Section 7.2 – Practice Questions

1. Are the following points solutions to the given equations? Are they POINTS on the given LINE?

a) $(2, 4)$ $\quad 2x + 3y = 16$

sub in (x,y)

$2(2) + 3(4) = 16$

$4 + 12 = 16$

$16 = 16$ $\boxed{\text{YES}}$

b) $(-6, 0)$ $\quad \frac{1}{6}x + 13y = 1$

$\frac{1}{6}(-6) + 13(0) = 1$

$-1 = 1$ $\boxed{\text{NO}}$

c) $(8, -2)$ $\quad x - 2y = 4$

$8 - 2(-2) = 4$

$8 + 4 = 4$

$12 = 4$ $\boxed{\text{NO}}$

d) $(-3, -4)$ $\quad 4x + 2y = -20$

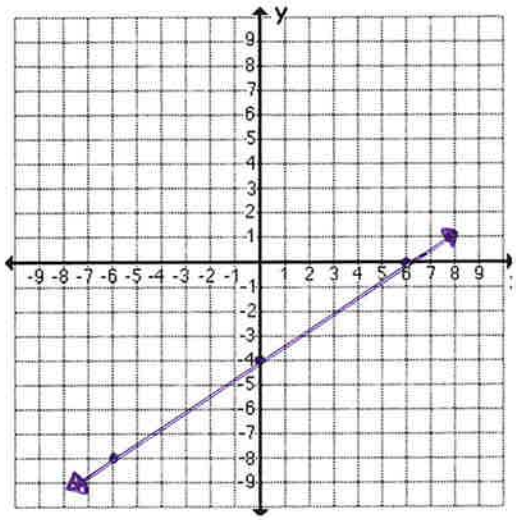
$4(-3) + 2(-4) = -20$

$-12 + -8 = -20$

$-20 = -20$ $\boxed{\text{YES}}$

2. Graph the following equations, use the table of values to organize your coordinates.

i) $2x - 3y = 12$



x	y
0	-4
6	0
-6	-8

(0,-4) y-int

(6,0) x-int

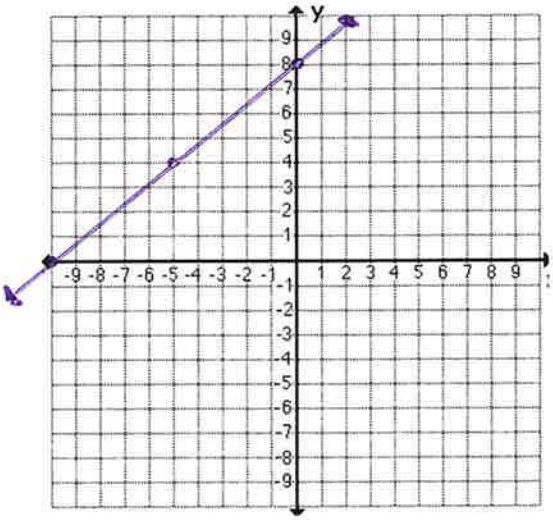
$2(-6) - 3y = 12$

$-12 - 3y = 12$
$+12 \quad +12$

$\frac{-3y}{-3} = \frac{24}{-3}$

$y = -8$

ii) $-4x + 5y = 40$



x	y
0	8
-10	0
-5	4

(0,8) y-int

