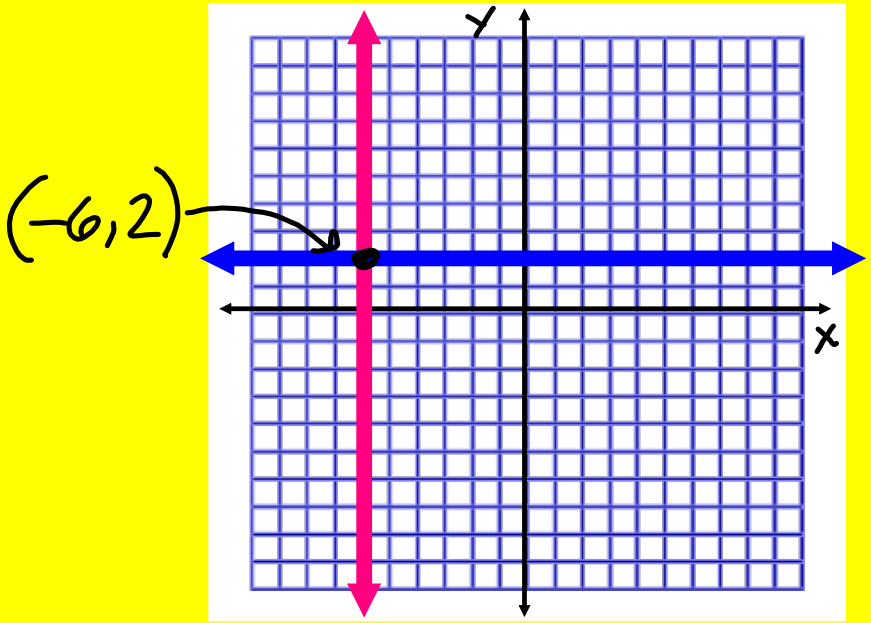
Sketch the graphs of $x = -6$ and $y = 2$. Find the point at which the two graphs intersect.

vert. → $x = \#$

← hor. $y = \#$



Find the x- and y-intercepts of the line given by $-2x + 4y = 9$.

x-int

$-2x + 4(0) = 9$

$\frac{-2x}{-2} = \frac{9}{-2}$

$x = -\frac{9}{2}$

y-int

$-2(0) + 4y = 9$

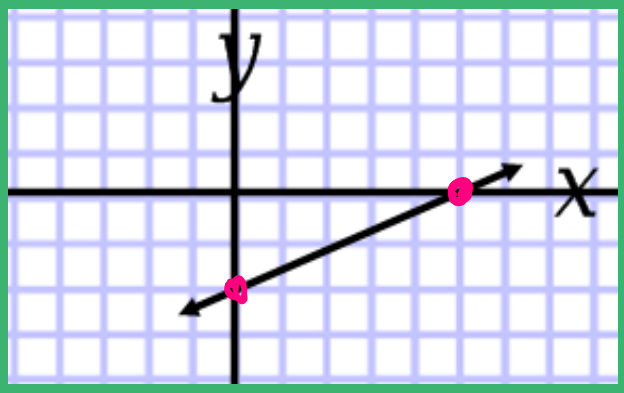
$\frac{4y}{4} = \frac{9}{4}$

$y = \frac{9}{4}$

Identify the x- and y-intercept of the graph.

x-int = 5

y-int = -2



Find the slope of the line that passes through (-2, 0) and (4, 9).

x_1 y_1 x_2 y_2

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

$$m = \frac{9-0}{4-(-2)} = \frac{9}{6}$$

$$m = \frac{3}{2}$$

Find the slope and y-intercept of the line with the equation $-15x + 3y = 24$.

$+15x \quad +15x$

$\frac{3y}{3} = \frac{15x}{3} + \frac{24}{3}$

$y = 5x + 8$

$y = mx + b$

$m = 5$

$y\text{-int} = 8$

Graph the equation $4x - y = 3$.

$4x - y = 3$

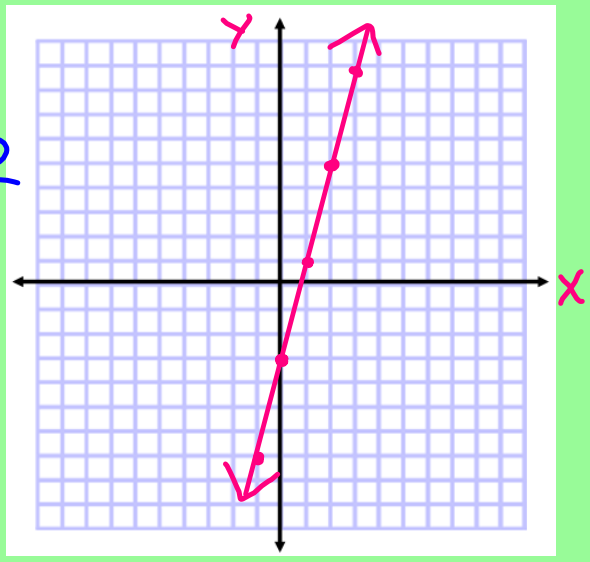
$-4x \quad -4x$

$\frac{-y}{-1} = \frac{-4x + 3}{-1 \quad -1}$

$y = 4x - 3$

$m = \frac{4}{1}$

$y\text{-int} = -3$



★

Rewrite
$-8x - 4y = 6$
in slope-intercept form.

