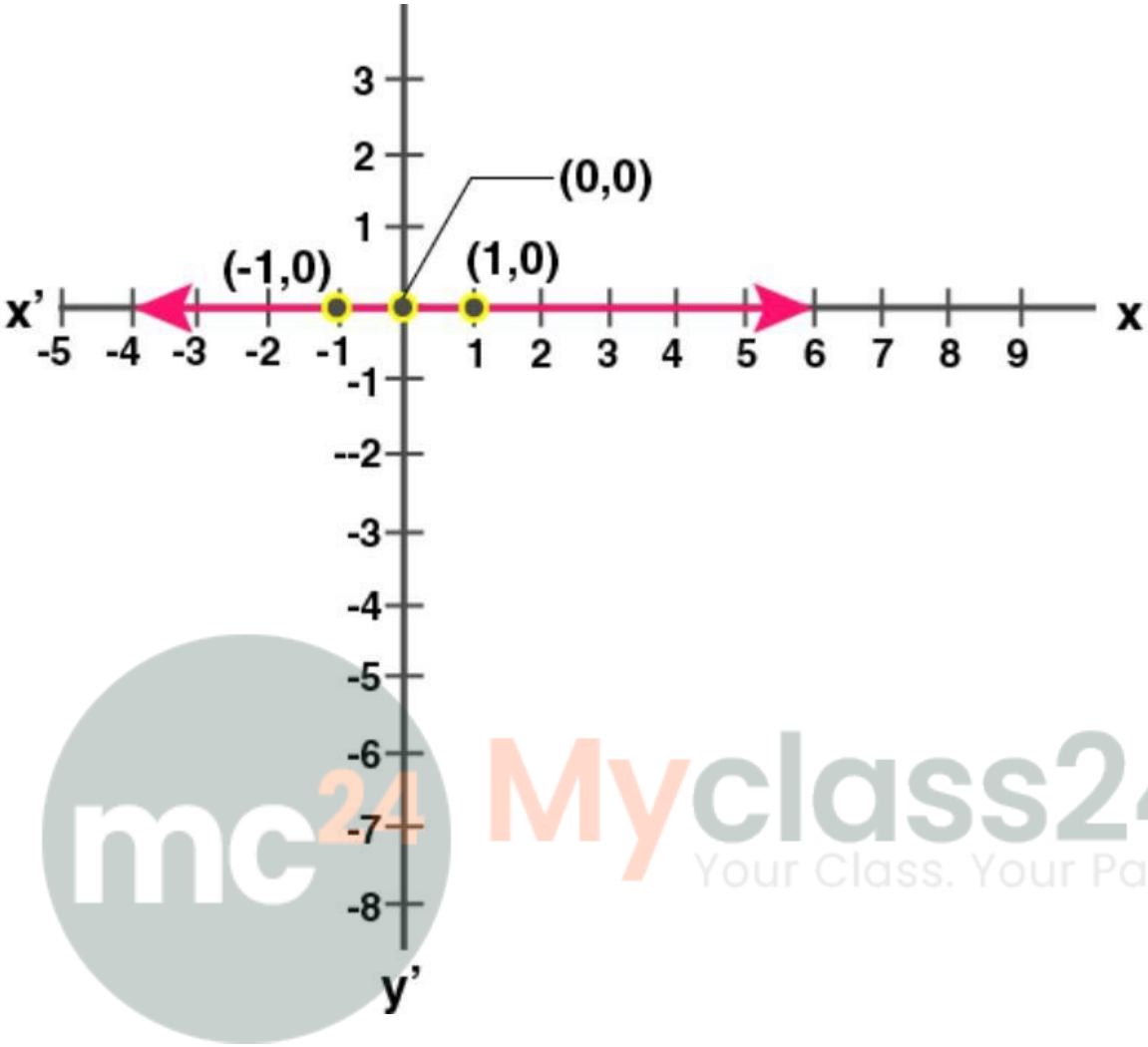
(ix)

x	-1	0	1
y	5/2	5/2	5/2



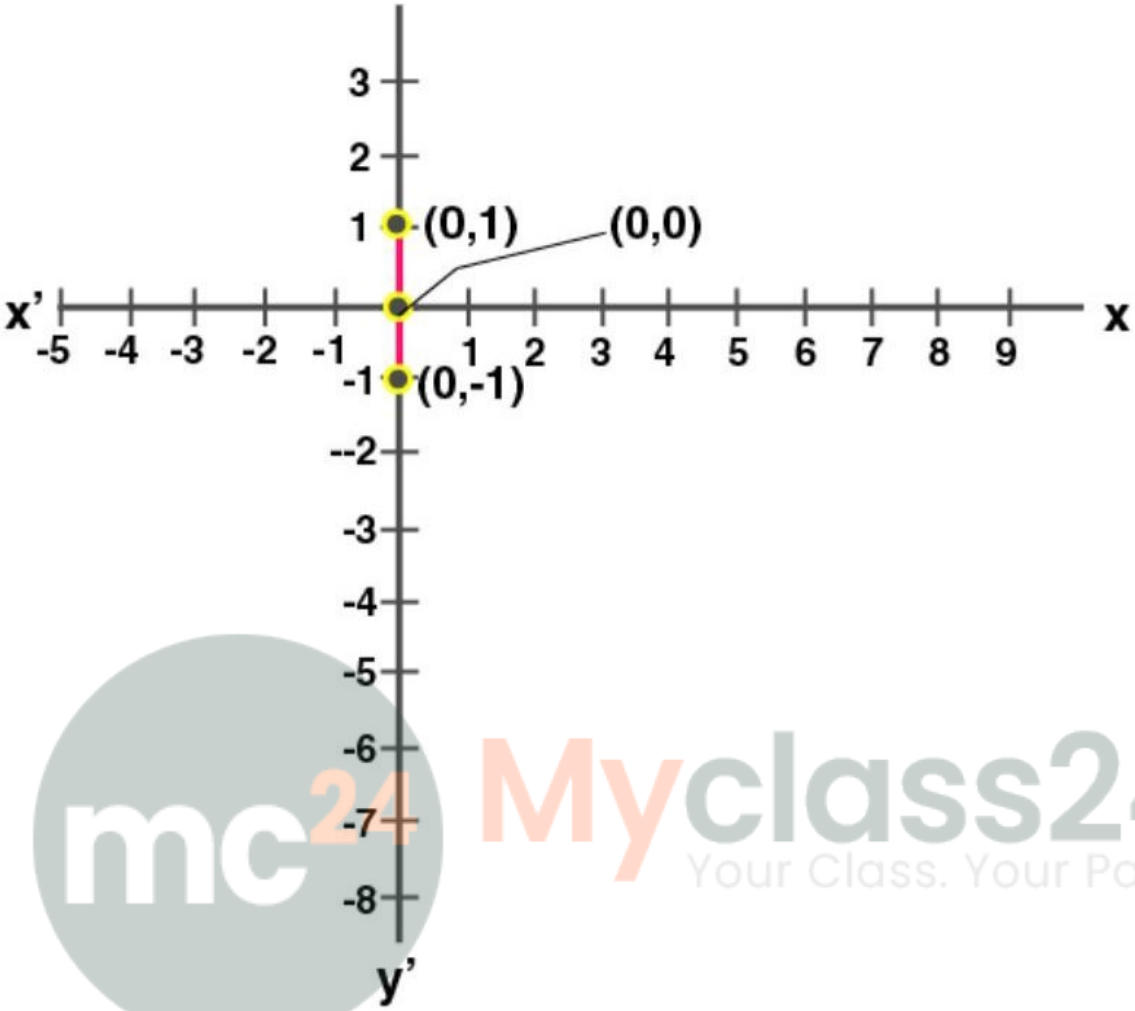
(x)

x	-1	0	1
y	0	0	0



(xi)

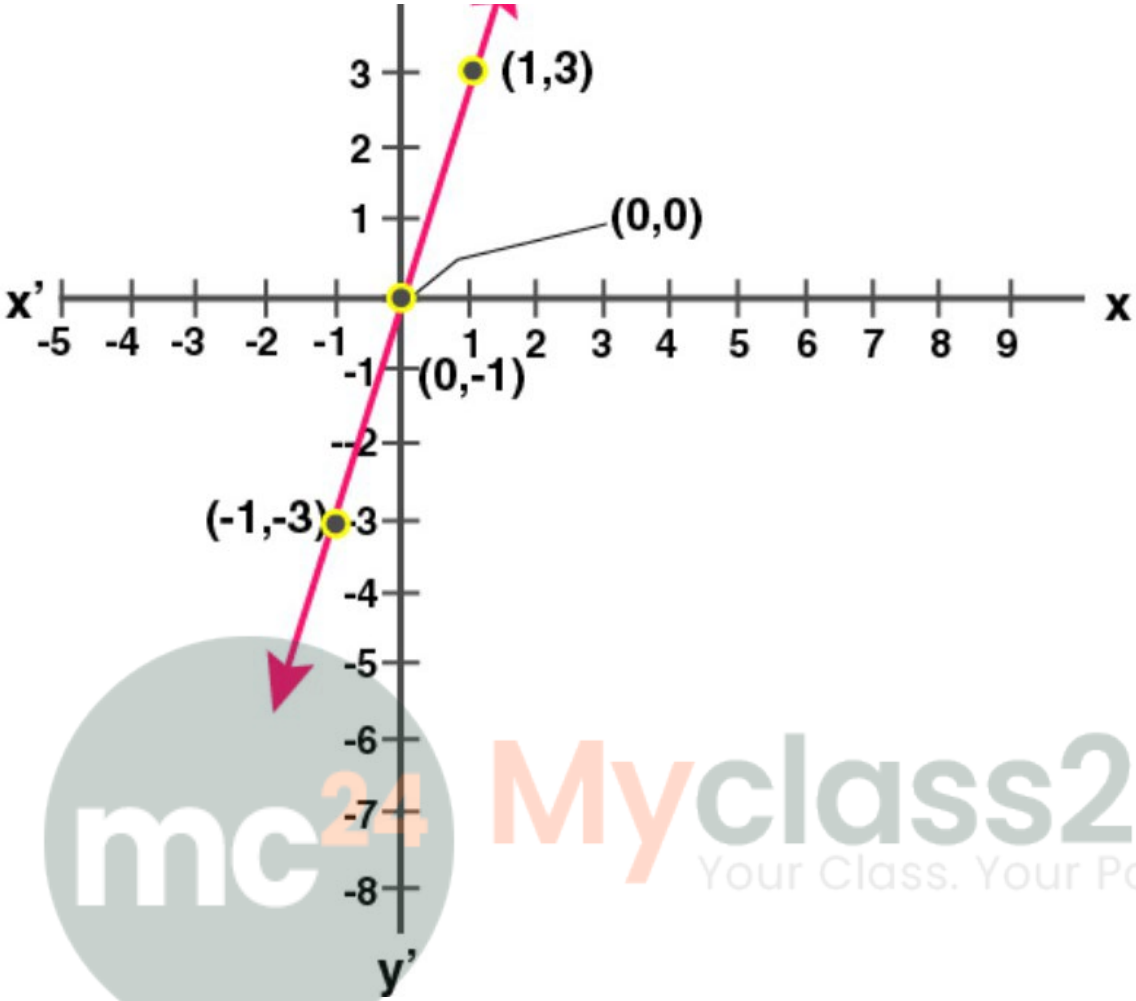
x	0	0	0
y	-1	0	1



2. Draw the graph for each linear equation given below:
(i) y = 3x
(ii) y = - x
(iii) y = - 2x
(iv) y = x
(v) 5x + y = 0
(vi) x + 2y = 0
(vii) 4x – y = 0
(viii) 3x + 2y = 0
(ix) x = -2y
Solution:

