

**Warm up:**

Graph.

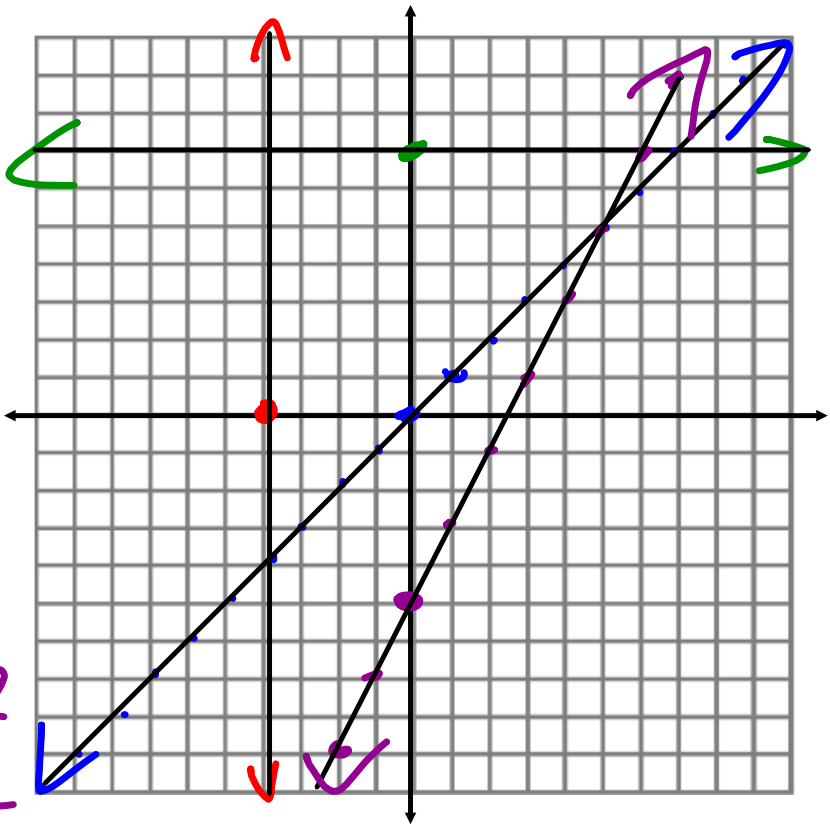
1)  $y = 7$

2)  $x = -4$

3)  $y = x$

4)  $4x - 2y = 10$

$$\begin{array}{r} -4x \quad -4x \\ \hline -2y = -4x + 10 \\ \hline -2 \quad -2 \\ \hline y = 2x - 5 \end{array}$$



## HW Solutions

$$\textcircled{2} \quad f(x) = -|x|$$

$$-:| \geq |$$

$$D = \{x : x \in \mathbb{R}\} - \rightarrow$$

$$R = \{y : y \leq 0\}$$

$$(3) \quad g(x) = -5x$$

$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \in \mathbb{R}\}$$

$$(4) \quad A(x) = -x^2$$

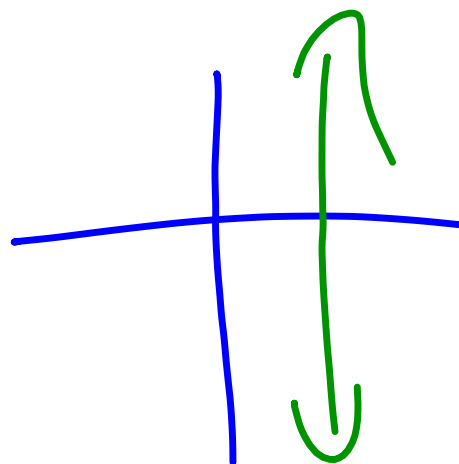
$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \leq 0\}$$

$$\textcircled{1} \quad X = \mathbb{Z}$$

$$D = \{3\}$$

$$R = \{y : y \in \mathbb{R}\}$$



$$f(x) = 3x^2 - 5$$

$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \geq -5\}$$

# Showdown

Write the function for the line through  $(-8, 8)$  and  $(-5, 5)$ .

$$\frac{\Delta y}{\Delta x} = \frac{8-5}{-8-(-5)} = \frac{3}{-3} = -1$$

$$y = mx + b$$

$$y = -x + b$$

$$5 = -(-5) + b$$

$$5 = 5 + b$$

$$\begin{array}{r} 5 \\ -5 \\ \hline 0 = b \end{array}$$

$$y = -x$$



Write the function for the line through (9,3) and (-2,3).