(-10,0) x-int

picked -5 strategically

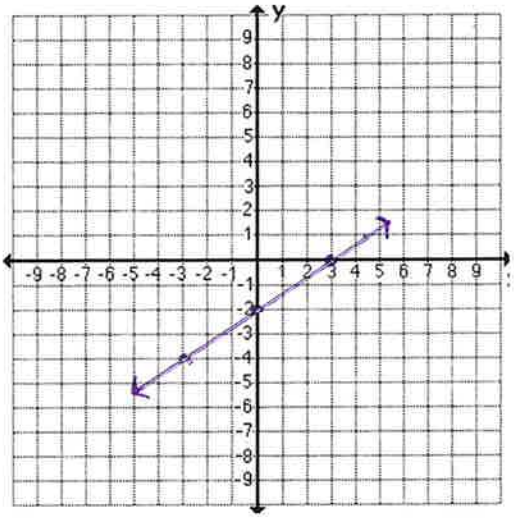
$-4(-5) + 5y = 40$

$20 + 5y = 40$
$-20 \quad -20$

$\frac{5y}{5} = \frac{20}{5}$

$y = 4$

iii) $\frac{2}{3}x - y = 2$



x	y
0	-2
3	0
-3	-4

Multiply by LCD

$\left[\frac{2}{3}x - y = 2\right] \times 3$

$2x - 3y = 6$

$2(-3) - 3y = 6$

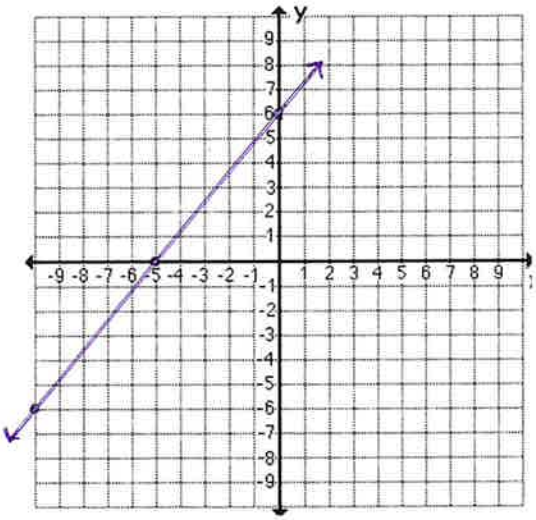
$-6 - 3y = 6$

$+6 \qquad +6$

$\frac{-3y}{-3} = \frac{12}{-3}$

$y = -4$

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



x	y
0	6
-5	0
-10	-6

Multiply by LCD

$\left[-\frac{3}{5}x + \frac{1}{2}y = 3\right] \times 10$

$-6x + 5y = 30$

$-6(-10) + 5y = 30$

$60 + 5y = 30$

$-60 \qquad -60$

$\frac{5y}{5} = \frac{-30}{5}$

$y = -6$

3. How many points are there on a line? Explain your thinking.

Infinite

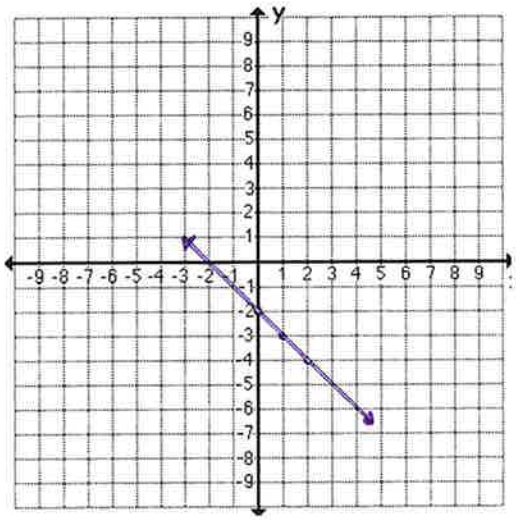
4. Using your algebraic logic, manipulate the STANDARD FORM equations in to SLOPE-INTERCEPT equations and graph them.