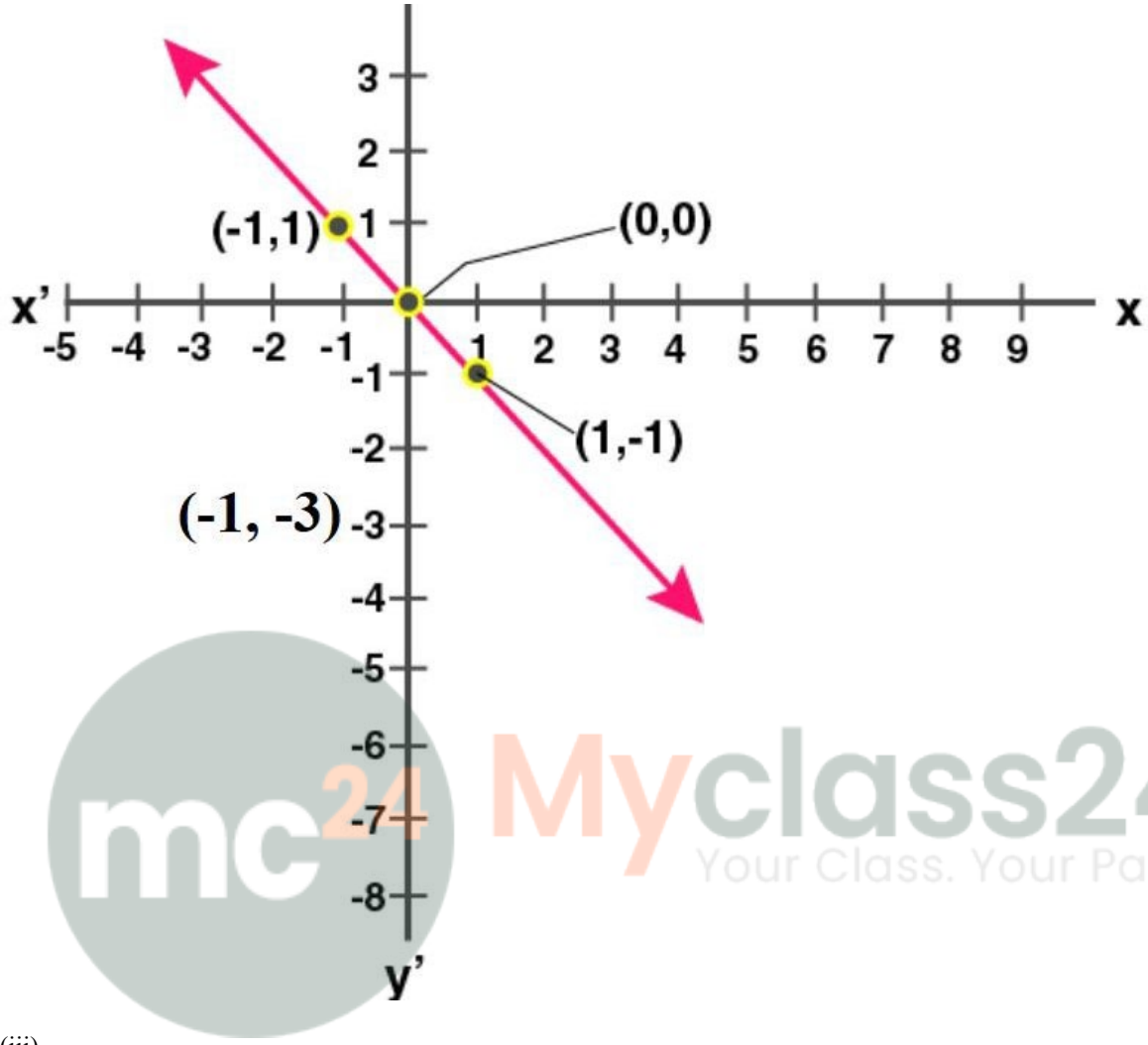
(i)

x	-1	0	1
y	-3	0	3



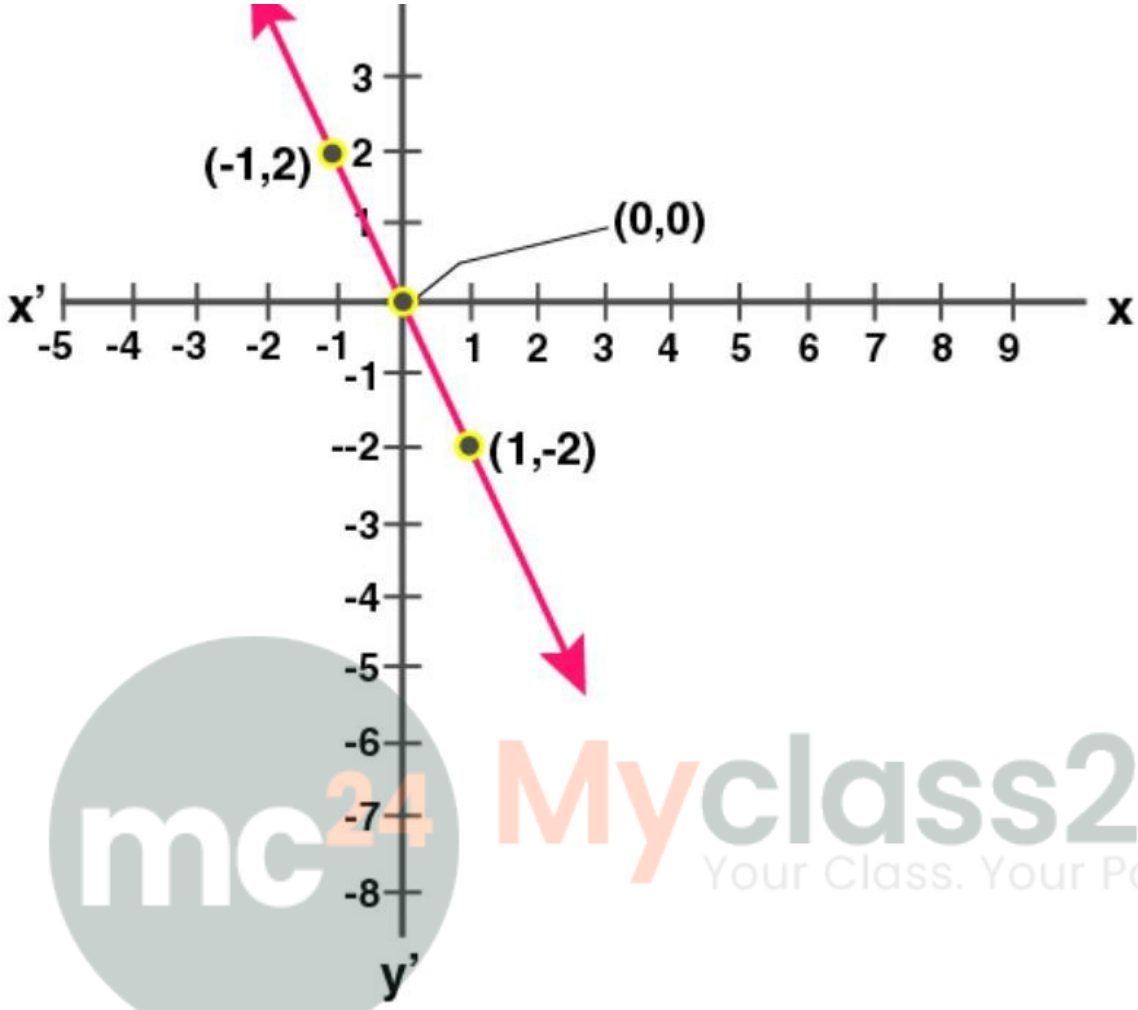
(ii)

x	-1	0	1
y	1	0	-1



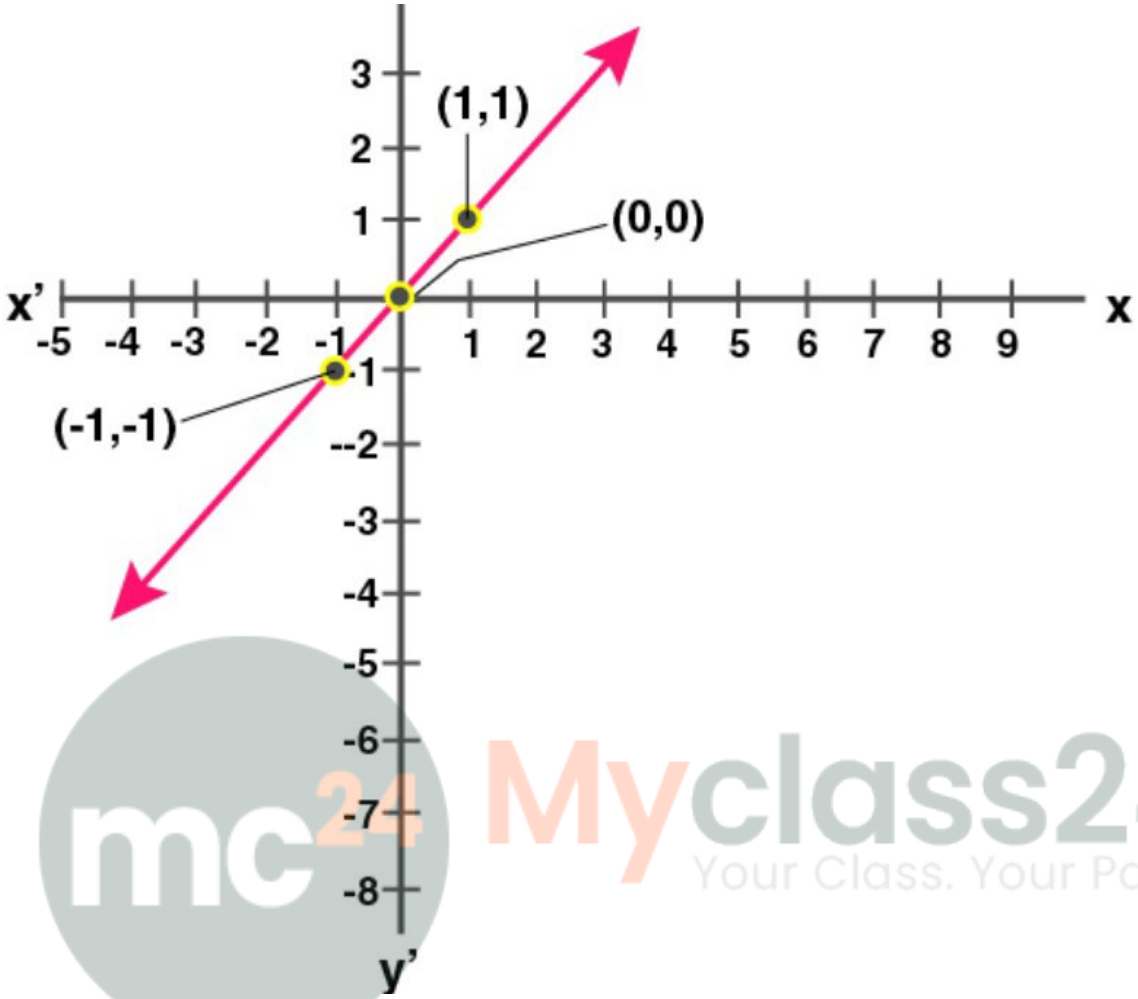
(iii)

