Linear Equation in two Variable

1) Find (k) if $x = 2, y = 1$ is a solution of $2x + 3y = k$

Let $f(a) = 2x + 3y$

So, $2x + 3y = k$

$= 2x + 3y - k = 0$

If $x = 2$ and $y = 1$ is a solution of $2x + 3y = k$

then, $2(2) + 3(1) - k = 0$

$= 4 + 7 - k = 0$

$= 11 - k = 0$

$\therefore k = 11$

Thus the value of k is 11.

2) Find the points where graph of the equation $3x + 4y = 12$ cuts y axis and x-axis.

$3x + 4y = 12$, when

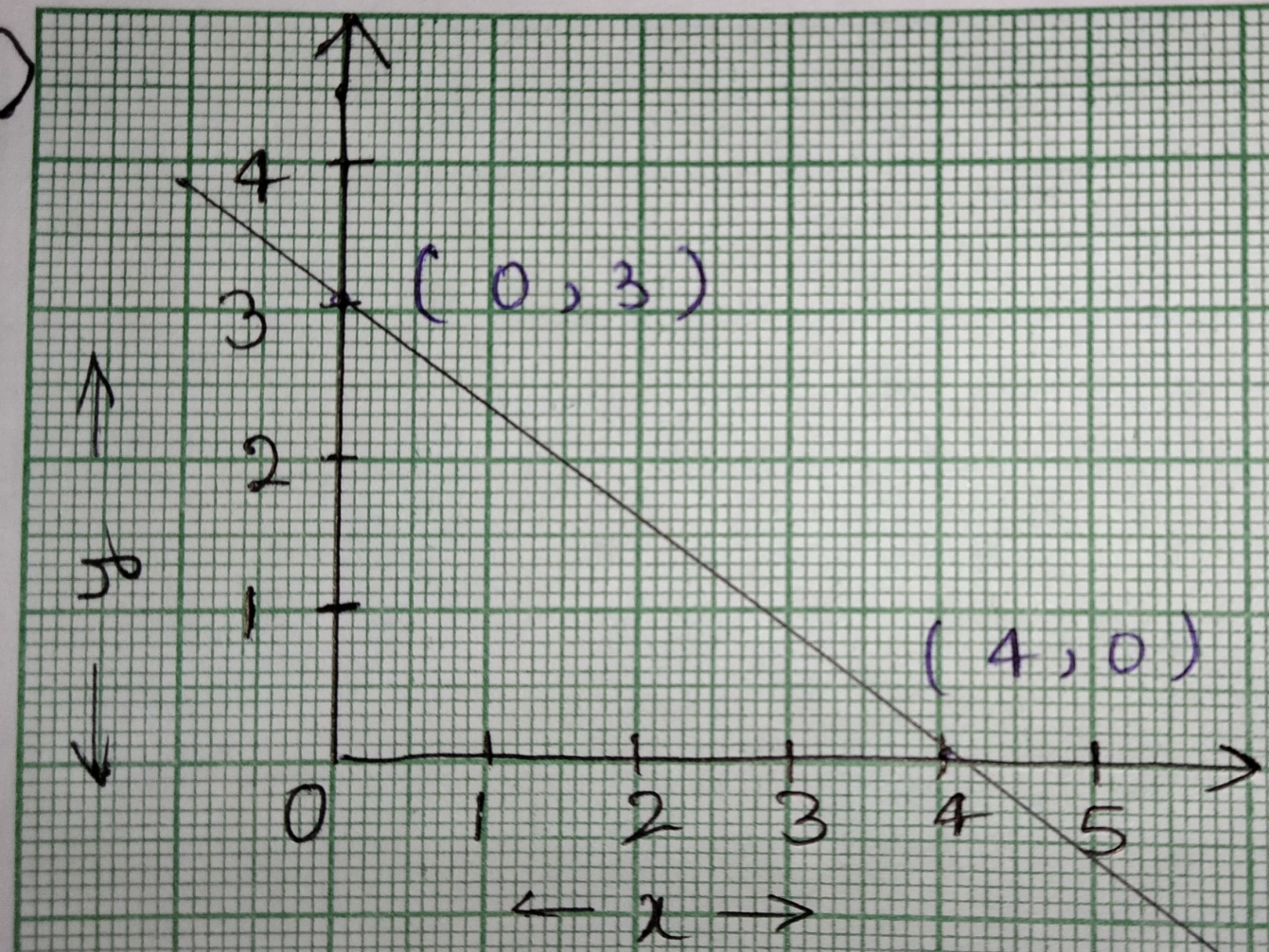
	x	y
i)	0	3
ii)	4	0

$\therefore$ the solution of the equation in 2 variables are $(0, 3)$ and $(4, 0)$.