a) $2x + 2y = -4$

$-2x \qquad -2x$

$\frac{2y}{2} = \frac{-2x}{2} - \frac{4}{2}$

$y = -x - 2$



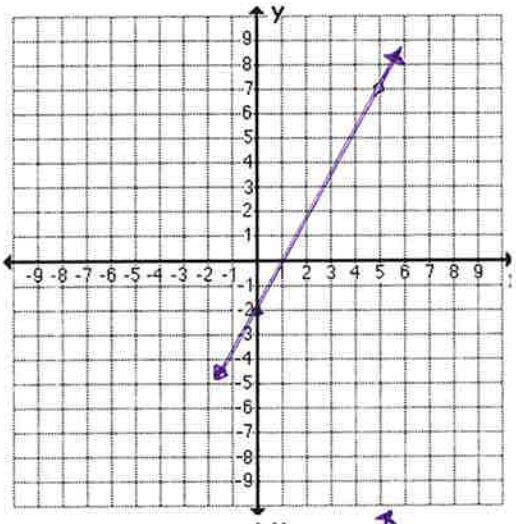
b) $\left[\frac{3}{5}x - \frac{2}{3}y = \frac{2}{3}\right] \times 15$

$9x - 5y = 10$

$-9x \qquad -9x$

$\frac{-5y}{-5} = \frac{-9x}{-5} + \frac{10}{-5}$

$y = \frac{9x}{5} - 2$

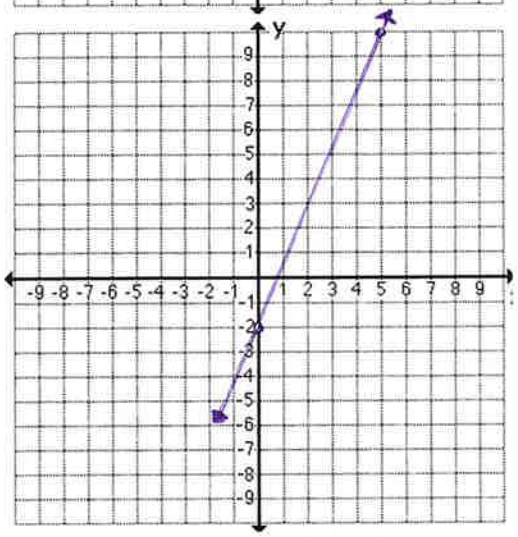


c) $12x - 5y = 10$

$-12x \qquad -12x$

$\frac{-5y}{-5} = \frac{-12x}{-5} + \frac{10}{-5}$

$y = \frac{12x}{5} - 2$

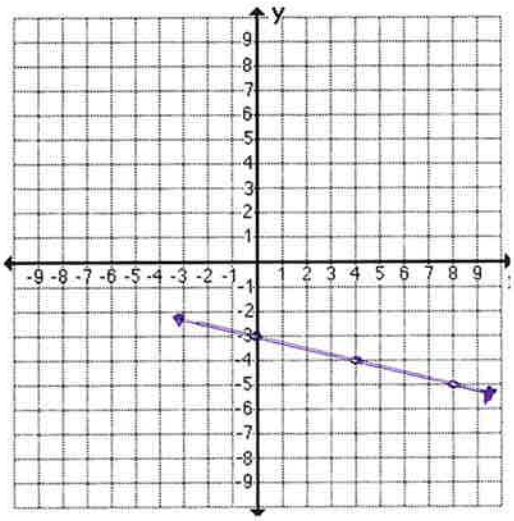


d) $\left[-\frac{1}{6}x - \frac{2}{3}y = 2\right]^{6}$

$-x - 4y = 12$
$+x \qquad +x$

$\frac{-4y}{-4} = \frac{x}{-4} + \frac{12}{-4}$

$y = -\frac{1}{4}x - 3$



5. Using your algebraic logic, manipulate the SLOPE-INTERCEPT to STANDARD FORM, remember that $Ax + By = C$ has NO FRACTIONS and $A > 0$