x	-1	0	1
y	2	0	-2



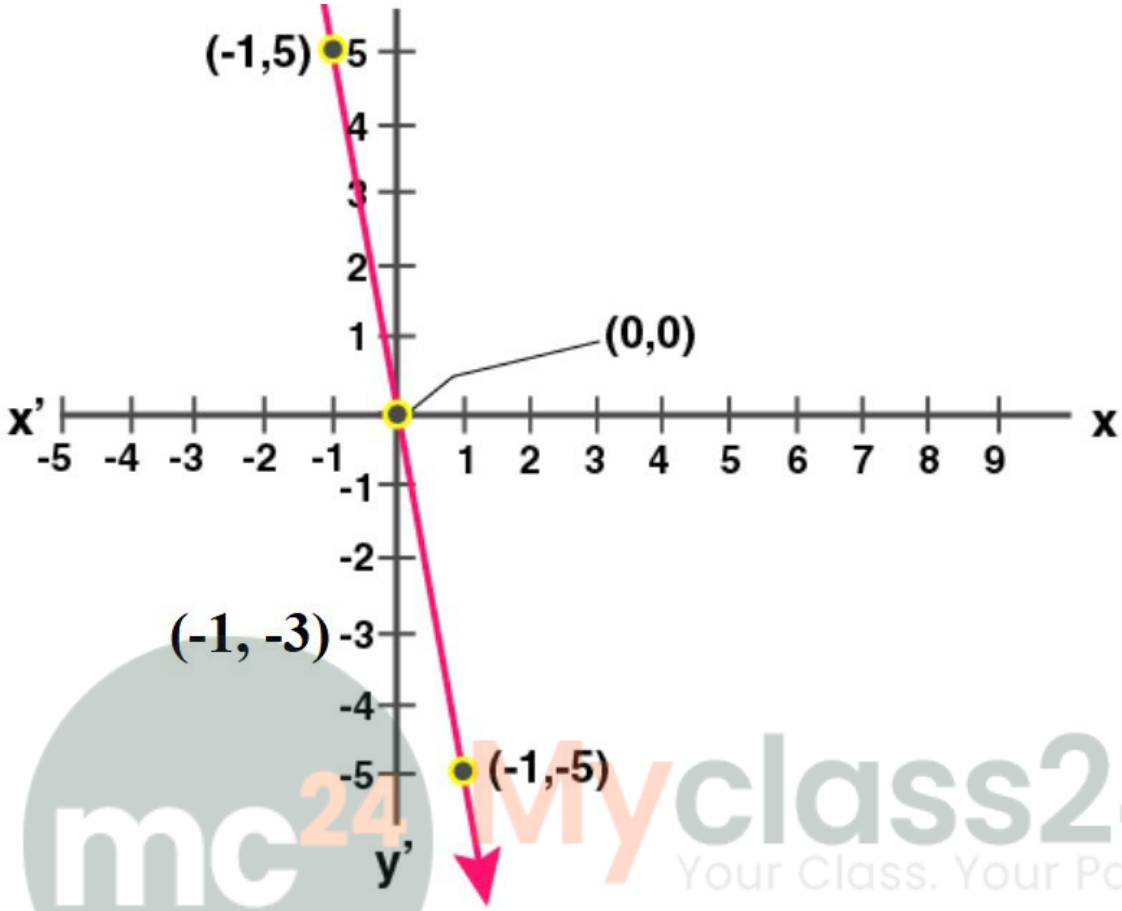
(iv)

x	-1	0	1
y	-1	0	1



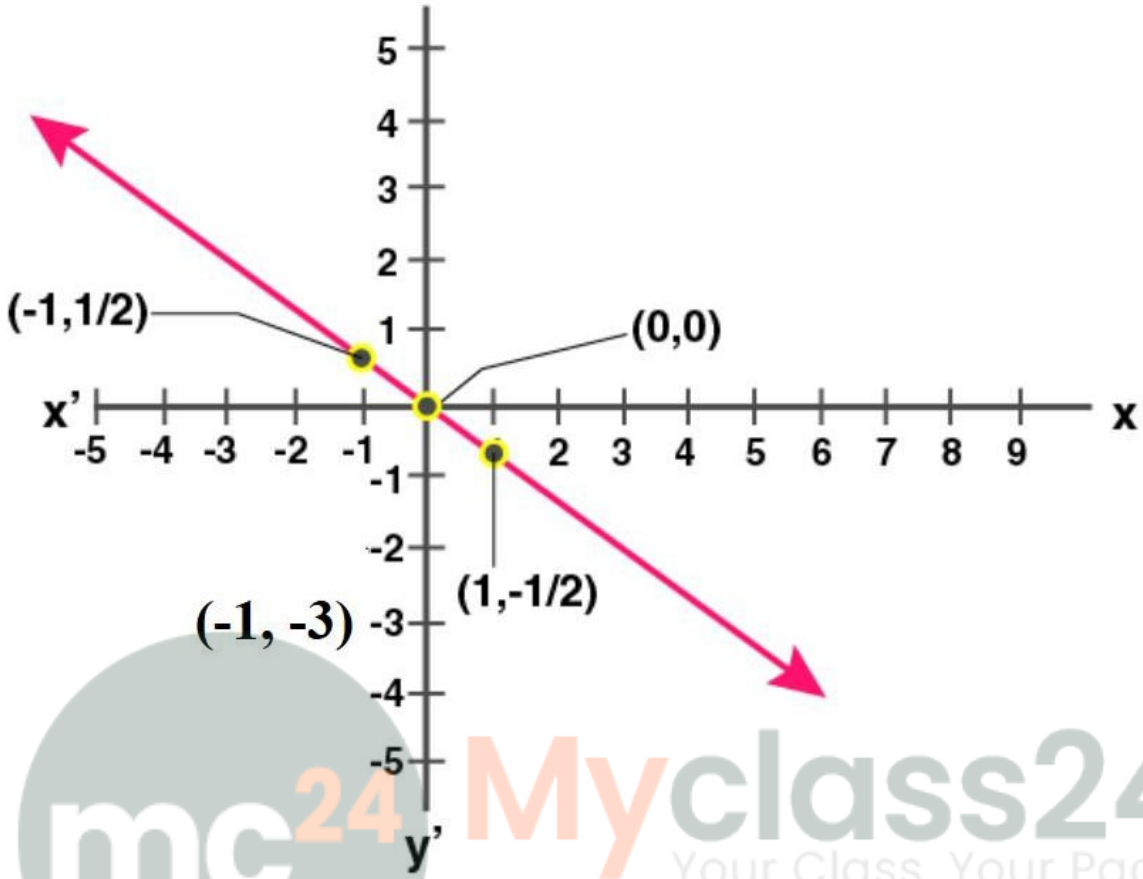
(v)

x	-1	0	1
y	5	0	-5



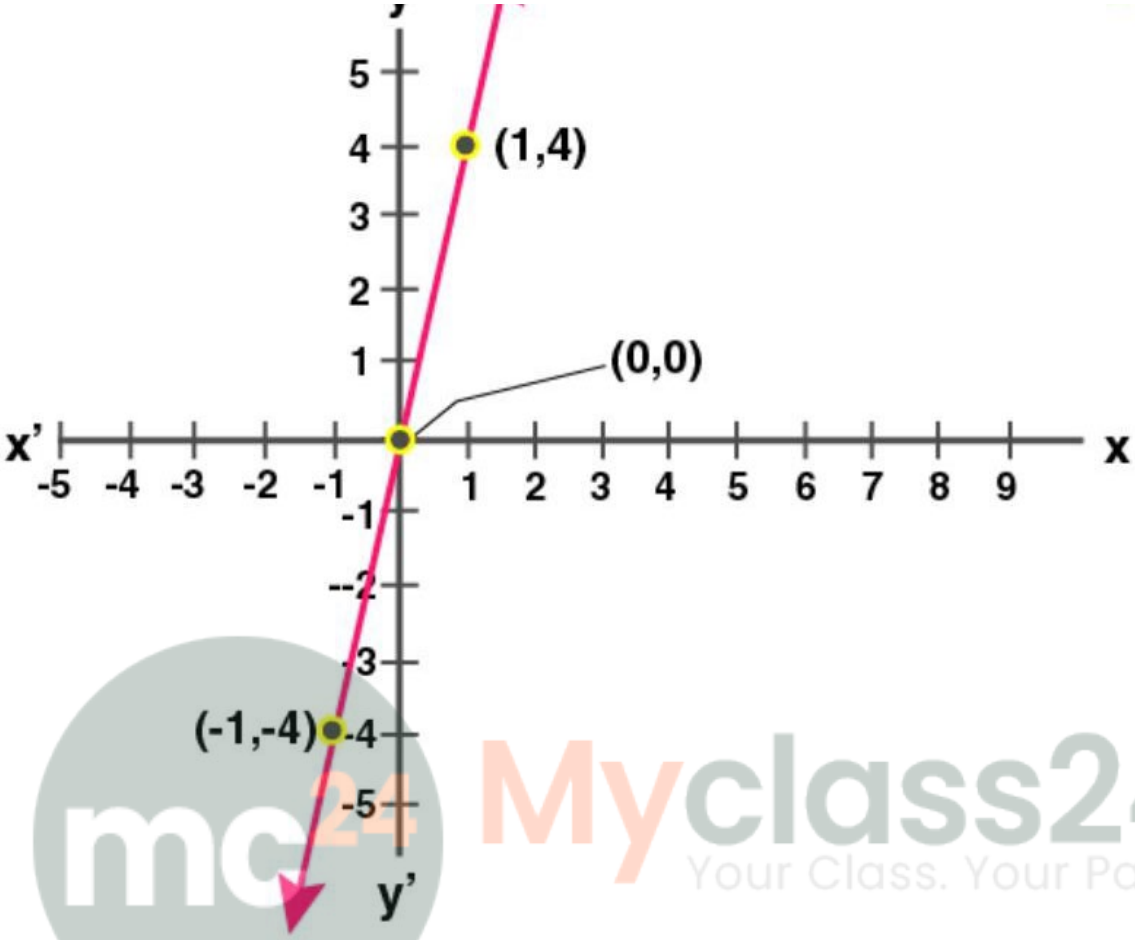
(vi)

