MATHS HOMEWORK

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

$x = 2$
$y = 1$

$\Rightarrow 2x + 3y = k$
$\Rightarrow 2(2) + 3(1) = k$
$\Rightarrow 4 + 3 = k$
$\Rightarrow \boxed{k = 7}$

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

$3x + 4y = 12$

If $x = 0$
$\Rightarrow 3(0) + 4y = 12$
$\Rightarrow y = \frac{12}{4} = 3$
$\Rightarrow y = 3$
Coordinate $= (0, 3)$

$y = 1$
$\Rightarrow 3x + 4 = 12$
$\Rightarrow 3x = 8$
$\Rightarrow x = \frac{8}{3}$
Coordinate $= (2\frac{2}{3}, 1)$

$x = 1$
$\Rightarrow 3 + 4y = 12$
$\Rightarrow y = \frac{9}{4}$
Coordinate $= (1, 2\frac{1}{4})$

$x = 2$
$\Rightarrow 6 + 4y = 12$
$\Rightarrow y = \frac{6}{4} = \frac{3}{2}$
$\Rightarrow y = 1\frac{3}{2}$
Coordinate $= (2, 1\frac{1}{2})$

$\therefore$ The points are $(1, 2\frac{1}{4})$; $(2, 1\frac{1}{2})$ & $(2\frac{2}{3}, 1)$

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

$y=2$

$x=?$

equation $\Rightarrow x+y=5$

$\Rightarrow x+2=5$

$\Rightarrow x=3$

So, coordinate is (3, 2)

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

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

$\Rightarrow x = \frac{5}{2}y \rightarrow (1)$

Putting value of (1) in $2x+5y=20 \rightarrow$

$\Rightarrow 2x+5y=20$

$\Rightarrow \frac{5}{2}y+5y=20$

$\Rightarrow \frac{5y+10y}{2}=20$

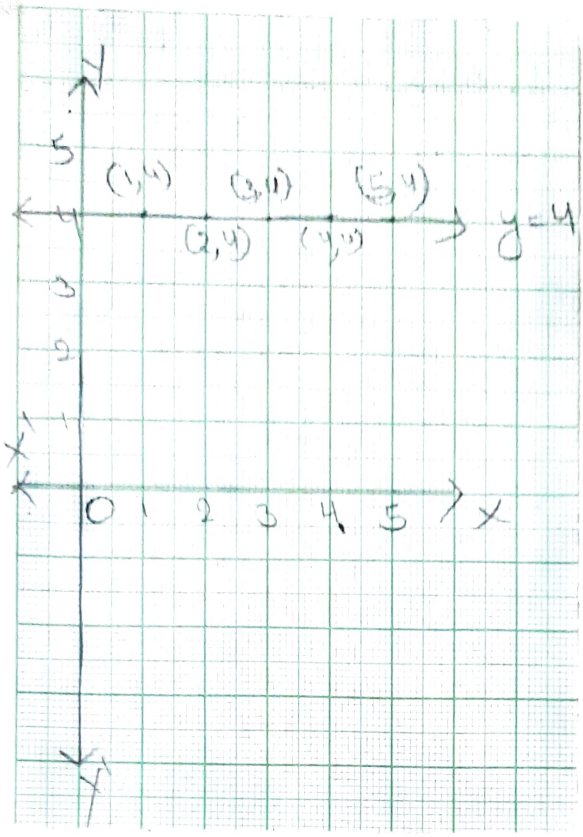
$\Rightarrow 15y=40$

$\Rightarrow y=\frac{40}{15}\frac{8}{3}=\frac{8}{3}$

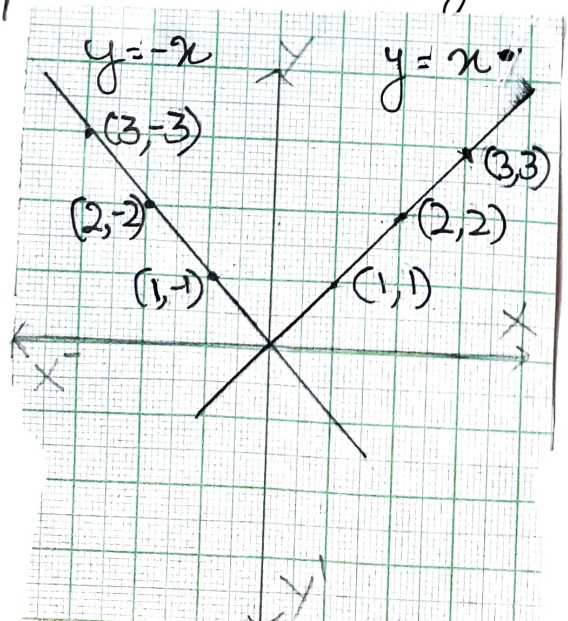
$\Rightarrow x=\frac{5}{2}\times\frac{8}{3}^{4}=\frac{20}{3}$

$\therefore$ Coordinate $= (20/3, 8/3)$

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



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



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