

Graphing

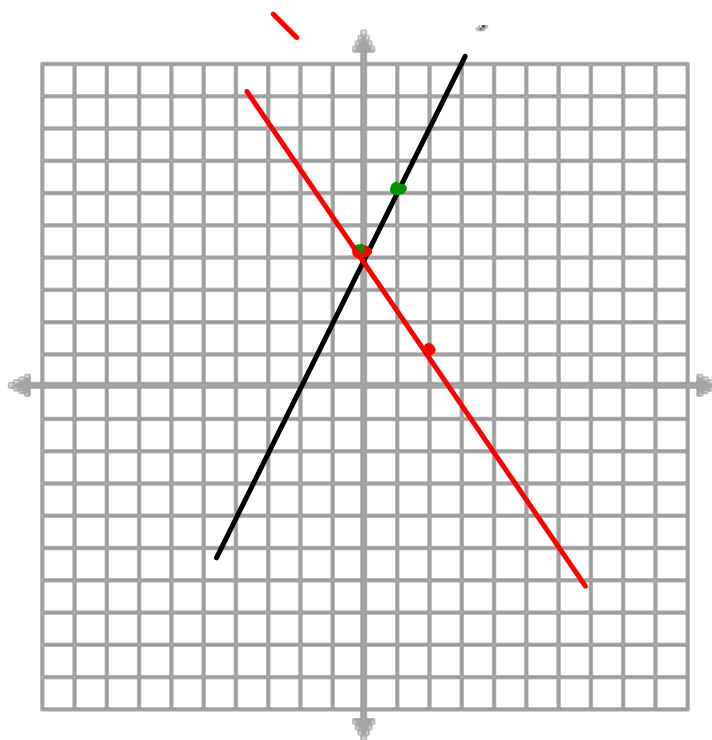
- table of values
- zeros
- rise over run and intercept

| x | y |
|---|----------------|
| 0 | $2(0) + 4 = 4$ |
| 1 | $2(1) + 4 = 6$ |

$$y = \frac{2x + 4}{1}$$

2. $y = \frac{-3x + 4}{2}$

$\frac{\text{rise}}{\text{run}} = \text{slope}$
 $= \frac{-3}{2}$



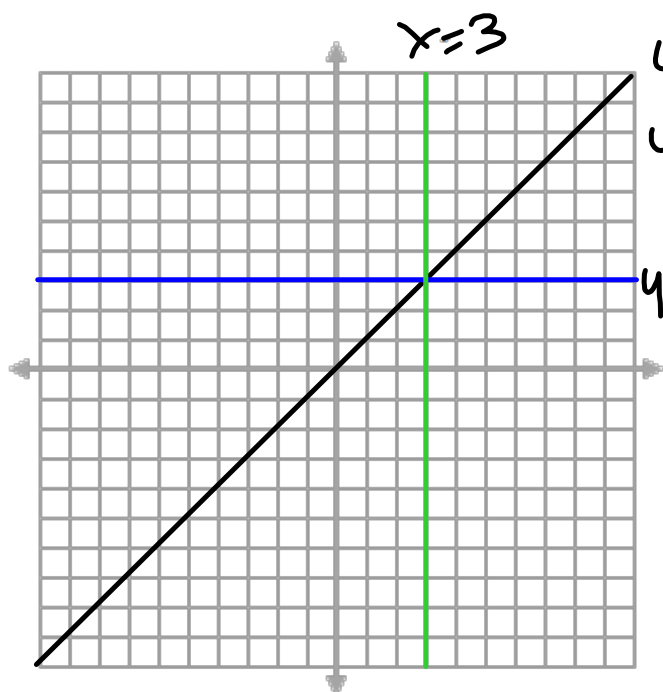
Slope of a Line

- ratio of vertical vs. horizontal change of a line (rise over run)

Slope

$$a = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y = ax + b$$



$$y = 1x$$

$$y = x$$

Slope for horizontal lines: **0**

$$y = b$$

$$y = 3$$

Slope for vertical lines:

does not exist

$$x = n$$

$$x = 3$$

Equation of a Line

$$y = ax + b$$

a = slope

b = y-intercept

initial value

Given a line...