x	-1	0	1
y	1/2	0	- ½



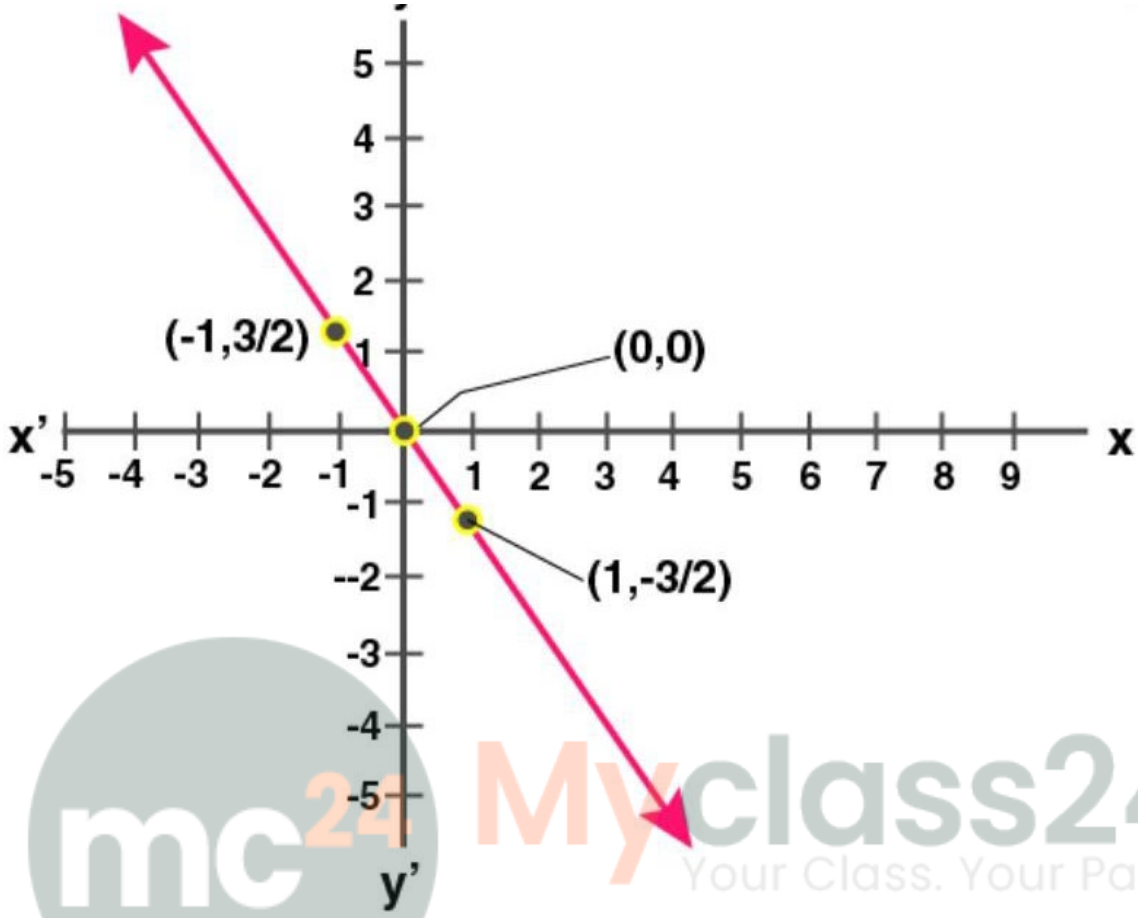
(v)

x	-1	0	1
y	-4	0	4



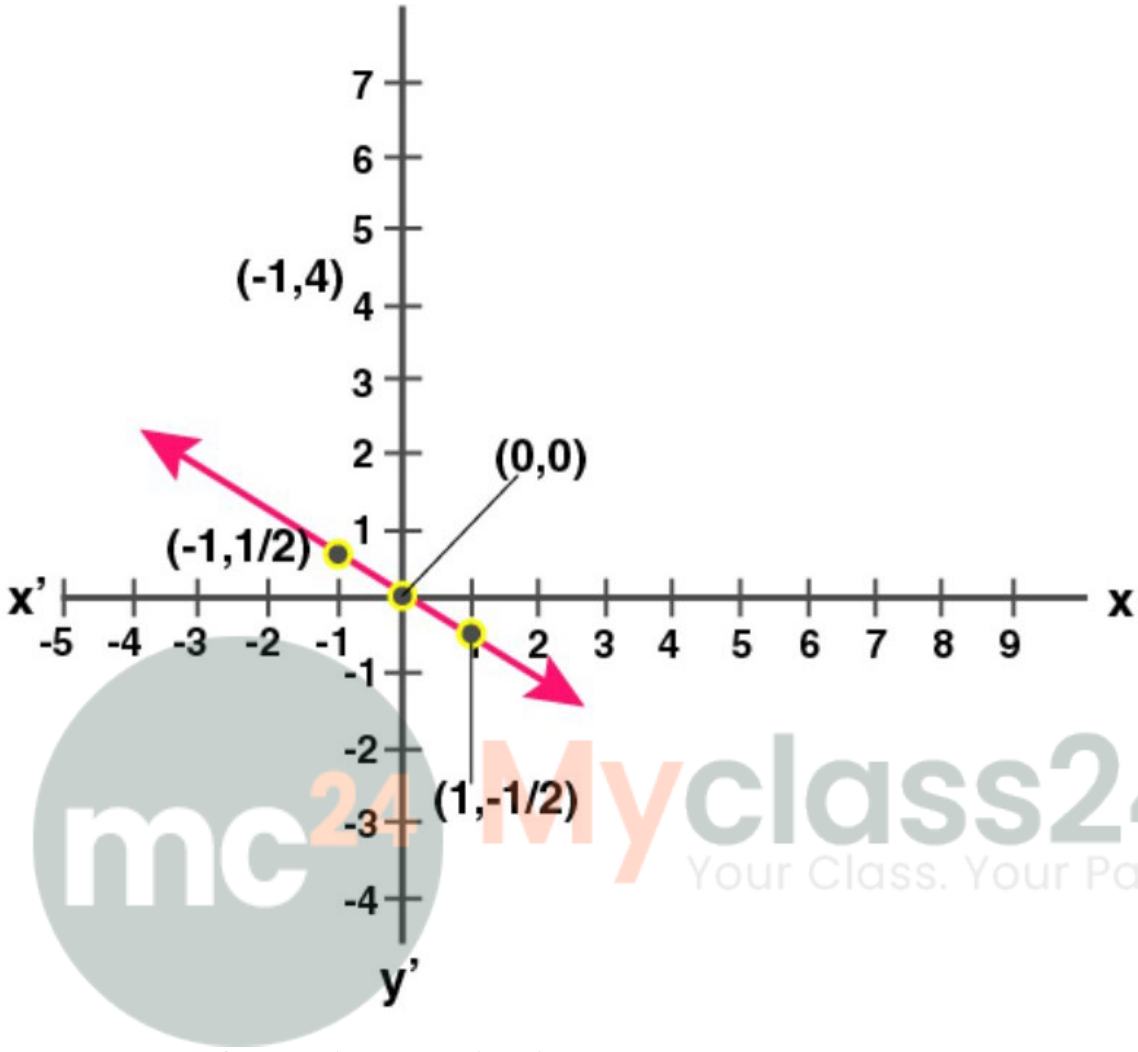
(viii)

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



(ix)

