

## 9.2 Part 2: GRAPHING LINES USING INTERCEPTS

x-intercept- the x-coordinate of a point where a graph crosses the x-axis

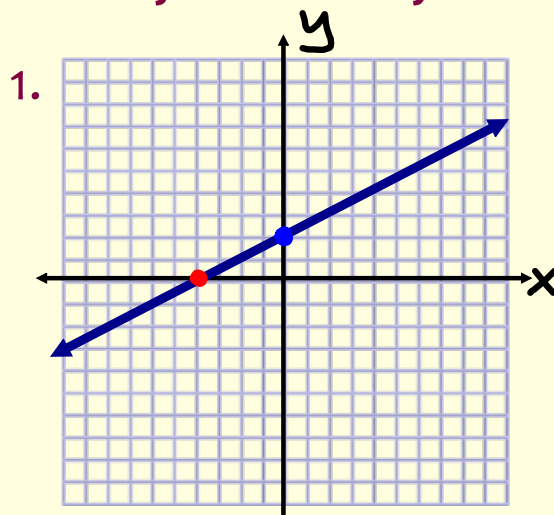
- To find the x-intercept, substitute 0 for y and solve for x.

y-intercept- the y-coordinate of a point where a graph crosses the y-axis

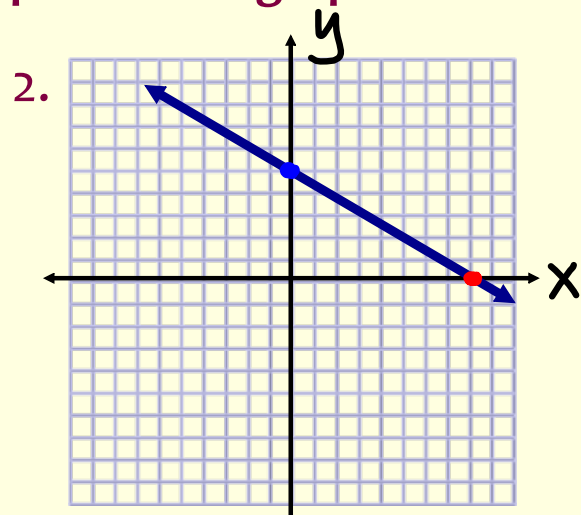
- To find the y-intercept, substitute 0 for x and solve for y.

### EXAMPLES

Identify the x- and y-intercepts of each graph below.



x-int: -4  
y-int: 2



x-int: 8  
y-int: 5

Find the **x-intercept** of each equation.

3.  $5x + 2y = 20$  <sup>let  $y=0$</sup>

$$5x + \cancel{2 \cdot 0} = 20$$

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

$$x = 4$$

4.  $2x - 3y = 6$

$$2x - \cancel{3 \cdot 0} = 6$$

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

$$x = 3$$

Find the **y-intercept** of each equation.

5.  $5x + 2y = 20$  <sup>let  $x=0$</sup>

$$\cancel{5 \cdot 0} + 2y = 20$$

$$\frac{2y}{2} = \frac{20}{2}$$

$$y = 10$$

6.  $2x - 3y = 6$

$$\cancel{2 \cdot 0} - 3y = 6$$

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

$$y = -2$$

Find the x- and y-intercepts of the equations below.

7.  $3x - 4y = 12$

x-int:  $3x - \cancel{4 \cdot 0} = 12$   
 ( $y=0$ )  
 $\frac{3x}{3} = \frac{12}{3}$   
 $x = 4$

y-int:  $\cancel{3 \cdot 0} - 4y = 12$   
 ( $x=0$ )  
 $\frac{-4y}{-4} = \frac{12}{-4}$   
 $y = -3$

8.  $-5x + 4y = 2$

x-int:  $-5x + \cancel{4 \cdot 0} = 2$   
 ( $y=0$ )  
 $\frac{-5x}{-5} = \frac{2}{-5}$   
 $x = \frac{2}{-5}$

y-int:  $\cancel{-5 \cdot 0} + 4y = 2$   
 ( $x=0$ )  
 $\frac{4y}{4} = \frac{2}{4}$   
 $y = \frac{2}{4} \stackrel{\div 2}{=} \frac{1}{2}$   
 $y = \frac{1}{2}$  or 0.5