Chapter - Linear equation in Two variable

Date - 8.7.2020 Ex - 4.3 Based Questions and Answers

① Draw the graph of each of the following linear equations in two variables and also find the coordinates of the point where eq① cuts x-axis & y-axis?

① $2x + y = 7$ ---①

Putting $x = 0$ in eq①

$2x + y = 7$

$\Rightarrow 2(0) + y = 7$

$\Rightarrow y = 7$

Putting $x = 1$ in eq①

$2x + y = 7$

$\Rightarrow 2(1) + y = 7$

$\Rightarrow y = 7 - 2$

$\Rightarrow y = 5$

Putting $x = -1$ in eq①,

$2x + y = 7$

$\Rightarrow 2(-1) + y = 7$

$\Rightarrow y = 7 + 2$

$\Rightarrow y = 9$

Putting $x = 3$, in eq①,

$2x + y = 7$

$\Rightarrow 2(3) + y = 7.$

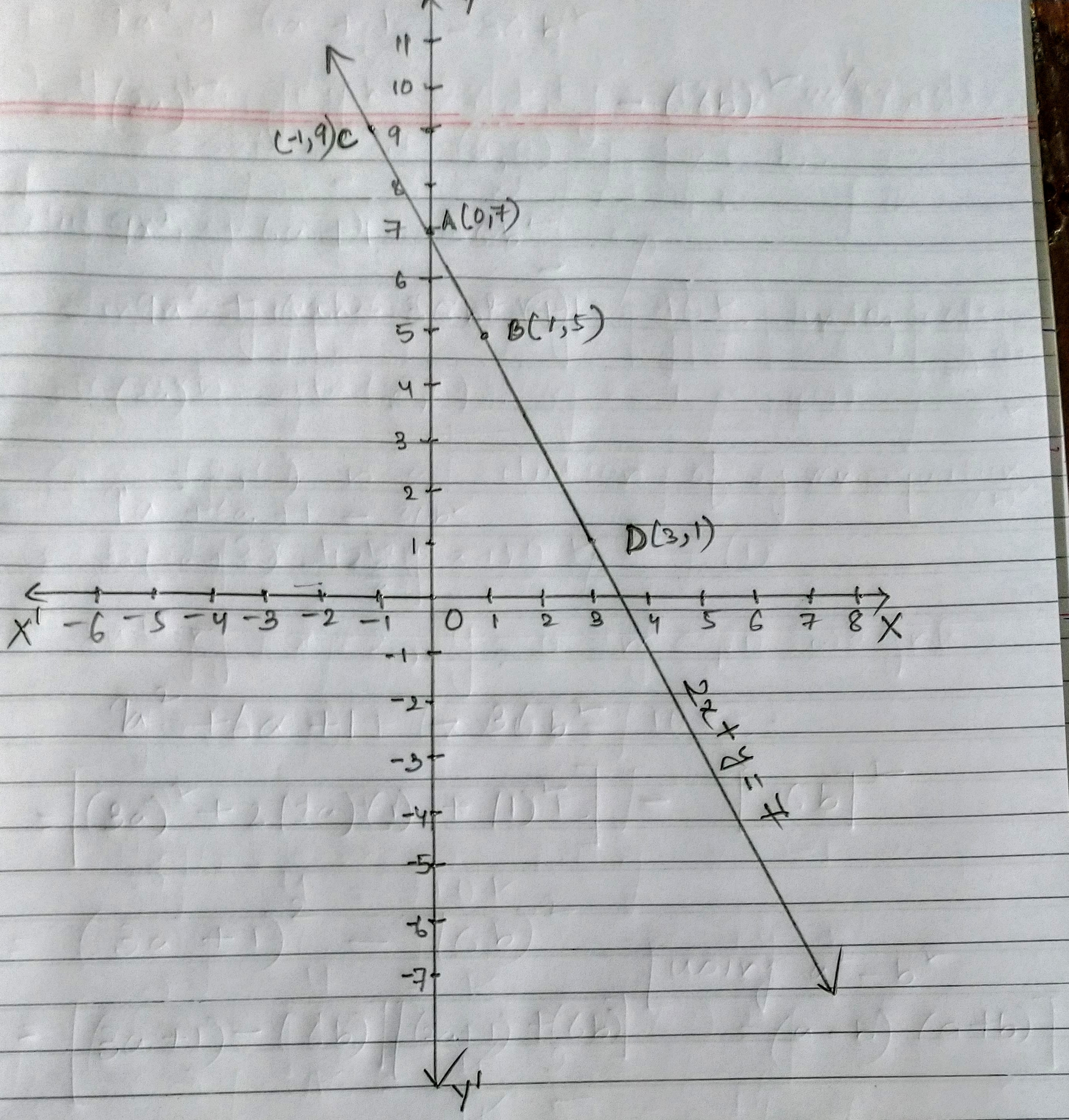
$\Rightarrow 6 + y = 7$

$\Rightarrow y = 7 - 6$

$\Rightarrow y = 1$

x	0	1	-1	3
y	7	5	9	1

We plot A(0,7), B(1,5), C(-1,9), D(3,1) on graph paper and join them by a line.