x	-1	0	1
y	½	0	- ½



3. Draw the graph for each linear equation given below:
(i) y = 2x + 3

$(ii) y = \frac{2x}{3} - 1$

$(iii) y = -x + 4$

$(iv) y = 4x - \frac{5}{2}$

$(v) y = \frac{3x}{2} + \frac{2}{3}$

$(vi) 2x - 3y = 4$

$(vii) \frac{x-1}{3} - \frac{y+2}{2} = 0$

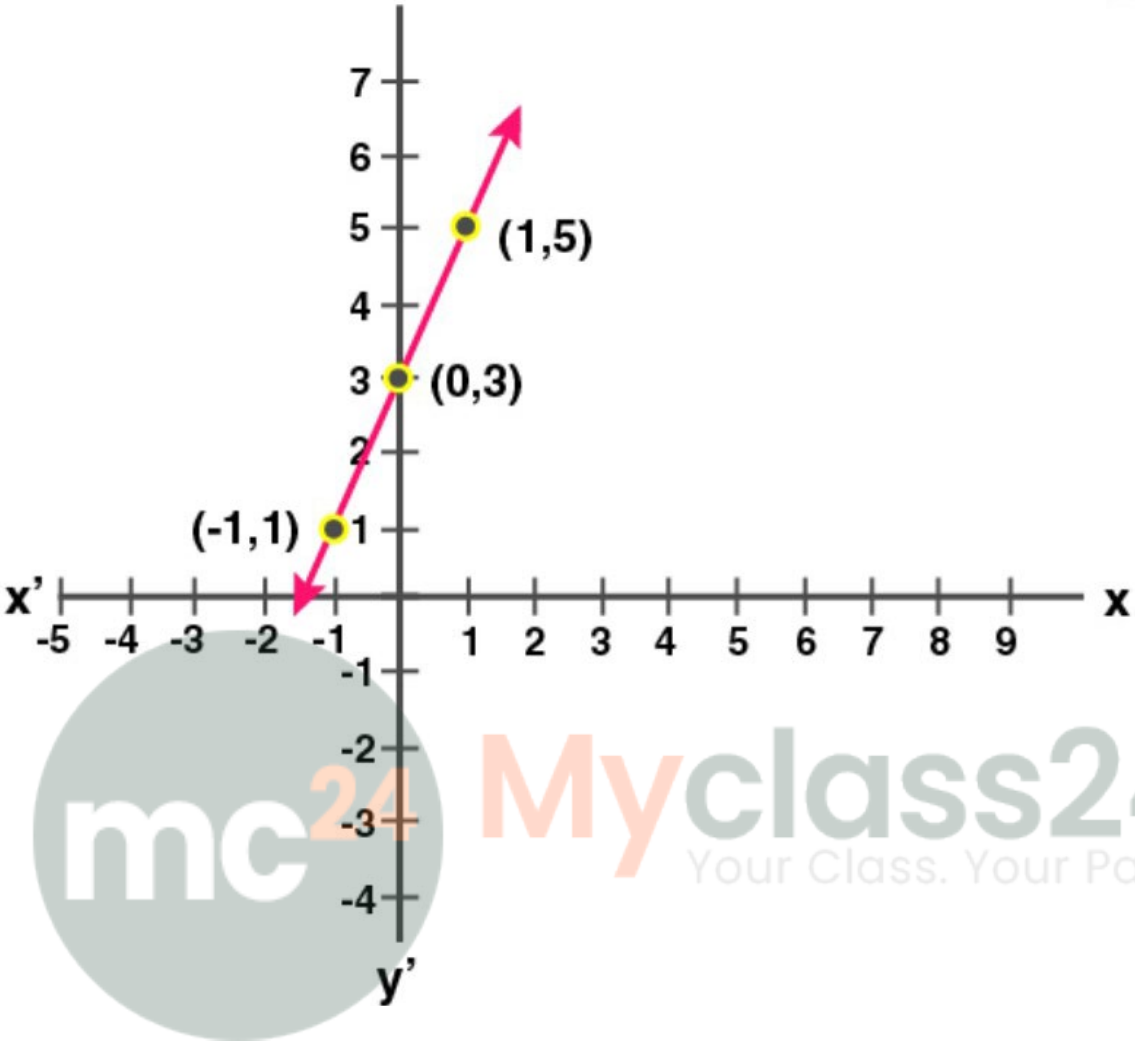
$(viii) x - 3 = \frac{2}{5}(y+1)$

$(ix) x + 5y + 2 = 0$

Solution:

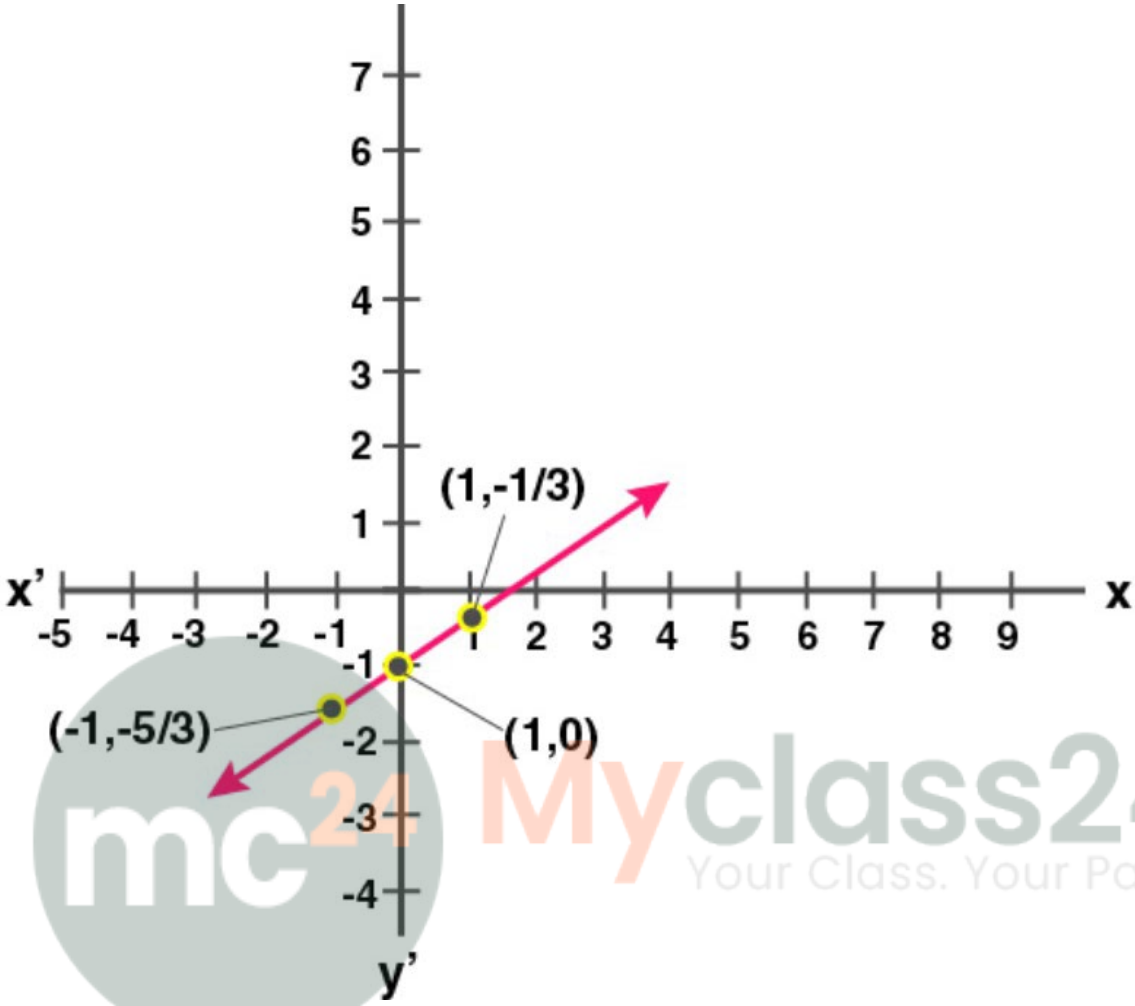
(i)

x	-1	0	1
y	-5/3	3	5



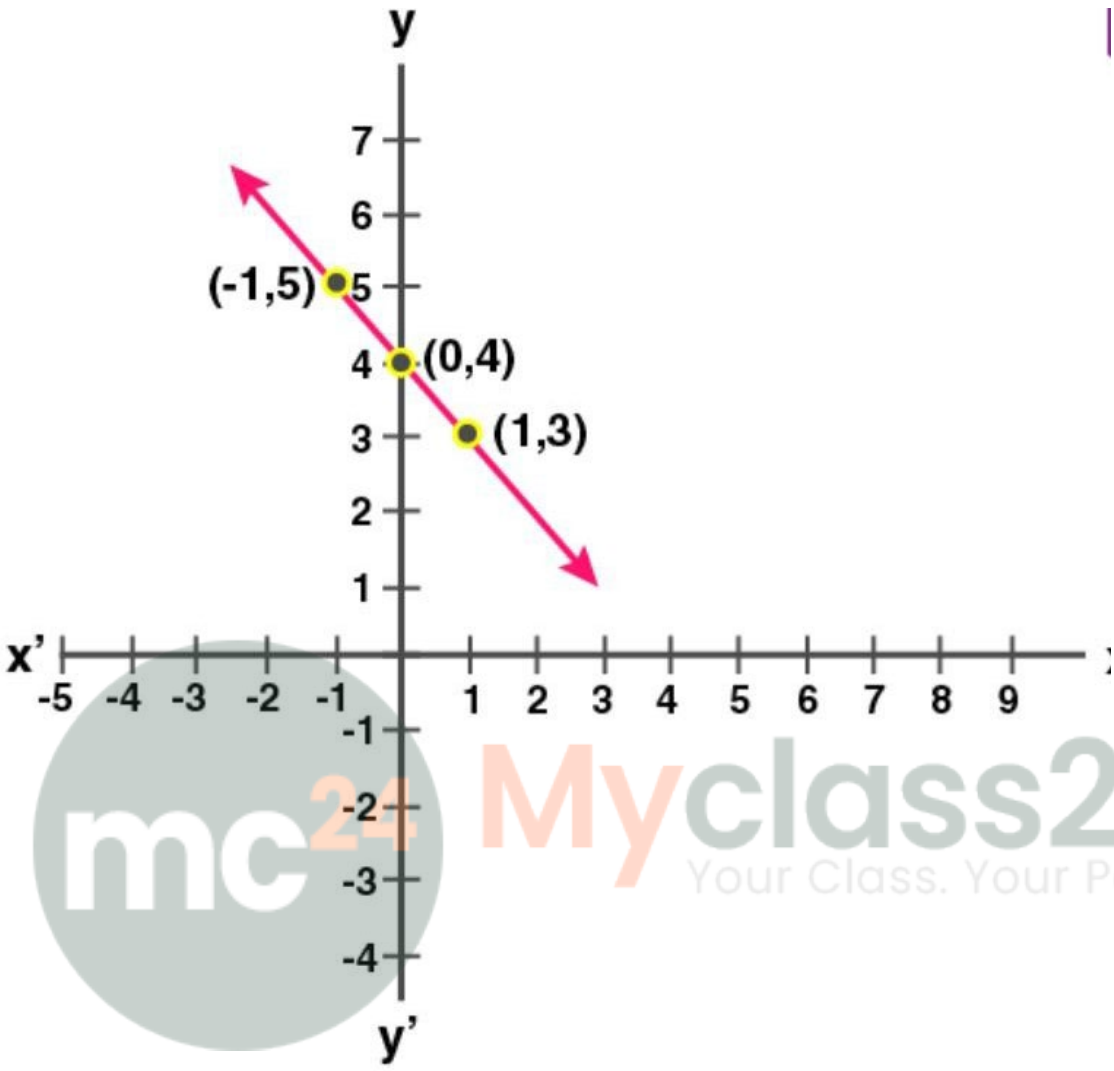
(ii)