So, graph of the equation in two variable is :-

Graph

2)



Hence the graph of the equation will met x-axis at (4, 0) and y-axis at (0, 3).

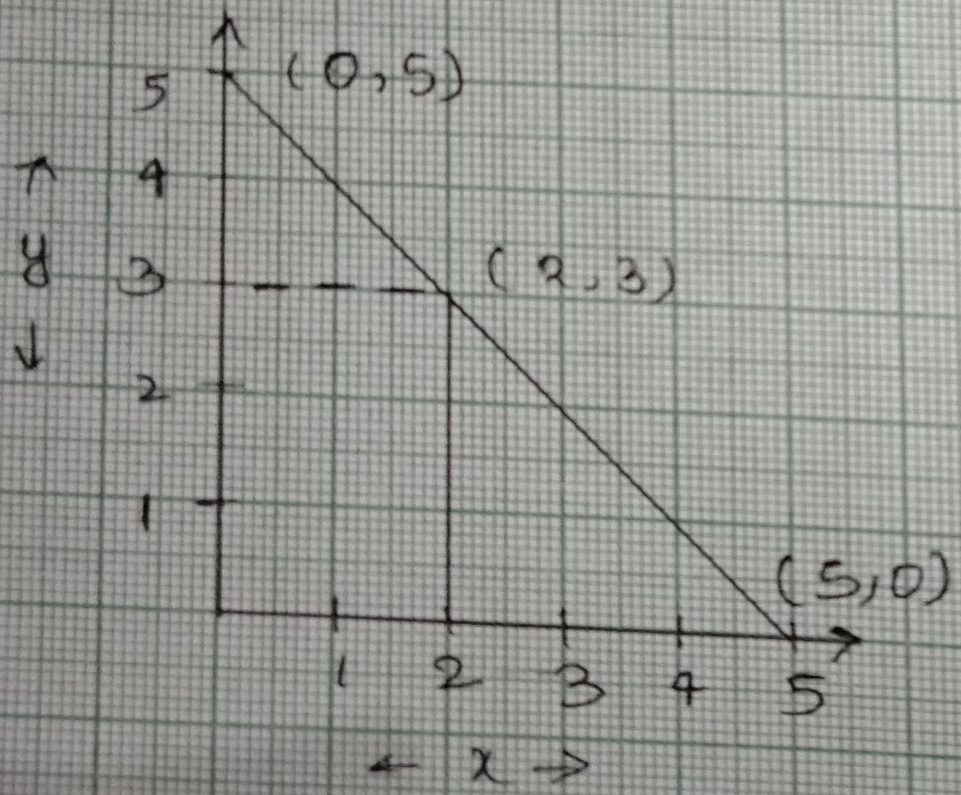
3) At what point does the graph of the linear equation $x + y = 5$ meet a line parallel to the y-axis at a distance 2 units from origin and in positive of x-axis.

The graph of the equation $x + y = 5$ meet a line parallel to the y-axis at a distance from origin and in positive of x axis at point (2, 3).

3> When,

x	0	5
y	5	0

Thus solution of the linear equation in two variables is (0,5) and (5,0).



4) Determine the point on graph of equation $2x+5y=20$ whose x-co-ordinate is 5/2 times its y- co-ordinate.