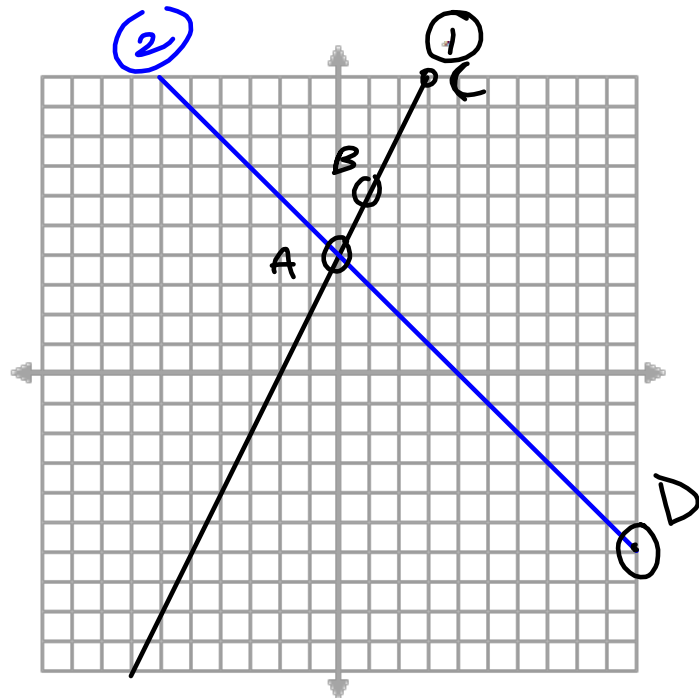
1. Pick two points
2. Find the slope
3. Plug in the slope and a point into $y = ax + b$
4. Find b

$$\begin{array}{l} \textcircled{1} \quad \begin{array}{cc} x & y \\ A(0, 4) & \\ C(3, 10) & \end{array} \\ a = \frac{10 - 4}{3 - 0} \\ = \frac{6}{3} = 2 \end{array}$$

$$\begin{array}{l} 4 = 2(0) + b \\ 4 = b \\ y = 2x + 4 \end{array}$$

$$\begin{array}{l} A(x_1, y_1) \quad \textcircled{1} \\ D(x_2, y_2) \quad \textcircled{2} \end{array}$$

$$\begin{array}{l} y = -x + 4 \\ y = -1x + 4 \end{array}$$



$$a = \frac{-6 - 4}{10 - 0} = \frac{-10}{10} = -1$$

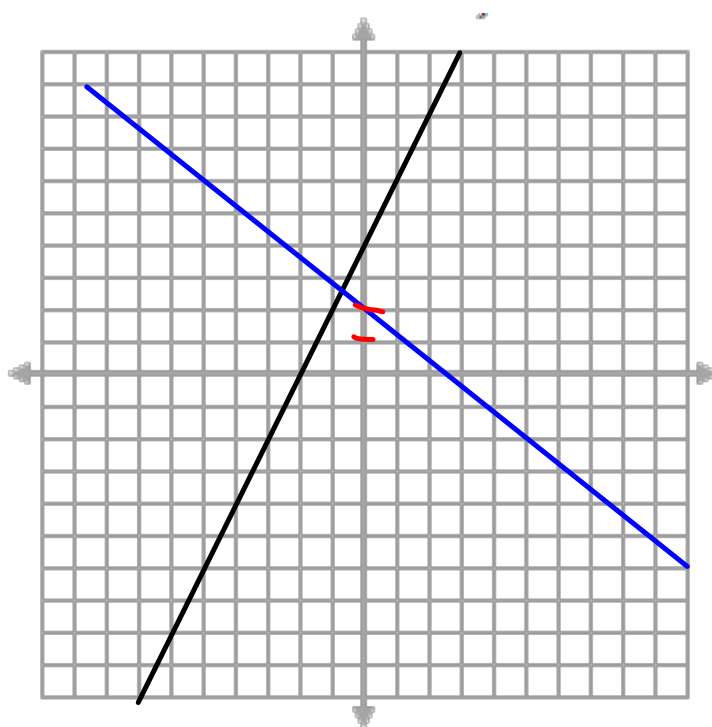
$$\begin{array}{l} y = ax + b \\ 4 = -1(0) + b \\ 4 = b \end{array}$$

Finding Points of Intersection: Two Lines

Graphing

- look at where the two lines meet, this is your point of intersection: write the coordinates

$(-0.8, 2.7)$
 $(-0.8, 2.5)$



Finding Points of Intersection: Two Lines

Table of Values

$$y = -x + 4$$

$$y = 2x + 4$$

| x | y_1 | y_2 |
|---|-------|-------|
| | | |
| | | |
| | | |
| | | |

