Math 9: Linear Relations Quiz #2

Full credit will only be awarded for all work shown in a neat and organized manner.

1. For both equations below, identify the slope and the y-intercept, then graph both (**include labels**!)
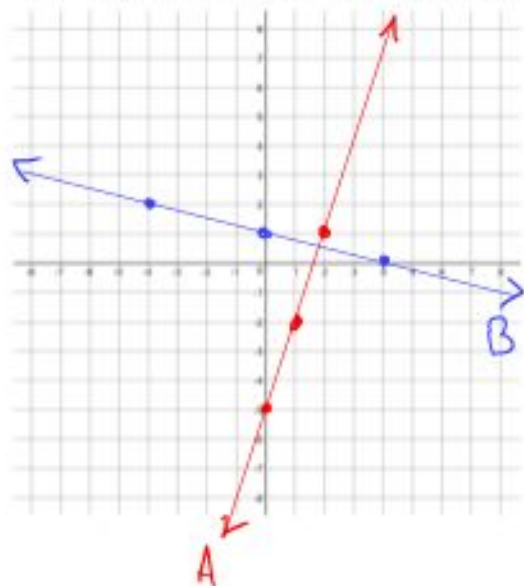
A: $y = 3x - 5$

Slope = ___3___   y-intercept = ___-5___

$(0, -5)$
$(1, -2)$
$(2, 1)$
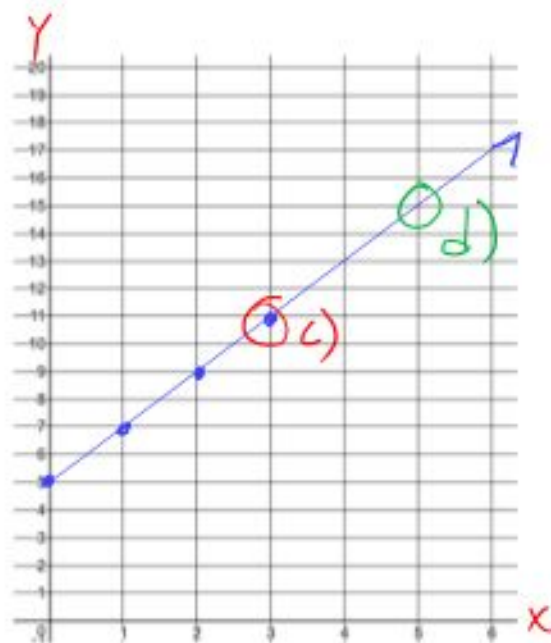
B: $4y + x - 4 = 0$
Convert to y=mx+b form:

$4y = -x + 4 \Rightarrow y = -\frac{x}{4} + 1$

Slope = ___$-\frac{1}{4}$___   y-intercept = ___1___

$(0, 1)$
$(4, 0)$
$(-4, 2)$

2. The cost to order highlighters is $2 for each highlighter and $5 to ship them (regardless of how many you order).

a) Write an equation for the cost of ordering highlighters *(Make sure you indicate what your variables mean)*

$x = $ # of highlighters
$y = $ Cost $\Rightarrow y = 2x + 5$

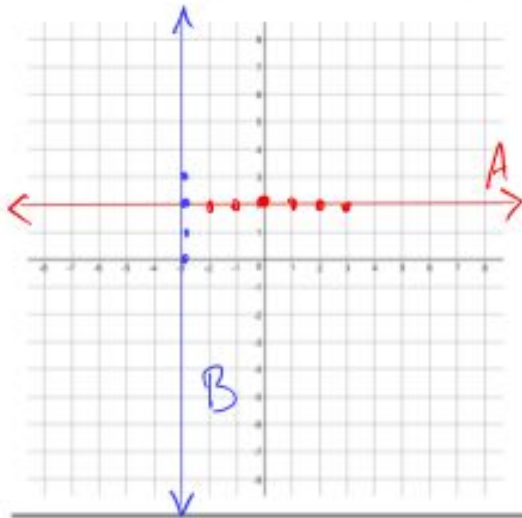b) Graph the equation (*Label each axis with a variable!*)

c) **Using the graph**, find the cost for 3 highlighters (Label the point you used)

Cost = $11

d) **Using the graph**, find how many highlighters would be in an order costing $15 (Label the point you used)

$x = 5$, 5 highlighters

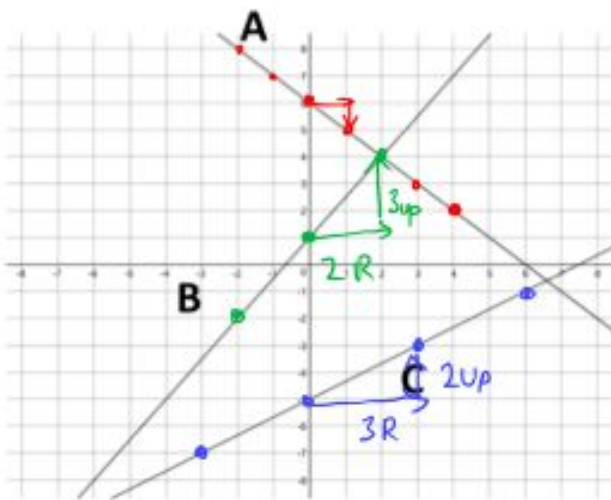3. For the equations below, identify the slope and the y-intercept, then graph it (**include labels**!)

A: $y = 2$

Slope = ___0___   y-intercept = ___2___

B: $x = -3$

Slope = ___∅___   y-intercept = ___∅___

4. Determine the equation for each line and check that each equation is correct.

A: *Write the equation*   slope = $\frac{1\,down}{1\,right}$ y int = 6

$$y = -1x + 6 \qquad = -1$$

Check your equation   (4, 2)

$$y = -1(4) + 6 = -4 + 6 = \underline{2}\ \checkmark$$

B: *Write the equation*   slope = $\frac{3\,up}{2\,R} = \frac{3}{2}$ y int = 1

$$y = \frac{3}{2}x + 1$$

Check your equation   (-2, -2)

$$y = \frac{3}{2}(-2) + 1 = -3 + 1 = \underline{-2}\ \checkmark$$

C: *Write the equation*   slope = $\frac{2\,up}{3\,R} = \frac{2}{3}$ y int = -5

$$y = \frac{2}{3}x - 5$$

Check your equation   (6, -1)

$$y = \frac{2}{3}(6) - 5 = 4 - 5 = \underline{-1}\ \checkmark$$

5. Write the equation of the line that is parallel to line C, and goes through the point (0, 3).

$$Slope = \frac{2}{3} \Rightarrow y = \frac{2}{3}x + b \Rightarrow 3 = \frac{2}{3}(0) + b$$

$$3 = b$$

$$\boxed{y = \frac{2}{3}x + 3}$$