★

Are the lines parallel?
EXPLAIN YOUR REASONING.

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

parallel
↓
same
slope

$-4x + 3y = 12$

$+4x \quad +4x$

$\frac{3y}{3} = \frac{4x}{3} + \frac{12}{3}$

$y = \frac{4}{3}x + 4$

On March 1 Anna had a savings account balance of $1526. By July 1 the account balance was $2378. What is the rate of change? SLOPE

$(3, 1526)$ $(7, 2378)$

x_1 y_1 x_2 y_2

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2378 - 1526}{7 - 3} \frac{\$}{\text{months}} = \frac{852}{4}$$

$213/month

Write the direct variation equation with the given information.

y varies directly as x when x = 30 and y = 36

$y = k \cdot x$

$\frac{36}{30} = \frac{k \cdot 30}{30}$

$\frac{6}{5} = k$

$y = \frac{6}{5}x$

$W = k \cdot \ell$

The weight, w, of a plank varies directly with its length, ℓ. A 7.5 foot plank weighs 30 pounds. Write an equation relating w and ℓ.

$\frac{30}{7.5} = \frac{k \cdot 7.5}{7.5}$

$4 = k$

$W = 4\ell$

Tell whether the equation represents direct variation. If so, identify the constant of variation.

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

$2x = y$

direct var.
$k = 2$

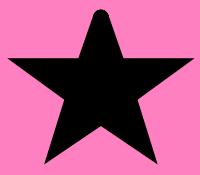
Find the value of x so that f(x) = 13.

y-value

$$f(x) = -\frac{1}{4}x$$

$$-\frac{4}{1} \cdot 13 = -\frac{1}{4}x \cdot -\frac{4}{1}$$

$$-52 = x$$



What is the value of the function when x = -7?

$$f(x) = x^2 + x - 1$$

$$f(-7) = (-7)^2 + (-7) - 1$$

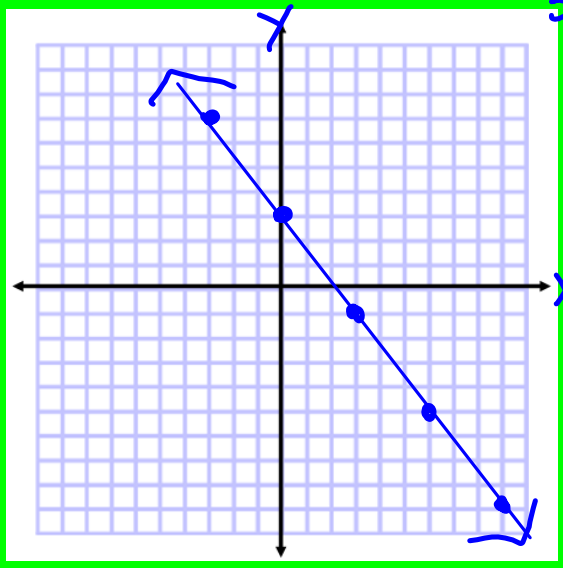
$$f(-7) = 49 + -7 - 1$$

$$f(-7) = 41$$

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

$m = \frac{-4}{3}$ or $\frac{4}{-3}$

y-int = 3



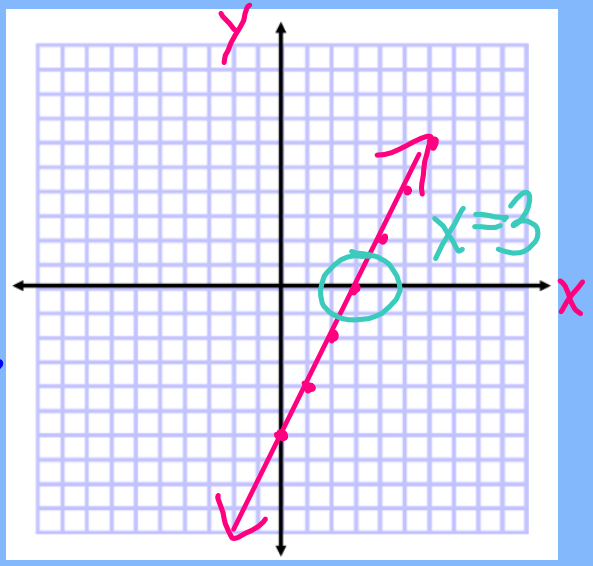
Graph the function $g(x) = \frac{1}{2}x$. $m = \frac{1}{2}$ y-int = 0

Compare the graph with the graph of f(x) = x.

Solve 4x - 6 = 2x by graphing .

$4x - 6 = 2x$
$-2x \quad -2x$
$2x - 6 = 0$
$2x - 6 = y$

$m = \frac{2}{1}$ y-int = -6



What would happen to the graph (in words) of y = 3x - 2
if the -2 was changed to 3?