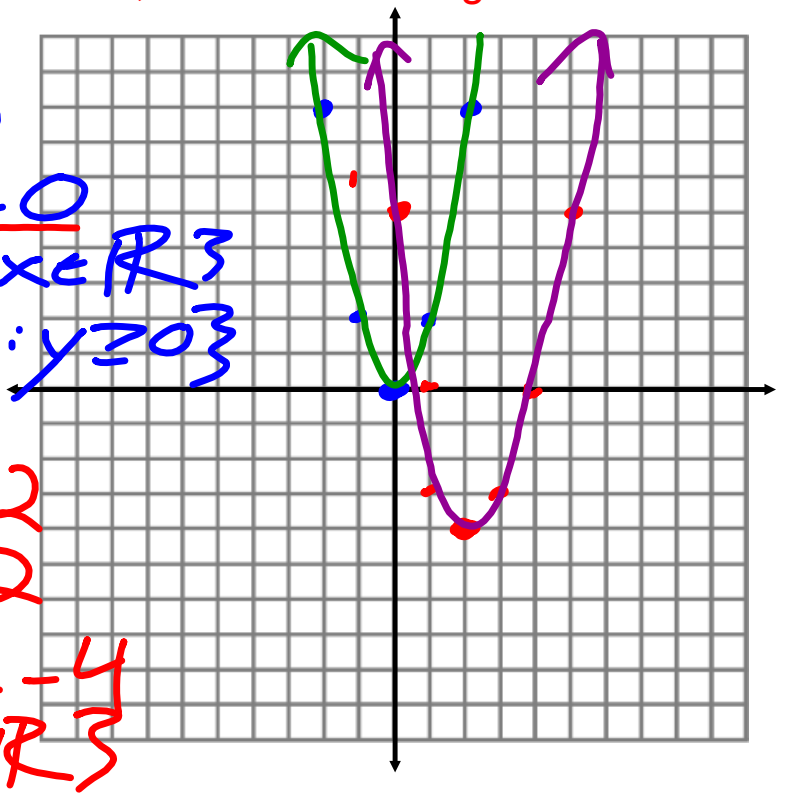
Warm up:

Graph

Vertex, line of symmetry, min/max value, domain and range



1) $y = 2x^2$

$x = 0$

$-\frac{0}{2(2)} = 0$ $\quad min = 0$

$(0,0)$ $\quad D = \{x : x \in \mathbb{R}\}$

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

2) $y = x^2 - 4x$

$-\frac{-4}{2(1)} = -(-2) = 2$

$(2,-4)$ $\quad x = 2$

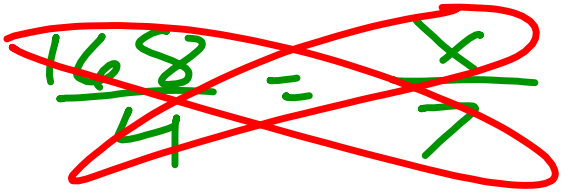
$min = -4$

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

$R = \{y : y \geq -4\}$

HW Solutions

(4)