a) $\left[y = \frac{2}{5}x + 6\right]^{5}$

$5y = 2x + 30$
$-5y \qquad -5y$

$0 = 2x - 5y + 30$
$-30 \qquad -30$

$\boxed{2x - 5y = -30}$

b) $y = -7x - 4$
$+7x \qquad +7x$

$\boxed{7x + y = -4}$

c) $\left[y = 5x - \frac{2}{3}\right]^{3}$

$3y = 15x - 2 \rightarrow 0 = 15x - 3y - 2$
$-3y \qquad -3y \qquad +2 \qquad +2$

$\boxed{15x - 3y = 2}$

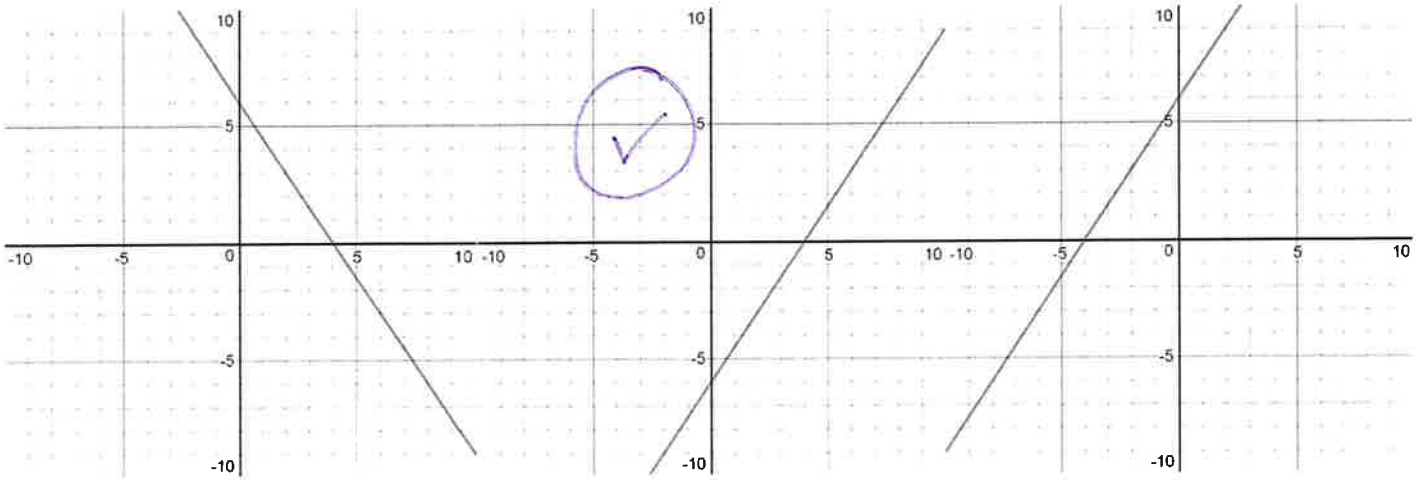
d) $-4 + 3x = y$
$+4 \qquad +4$

$3x = y + 4$
$-y \qquad -y$

$\boxed{3x - y = 4}$

(4,0)
(0,-6)

6. Which graph represents $3x - 2y = 12$ How do you know?



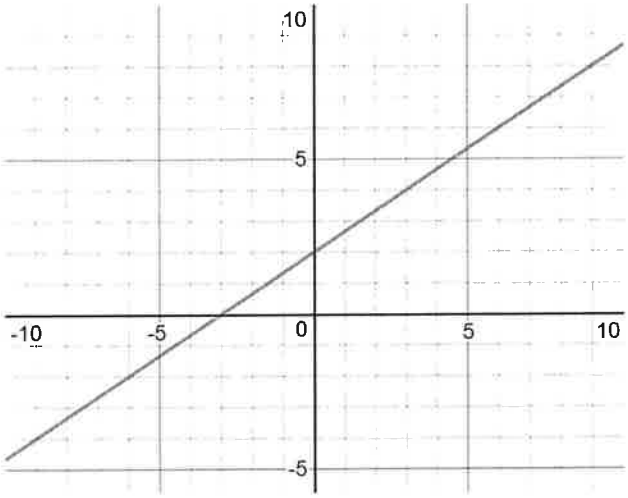
Explanation Goes Here

7. Which equation matches the graph below:

$2x + 3y = 6$ × (-3,0)

$-2x - 3y = 6$ ✓× (0,2)

$\boxed{2x - 3y = -6}$ ✓✓



Explanation Goes Here