HW

Ch 4 - Linear Eq^n In Two Variables.

1) Find the value of k, if $x = 2$, $y = 1$ is a sol^n of the eq^n $2x + 3y = k$.

Sol^n) $\Rightarrow 2x + 3y = K$

$\Rightarrow 2(2) + 3(1) = K$

$\Rightarrow 4 + 3 = K$

$\Rightarrow K = 7$ [Ans].

2) Find the points where the graph of the eq^n $3x + 4y = 12$ cuts the x-axis & the y-axis.

Sol^n) Let $x = 0$, so, $\Rightarrow 3(0) + 4y = 12$, $\Rightarrow y = 3$.

point is $(0, 3)$ {point on y axis}.

Let $y = 0$, so $\Rightarrow 3x + 4(0)$, $\Rightarrow x = 4$.

point is $(4, 0)$ {point on x axis}.

3) At what point does the graph of the linear eq^n $x+y=5$ meet a line which is ||el to the y-axis at a dis 2 units from the origin O in the positive dir^n of x-axis.

Ans) The coordinates of the points lying on the line ||el to the y-axis at a dis 2 units from the origin O in the positive dir^n of the x-axis are of the form $(2, a)$

Putting $x=2$, $y=a$ in the eq^n $x+y$ we get $a=3$.

Thus the required point is $(2,3)$.

4) Determine the point on the graph of the eq^n $2x+5y=20$ whose x-coordinate is $\frac{5}{2}$ times its ordinate.

Ans) A/Q

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

$\Rightarrow 2x+5y = 20.$

$\Rightarrow 2\left(\frac{5}{2}\right)y + 5y = 20$

$\Rightarrow 10y = 20$

$\Rightarrow y = \frac{20}{10}$

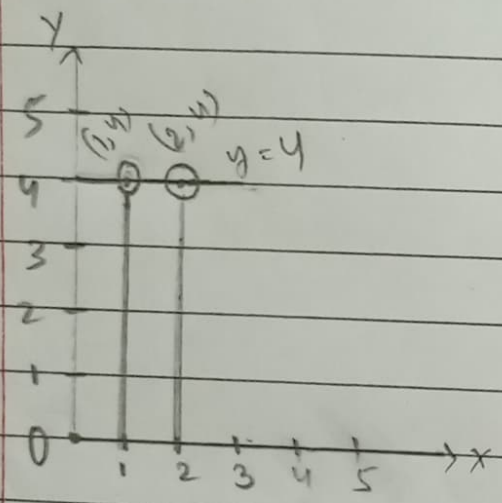
$\Rightarrow y = 2.$

$\Rightarrow x = 5.$

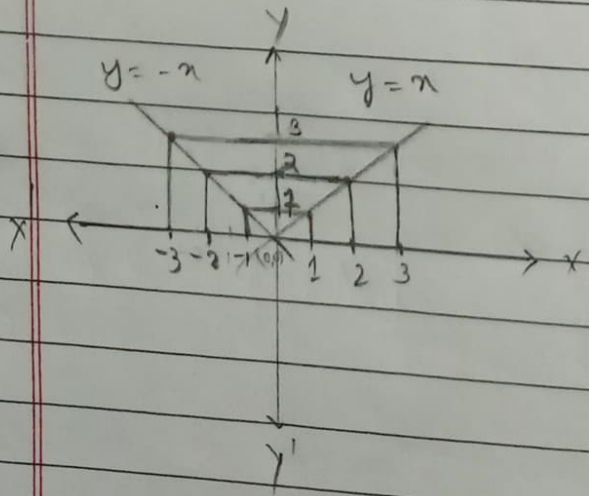
$\therefore$ the point is $(5,2)$.

5) Draw the graph of the eq^n represented by the st. line which is parallel to the x-axis & is 4 units above it.

Ans) Any st. line ||el to x-axis is given by $y = k$, where k is the dis from the line. Here $k = 4$
∴ The eq^n of the line is $y = 4$. Points (1, 4) & (2, 4)



6) Draw the graphs of linear eq^n $y = x$ & $y = -x$ on the same cartesian plane. What do you observe?



The two eq^{n}s ~~intersect~~ intersect at coordinate (0, 0) i.e origin.