$$\frac{4x}{4} = \frac{1176}{4}$$

$$x = 294$$

294mi

6

$$\frac{32}{288} = \frac{65}{x}$$

$288 = k \cdot 32$

$$\frac{32x}{32} = \frac{1820}{32}$$

$$x = 585$$

585 V

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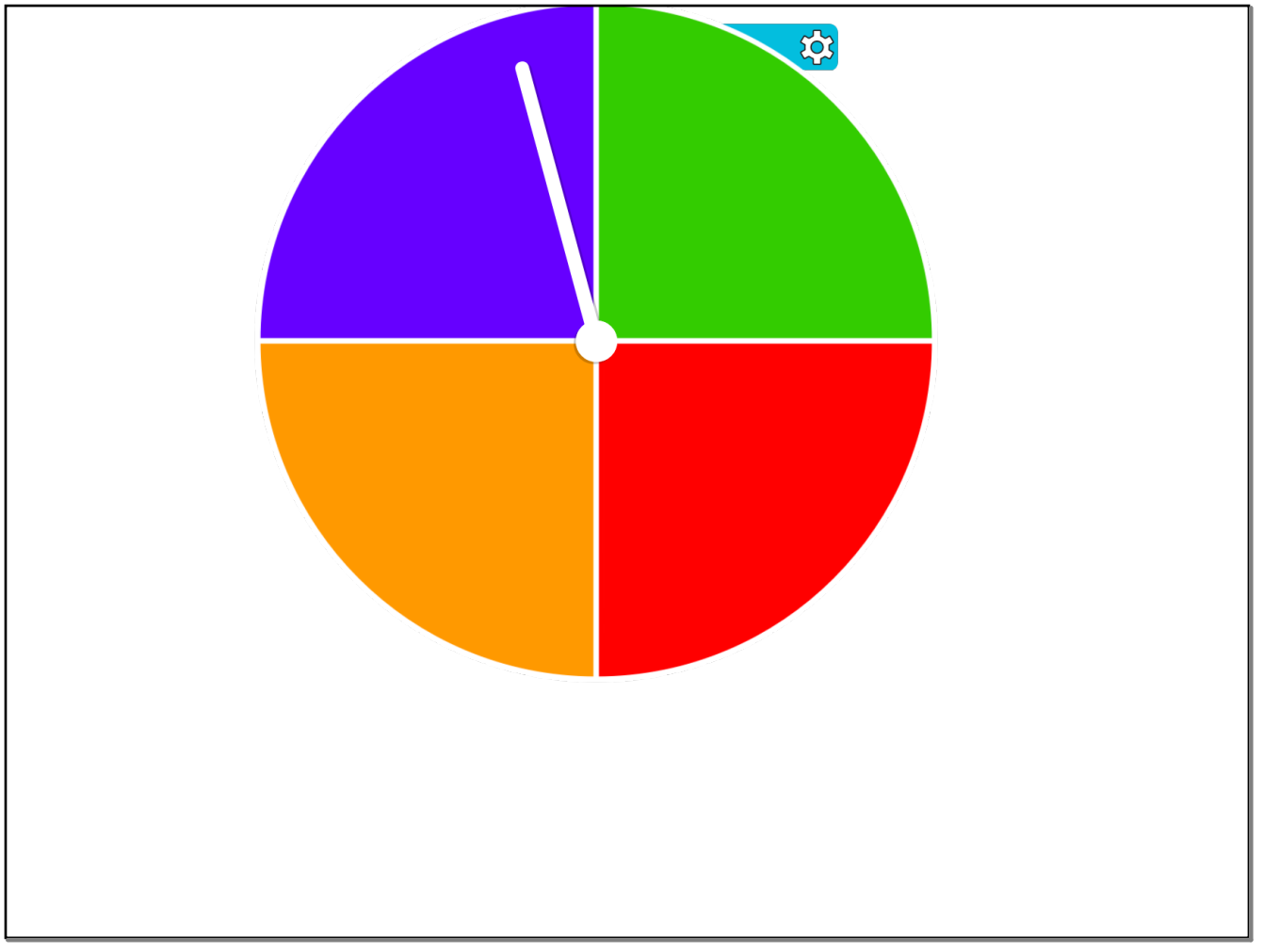
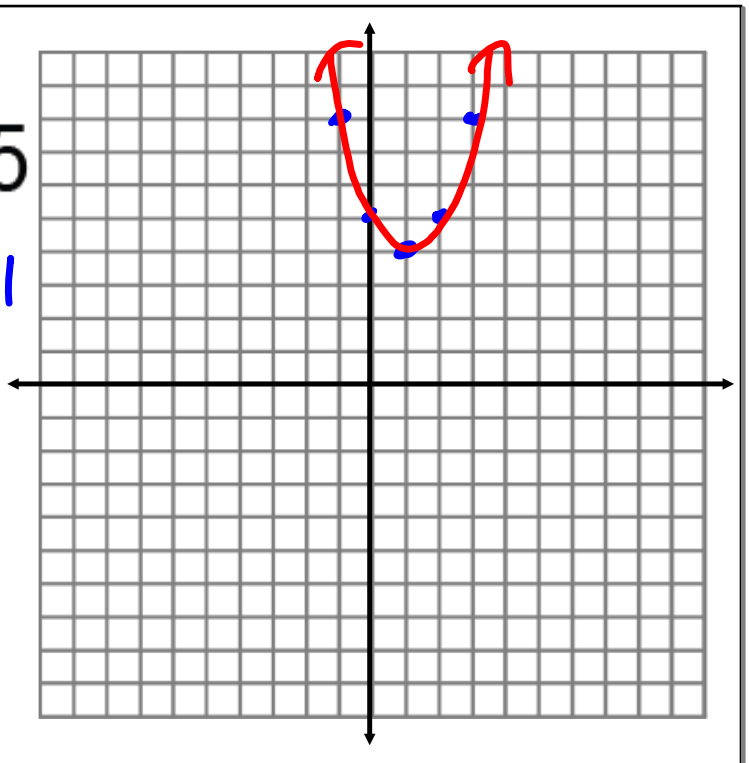