Hence, line CD represents the required graph of given linear equation.

At $y=0$, in eq (1),

$$2x+y=7$$
$$\Rightarrow 2x+0=7$$
$$\Rightarrow x=\frac{7}{2}$$
$$\Rightarrow x=3.5$$

So, $(\frac{7}{2}, 0)$ is the point where $2x+y=7$ cuts at x-axis and at $(0,7)$ cuts the y-axis

(11) $x = 2$ —— (1)

Solution,

writting $x = 2$ in two variables

we get

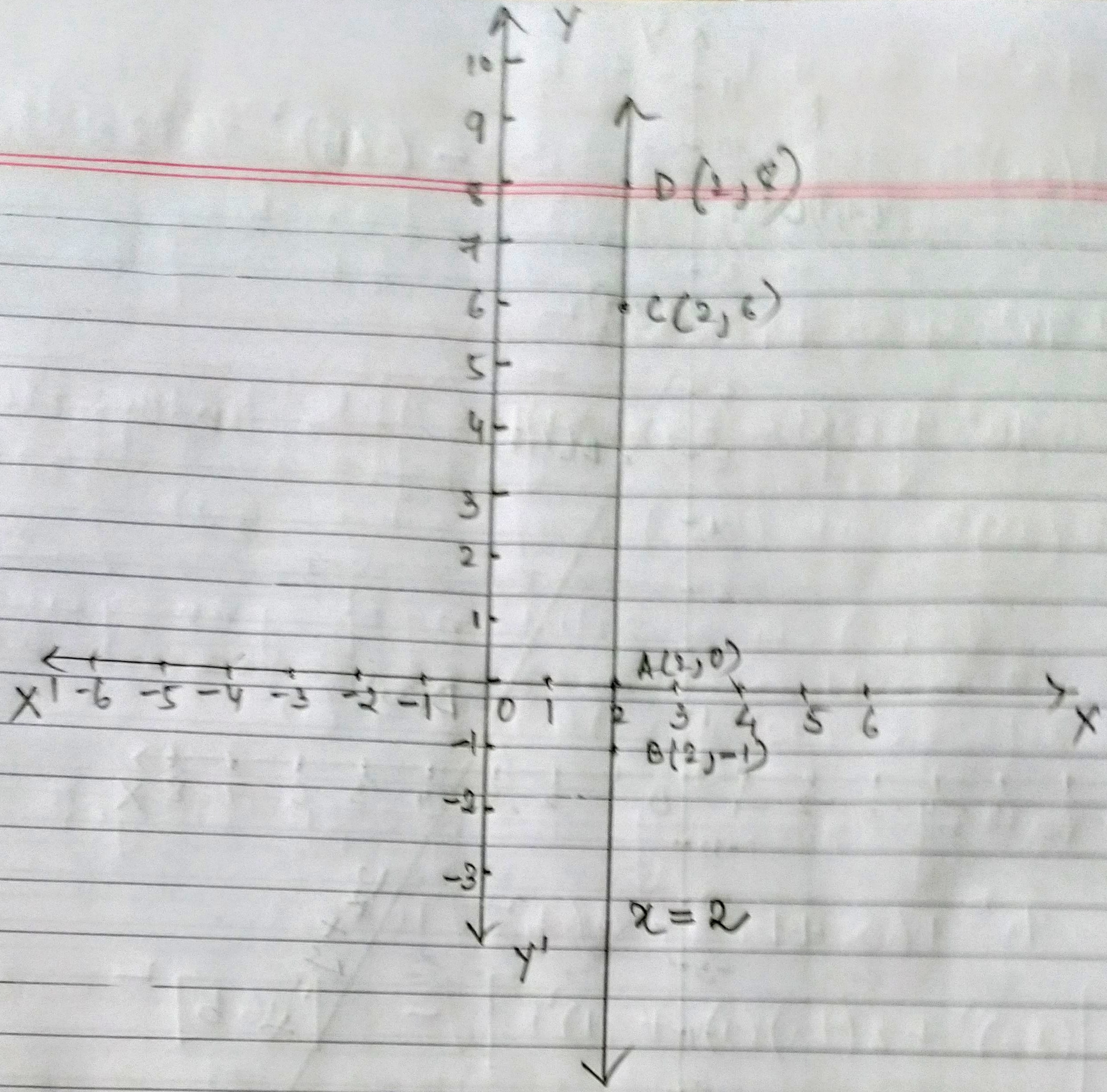
$1 \cdot x + 0 \cdot y = 2$.

So, Here all values of y are permissible because $0 \cdot y$ is always 0.

x	2	2	2	2
y	0	−1	6	8

So, We plot the solutions of eq (1)

A(2, 0), B(2, −1), C(2, 6) and D(2, 8) on graph paper, and join them by a line.



Hence line DB represents the required graph of the linear equation $x=2$ which is parallel to y-axis at a distance of 2 units in the positive direction of x-axis.

$x=2$, cuts x-axis at A(2,0)
But it doesnot cut y-axis as it is parallel to y-axis.