x	-1	0	1
y	-5/3	-1	-1/3



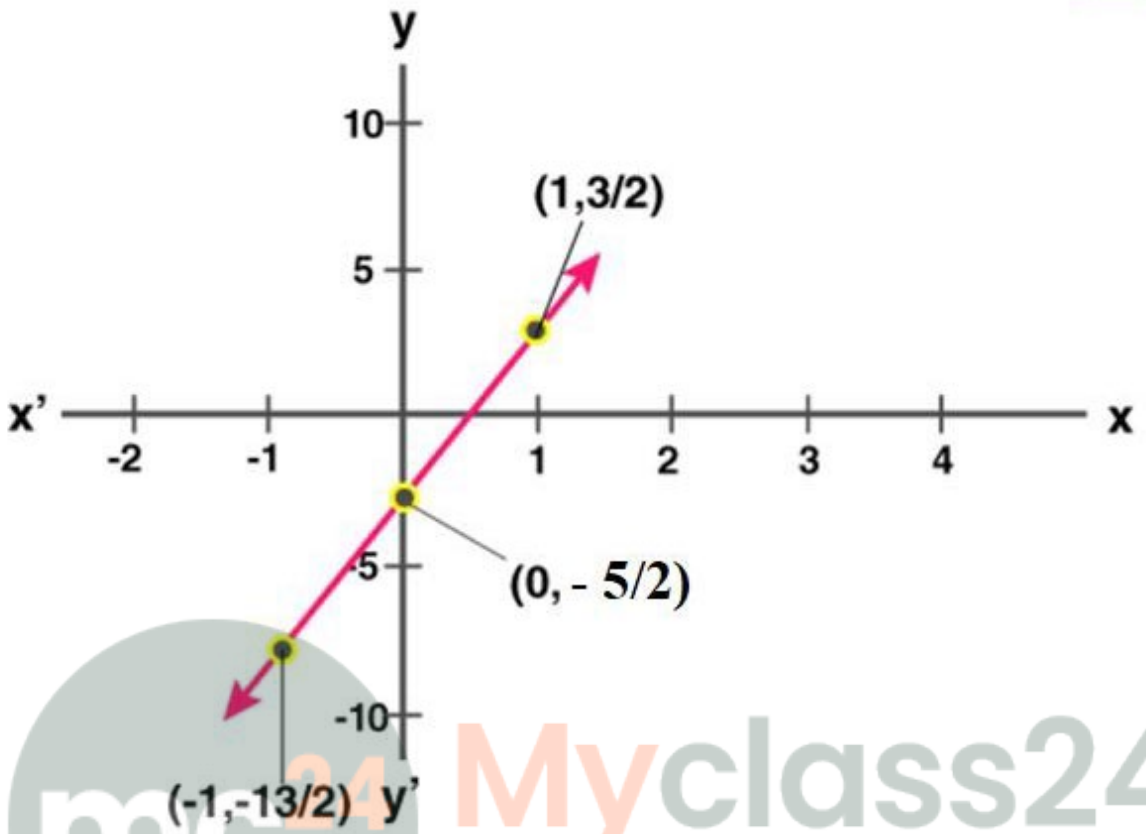
(iii)

x	-1	0	1
y	5	4	3



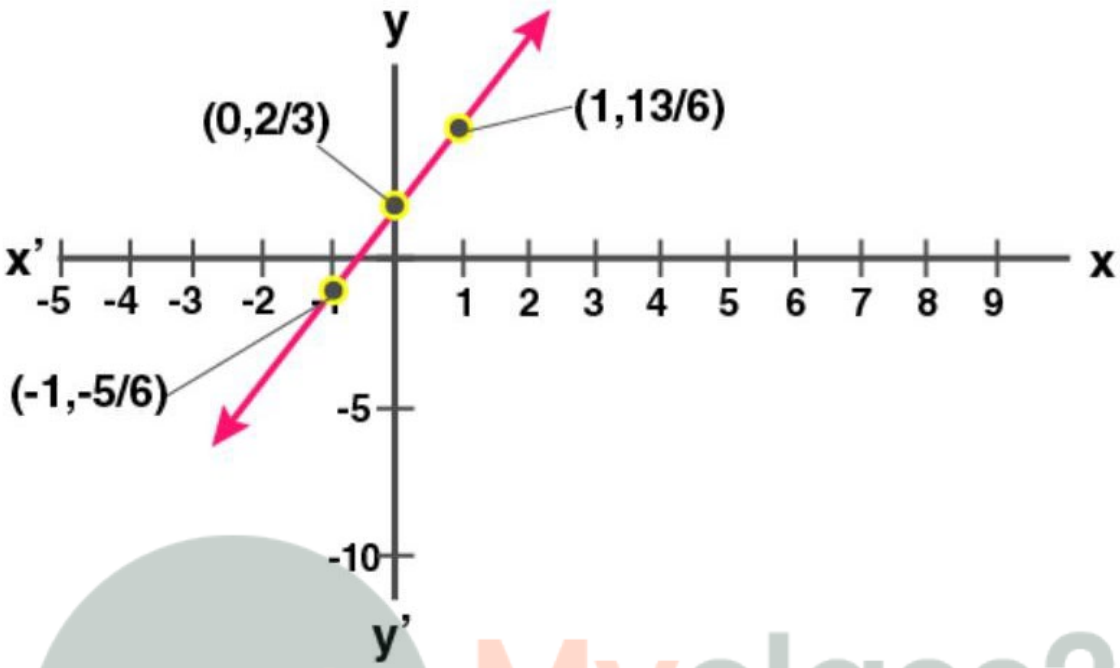
(iv)

x	-1	0	1
y	-13/2	-5/2	3/2



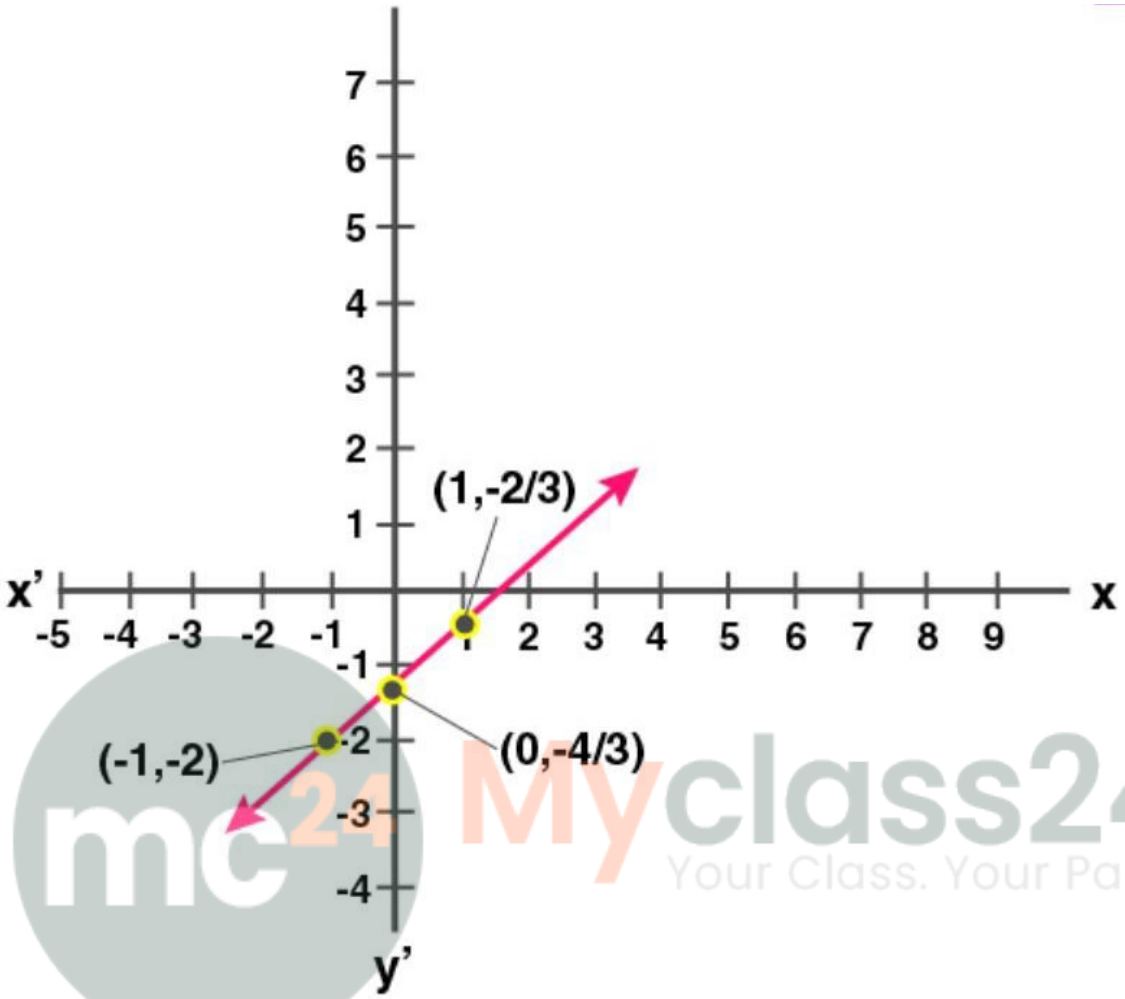
(v)

x	-1	0	1
y	-5/6	2/3	13/6



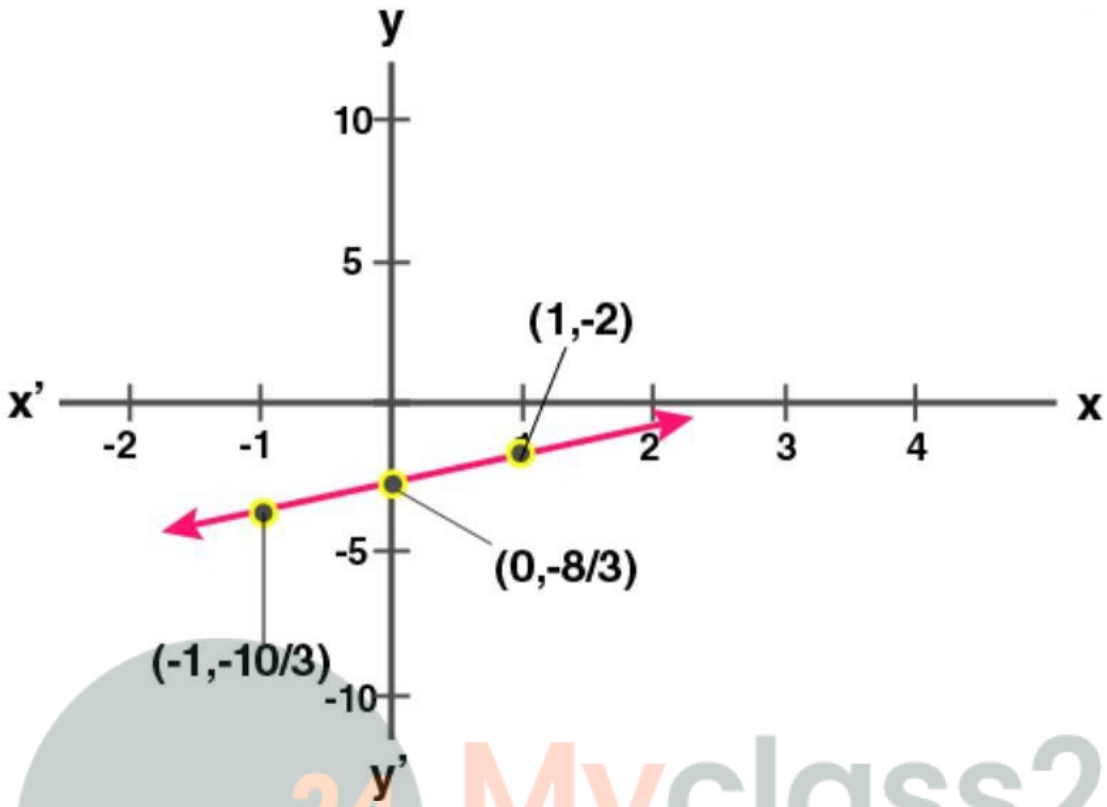
(vi)