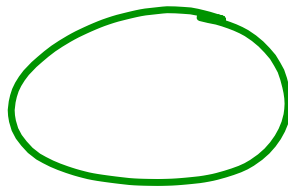
$$\frac{3-3}{9+(-2)} = \frac{0}{11} = 0$$

$$y = 3$$

What is the slope of the line  $x = -9$ ?

undefined

What is the slope of the line  $y = 19$ ?



What is the slope and y-intercept of the line  $y = 2 - 6x$ ?

$$\begin{aligned} \text{slope} &= -6 \\ \text{y-intercept} &= 2 \end{aligned}$$

Write an equation for the line with the following function table.

$$\frac{\Delta y}{\Delta x} = \frac{5-0}{4-2} = \frac{5}{2}$$

$$y = \frac{5}{2}x + b$$

$$0 = \frac{5}{2}(2) + b$$

$$0 = 5 + b$$

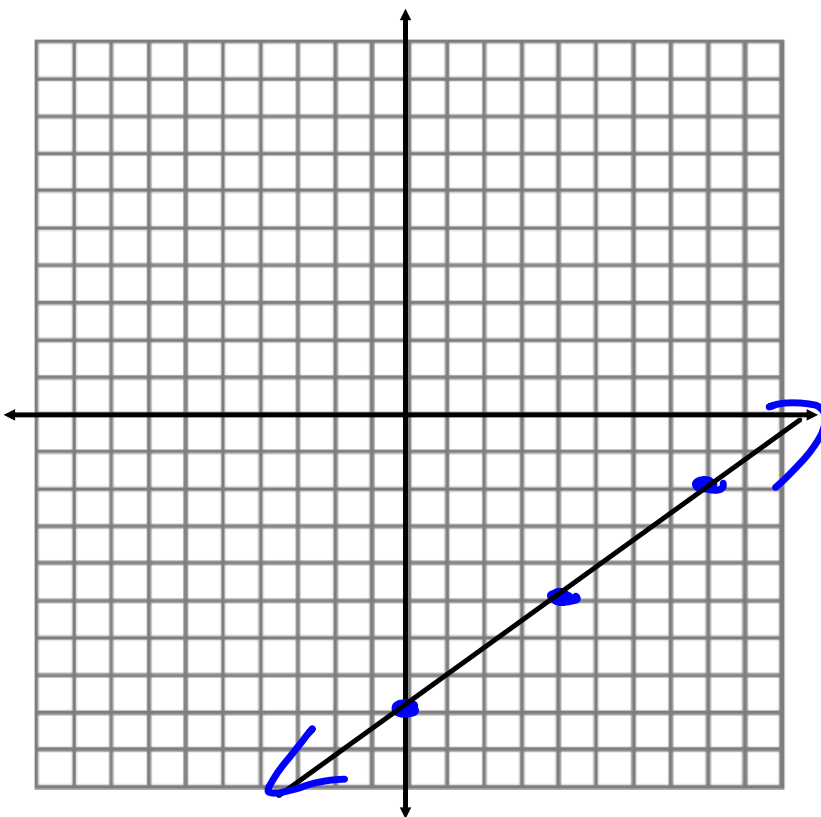
$$-5 = 5 + b$$

$$-5 - 5 = b$$

$$y = \frac{5}{2}x - 5$$

x	y
2	0
4	5
6	10
8	15

$$f(x) = \left(\frac{3}{4}\right)x - 8$$



Write an equation for the line perpendicular to  $g(x) = (1/3)x + 5$  through the point  $(-2, 3)$ .

$$y = -3x + b$$
$$3 = -3(-2) + b$$
$$3 = 6 + b$$
$$\begin{array}{r} -6 \\ -6 \\ \hline -3 = b \end{array}$$

$$y = -3x - 3$$

Find the domain and range of the following function.

$$C(x) = 3x^2 - 5$$

$$D = \{x : x \in \mathbb{R}\}$$

$$R = \{y : y \geq -5\}$$



$$a(x) = 3x$$

$$b(x) = x^2 - 10$$

$$a(2) = 3(2) = 6$$

$$b(a(2)) =$$

$$b(6) = 6^2 - 10 = 36 - 10 = 26$$

What is the slope and y-intercept of the following function?

$$y = 3x$$

What is the slope and y-intercept of the following function?

$$y = 6$$

Write an equation for the line through  $(5, 2)$  with slope 3.

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