

Slope-Intercept Form

$$y = mx + b$$

↑ ↑
slope y-intercept

slope \rightarrow $\frac{\text{rise}}{\text{run}}$

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

Point-Slope Form

$$y - y_1 = m(x - x_1)$$

↓ ↓

$m = \text{slope}$
 (x_1, y_1)

Standard Form

$$Ax + By = C$$

Graph using the intercepts.

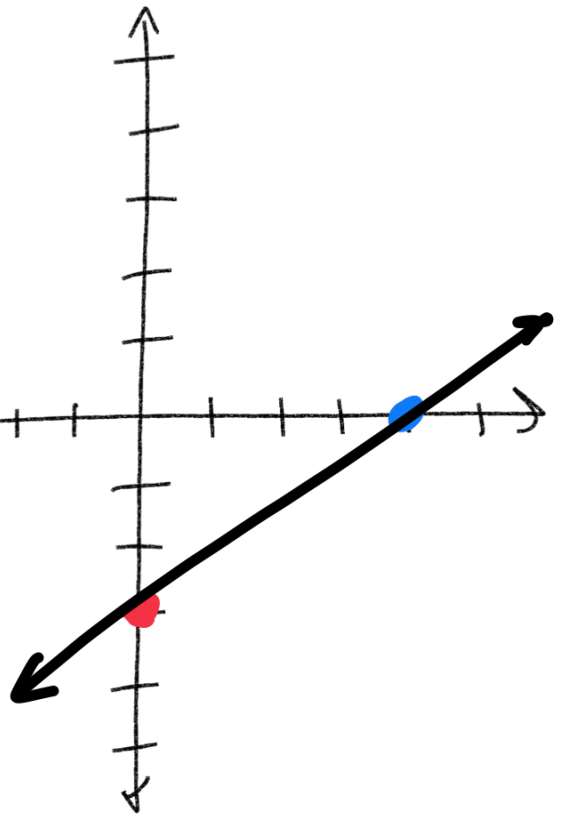
Graph $3x - 4y = 12$

$x=0$ y-intercept

$$3x - 4y = 12 \quad (0, -3)$$

$$-4y = 12$$

$$\frac{-4}{-4} \quad \frac{12}{-4} \quad y = -3$$



$y=0$ x-intercept

$$3x - 4y = 12 \quad (4, 0)$$

$$x = 4$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$8x + 4y = 24$$

$$8x + 4y = 24$$

$$4y = -8x + 24$$

$$y = -2x + 6$$

$y=0$

$$8x + 4y = 24$$

$$\frac{8x}{8} = \frac{24}{8}$$

$$x = 3$$

$$(3, 0)$$

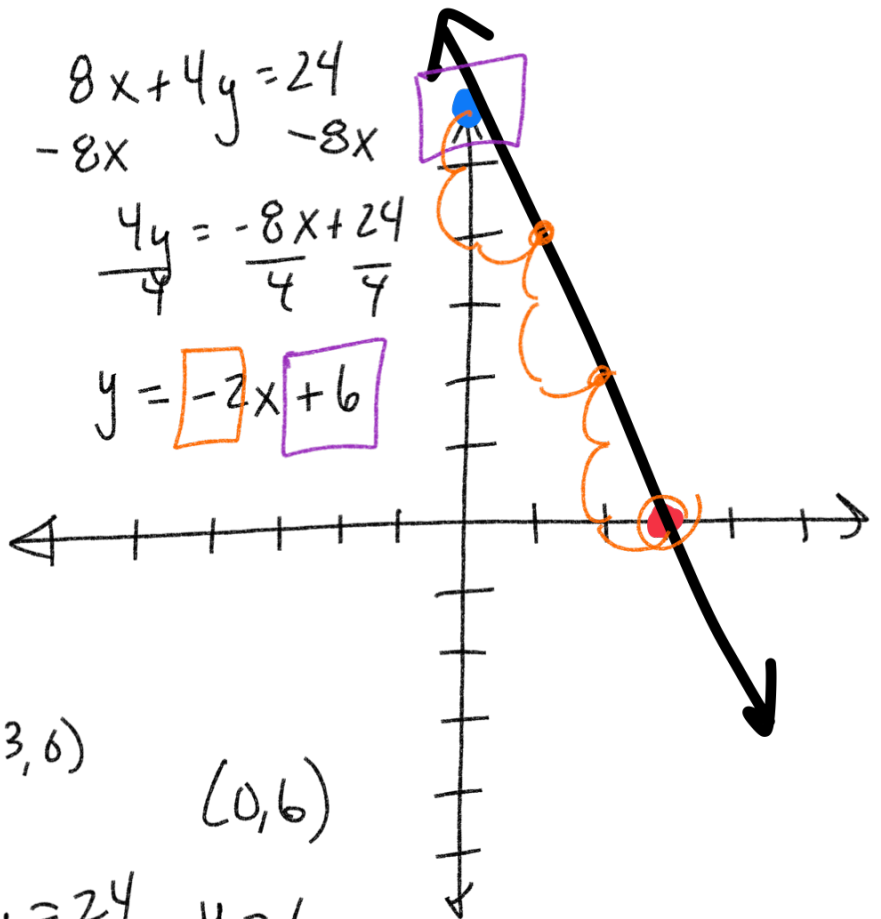
$x=0$

$$8x + 4y = 24$$

$$\frac{4y}{4} = \frac{24}{4}$$

$$(0, 6)$$

$$y = 6$$



$$2x + 5y = -10$$

$$y = 0$$

$$2x + 5y = -10$$

$$\frac{2x}{2} = \frac{-10}{2}$$

$$x = -5$$

$$(-5, 0)$$

$$x = 0$$

$$2x + 5y = -10$$

$$\frac{5y}{5} = \frac{-10}{5}$$

$$y = -2$$

$$(0, -2)$$