x	-1	0	1
y	-2	-4/3	-2/3



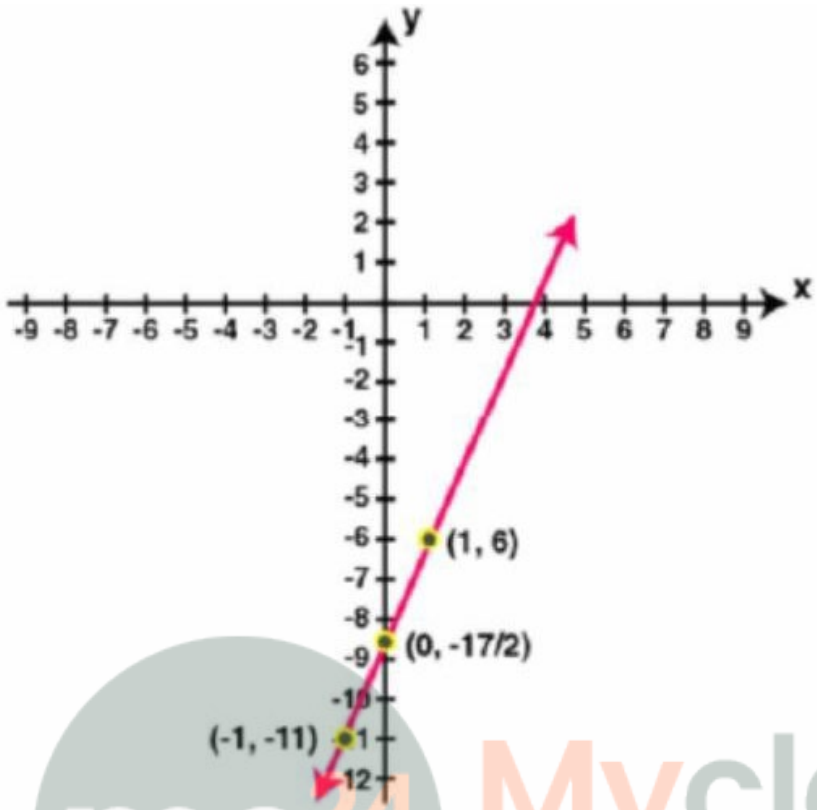
(vii) We can write the equation as
2x – 3y = 8

x	-1	0	1
y	-10/3	-8/3	-2



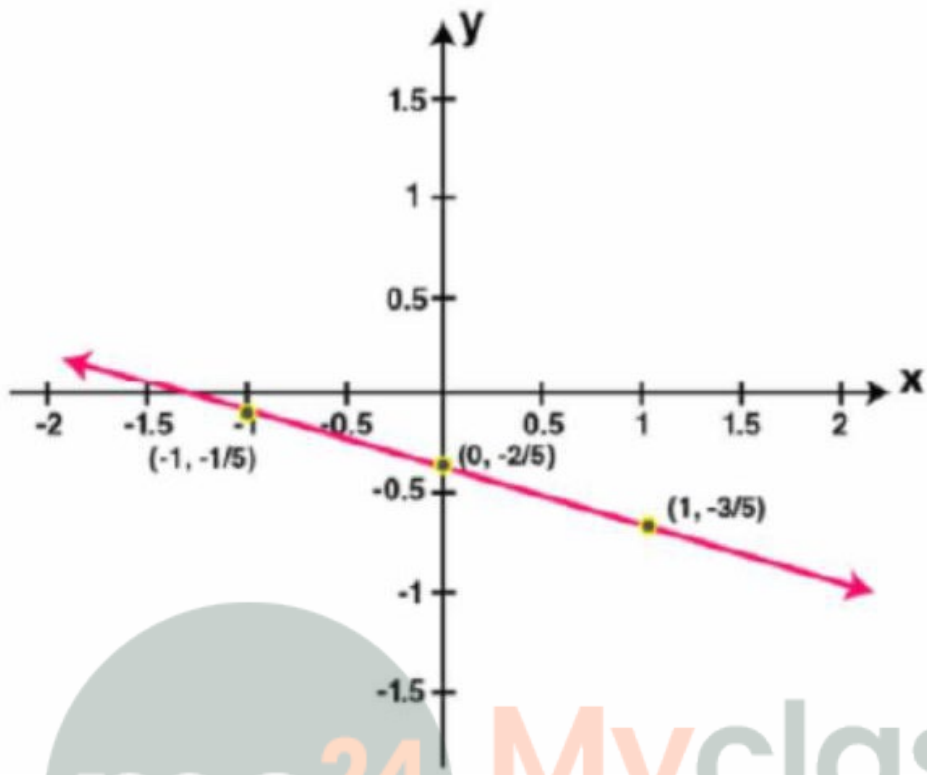
(viii) We can write the equation as
5x – 2y = 17

x	-1	0	1
y	-11	-17/2	-6



(ix)

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



4. Draw the graph for each equation given below:

(i) 3x + 2y = 6

(ii) 2x – 5y = 10

$$(iii)\frac{1}{2}x + \frac{2}{3}y = 5$$

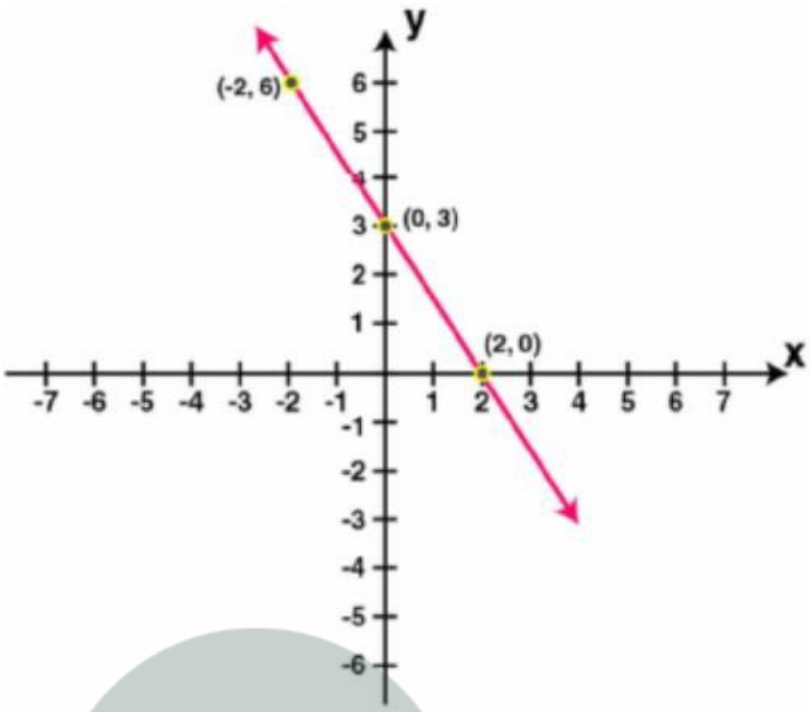
$$(iv)\frac{2x-1}{3} - \frac{y-2}{5} = 0$$

In each case, find the co-ordinates of the points where the graph (line) drawn meets the co-ordinates axes.

Solution:

(i)

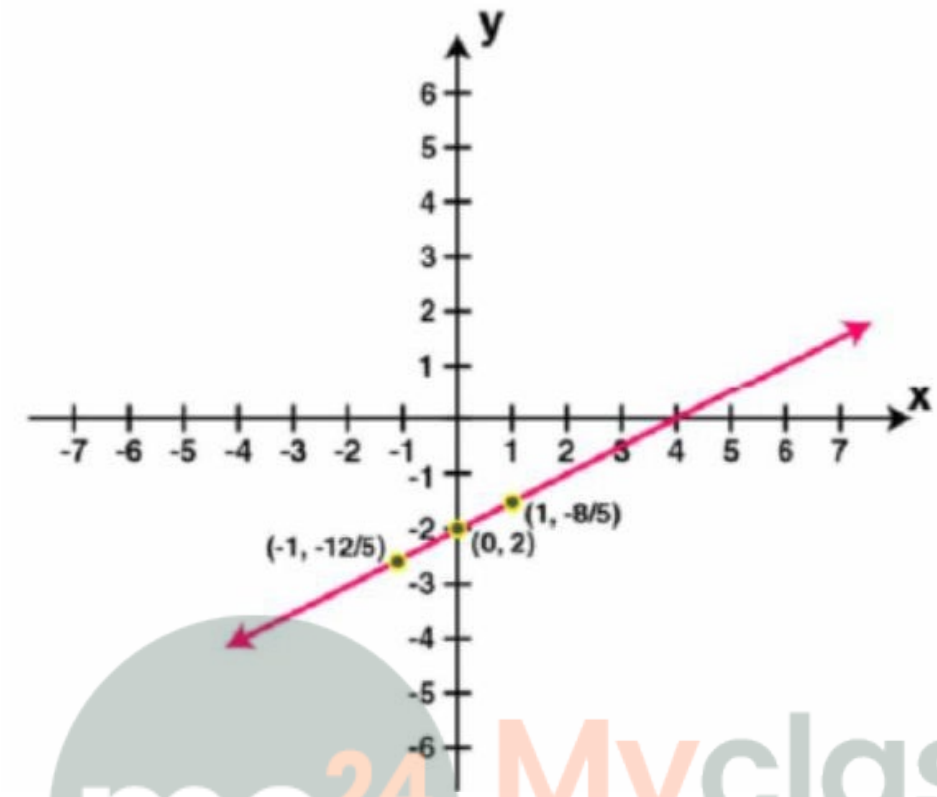
x	-2	0	2
y	6	3	0



From the graph, the line intersects x-axis at (2, 0) and y-axis at (0, 3).

