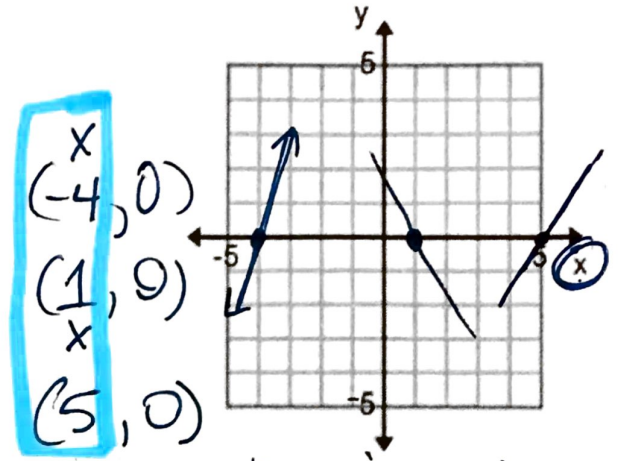
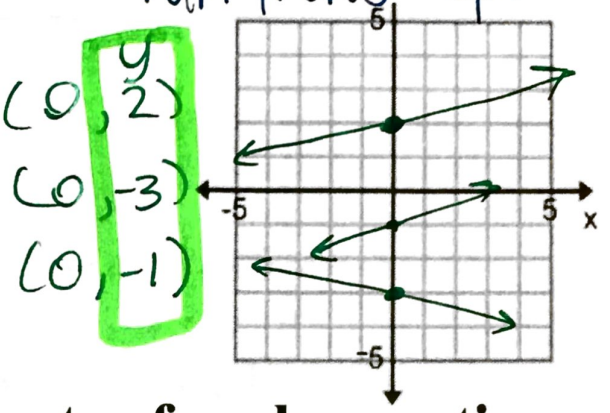
Vocabulary:

- **x-intercepts:**
  where the line crosses the x axis
  $y = 0$ ALWAYS!



run then jump!

- **y-intercepts:**
  where the line crosses the y-axis
  $x = 0$ ALWAYS!



Ex. 1: Find the *x* and *y* intercepts of each equation. Then use them to graph the equation.

$$8x + y = -4$$

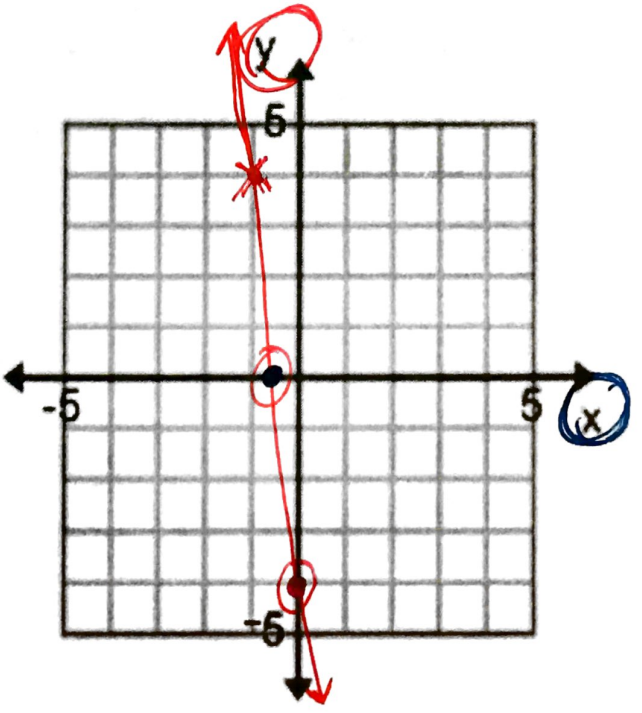
x-int: $\left(\frac{-1}{2}, 0\right)$ (x, y)

$\frac{8x}{8} = \frac{-4}{8}$

$x = -\frac{4}{8}$ $\left(\frac{-1}{2}\right)$

y-int: $(0, -4)$ (x, y)

$y = -4$



Ex. 2: Find the x and y intercepts of each equation. Then use them to graph the equation.