Let y co-ordinate be $= a$

Then x coordinate will be $= \frac{5a}{2}$

So, $x = \frac{5a}{2}$, $a = \frac{2x}{5}$, and

$= y = a$

$\therefore \frac{2x}{5} = y$

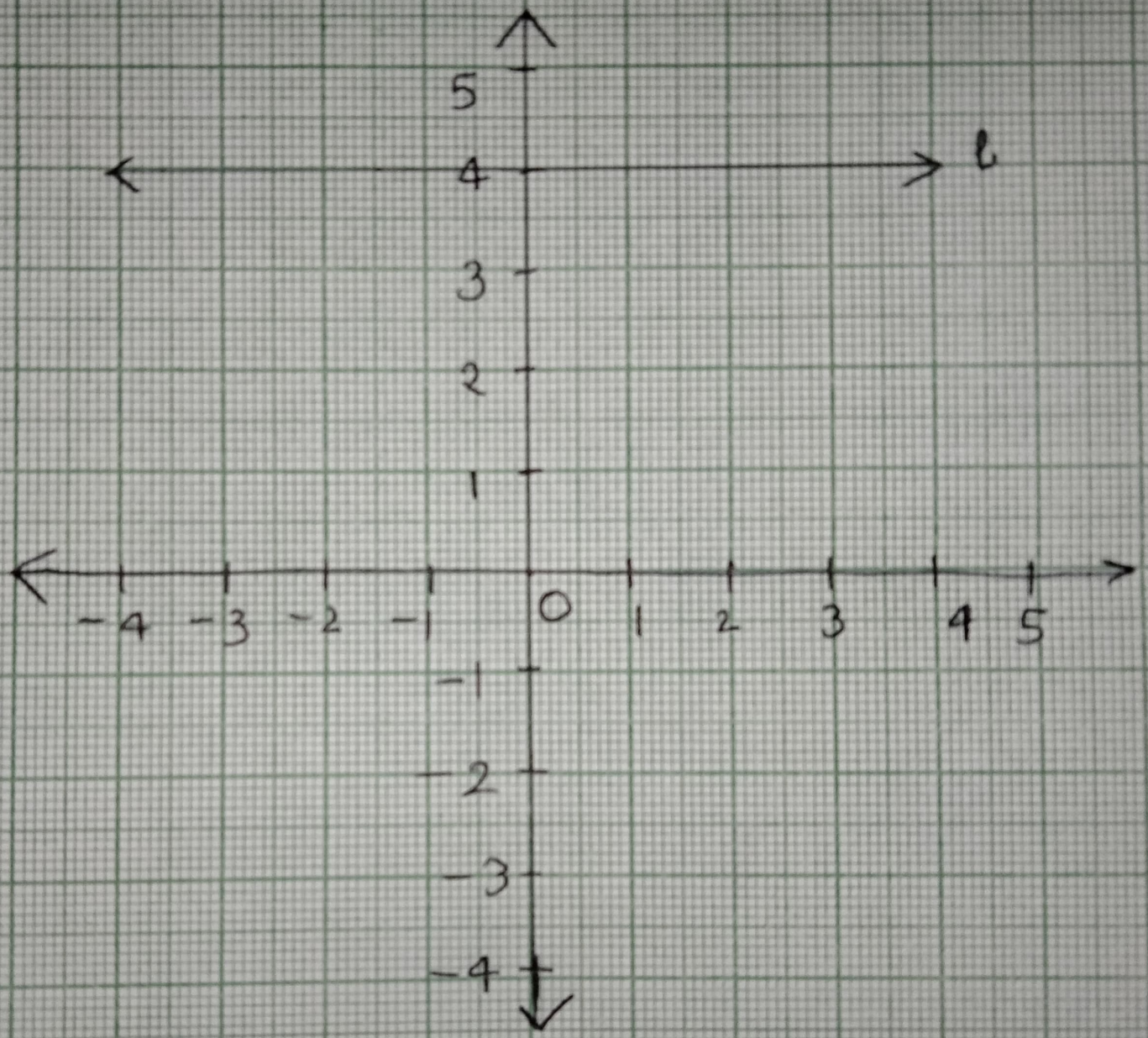
$= \frac{x}{y} = \frac{5}{2}$

Hence the point on graph of the equation $2x+5y = 20$ whose x co-ordinate is 5/2 times of its y co-ordinate is $(5, 2)$.

5) Draw graph of equation represented by a straight line parallel to x-axis and is 4 units above it.

Equation represented by straight line $= (x, 4)$

5)



6) Draw graph of linear equation $y = x$ and $y = -x$ on same cartesian plane. What do you observe.

x	1	2	3	4
y	1	2	3	4

y	1	2	3	4
$-x$	-1	-2	-3	-4

Observation : Both the straight lines meet each other at the origin of graph $(0,0)$.

6)