(ii)

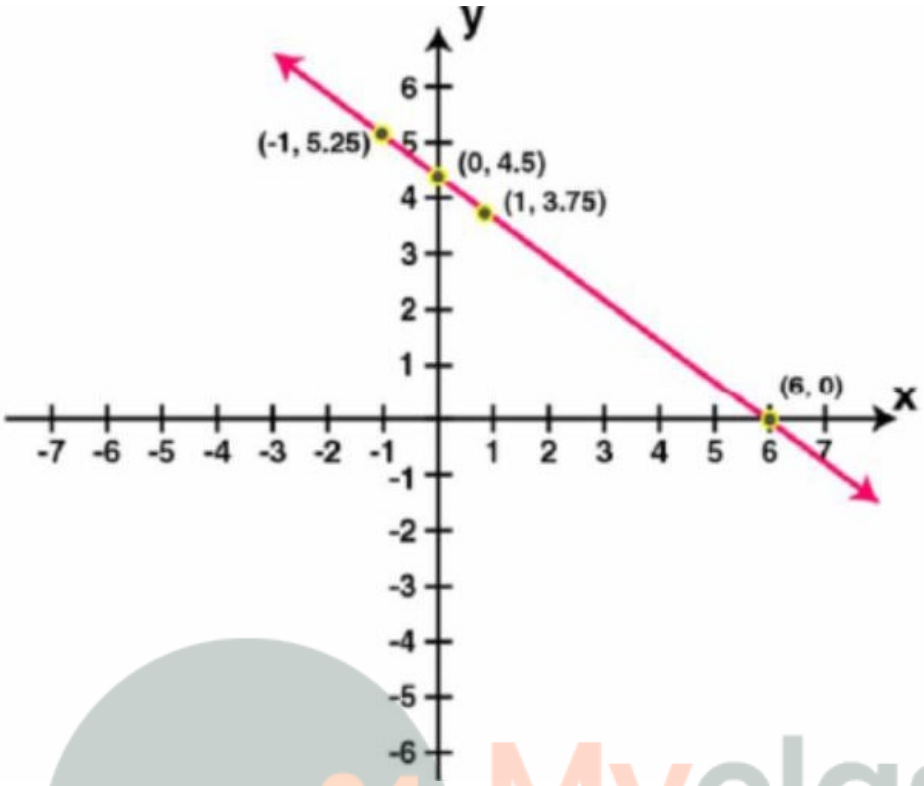
x	-1	0	1
y	-12/5	-2	-8/5



From the graph, the line intersects x-axis at (5, 0) and y-axis at (0, -2).

(iii)

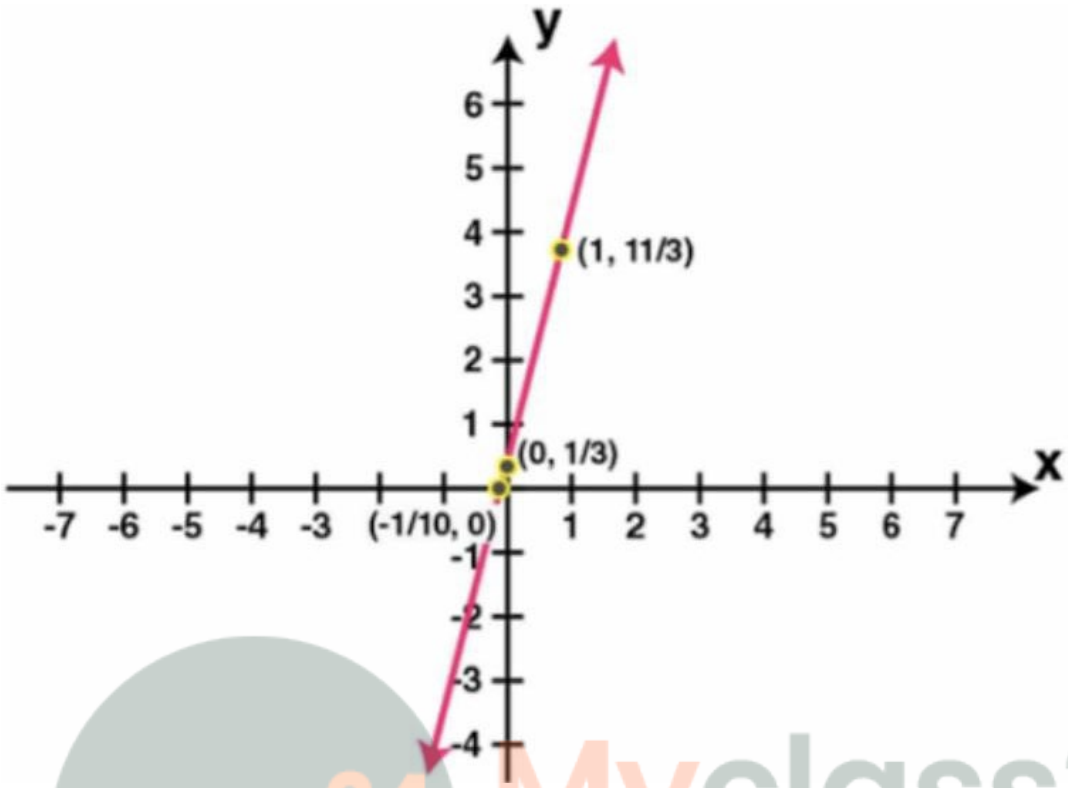
x	-1	0	1
y	5.25	4.5	3.75



From the graph, the line intersects x-axis at (10, 0) and y-axis at (0, 7.5).

(iv)

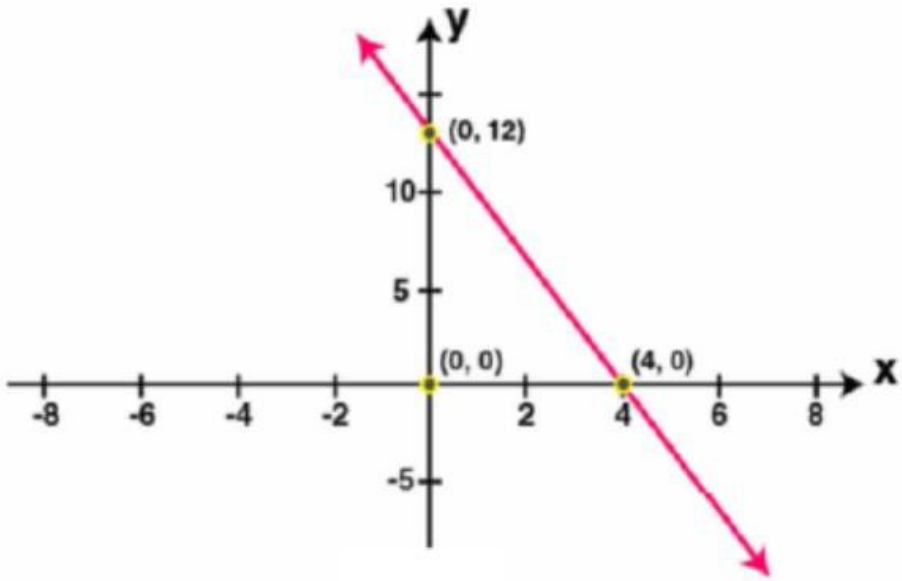
x	-1	0	1
y	-3	1/3	11/3



From the graph, the line intersects x-axis at (-1/10, 0) and y-axis at (0, 4.5).

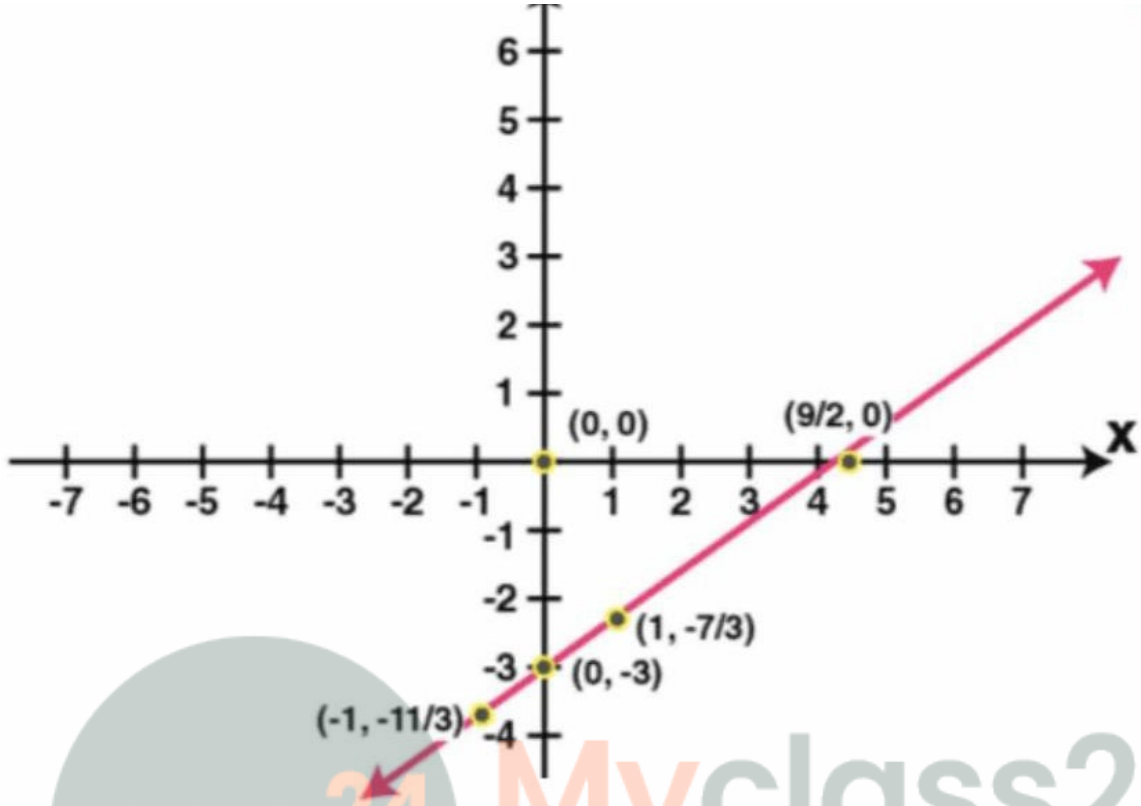
5. For each linear equation, given above, draw the graph and then use the graph drawn (in each case) to find the area of a triangle enclosed by the graph and the co-ordinates axes:
(i) 3x – (5 – y) = 7
(ii) 7 – 3 (1 – y) = - 5 + 2x
Solution:

(i)



We know that
Area of the right triangle obtained = ½ × base × altitude
= ½ × 4 × 12
= 24 sq. units

(ii)



We know that
Area of the right triangle obtained = ½ × base × altitude
= ½ × 9/2 × 3
= 27/4
= 6.75 sq. units