$$-2x + 3y = 6$$

x-int: $(-3, 0)$ — x axis

$-2x = 6$

$\frac{-2x}{-2} = \frac{6}{-2}$

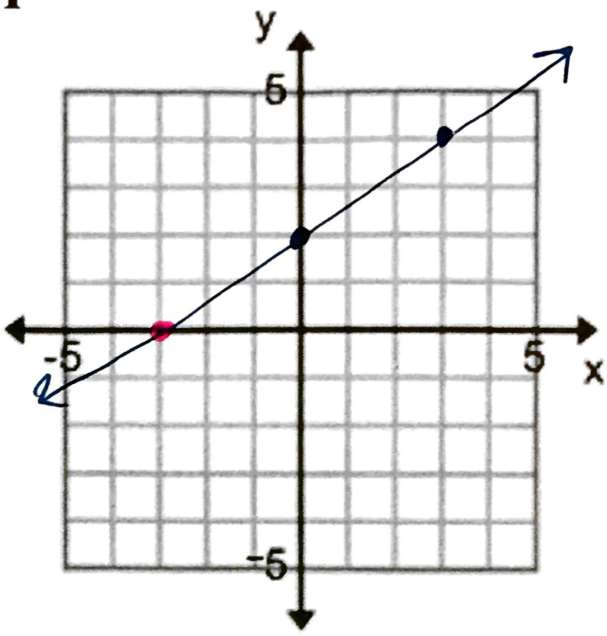
$x = -3$

y-int: $(0, 2)$ — y axis

$3y = 6$

$\frac{3y}{3} = \frac{6}{3}$

$y = 2$



Ex. 3: You are purchasing school supplies for the new school year. You can get notebooks for \$2 and binders for \$3, but you only have \$42 with you. This can be illustrated by the equation $2x + 3y = 42$, where x = the number of notebooks and y = the number of binders. $2x + 3y = 42$

a. What is the x-intercept?

$(21, 0)$ (x, y)

$\frac{2x}{2} = \frac{42}{2}$ $x = 21$

b. What does the x intercept mean for this equation?

If I buy 0 binders, you can buy 21 notebooks.

c. What is the y-intercept?

$(0, 14)$ (x, y)

$\frac{3y}{3} = \frac{42}{3}$ $y = 14$

d. What does the y intercept mean for this equation?

If I buy 0 notebooks, you can get 14 binders.

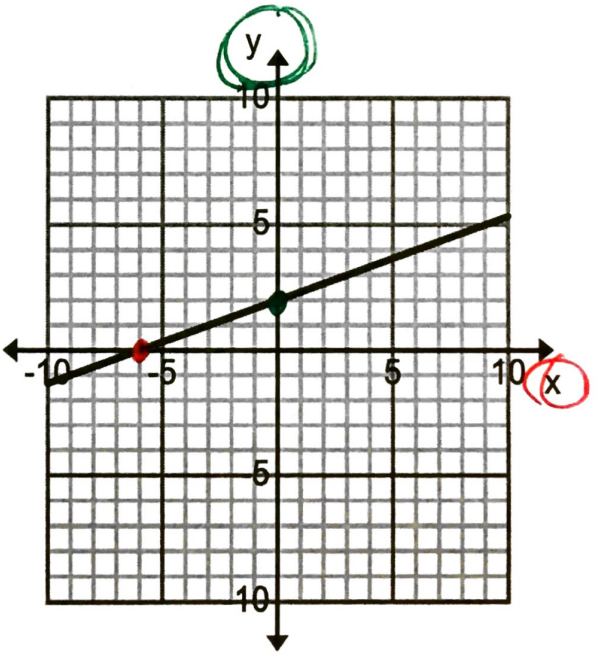
Ex. 4: Find the *x* and *y* intercepts using the table.

x	*y*
-10	-2
-6	0
-4	1
0	3
4	5

x – int : (-6, 0)

y – int : (0, 3)

Ex. 5: Use the graph to find the *x* and *y* intercepts if they exist.



x – int : (-6, 0)

y – int : (0, 2)