Graph

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

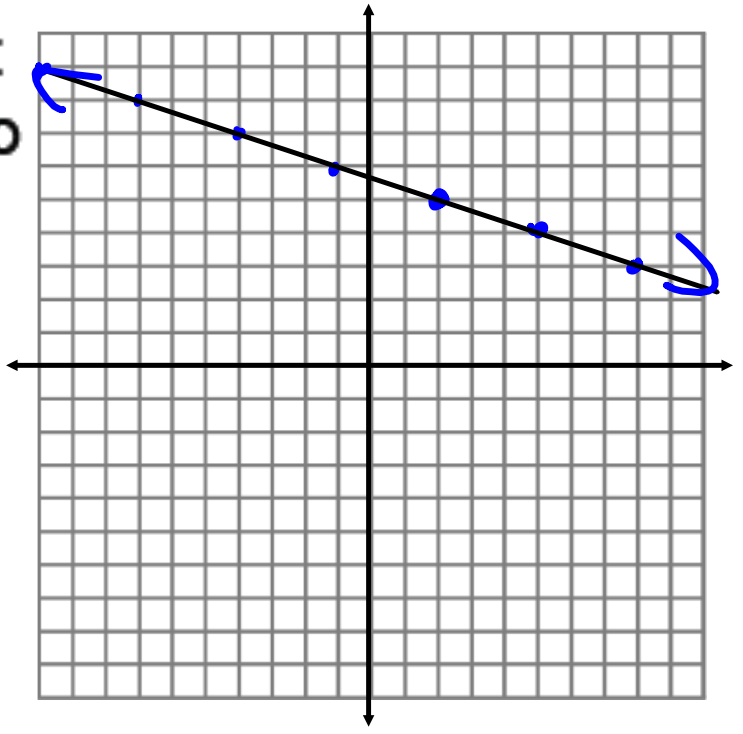
$-\frac{-2}{2(1)} = -(-1) = 1$

$f(1) = 4$



Graph the line through (2, 5) that is perpendicular to $y = 3x + 20$

$-\frac{1}{3}$



The length that a spring stretches varies directly as the mass of the object attached to it. If a 50g weight is attached to the end of a spring, it stretches to a length of 4cm. How long would the spring stretch to if a 70g weight was attached to the end?

$\frac{50}{4} = \frac{70}{x}$

$\frac{50x}{50} = \frac{280}{50}$

$x = 5.6$

5.6cm

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

$$y = -x$$

slope = -1

y-intercept = 0

Write an equation for the line through (-3, 5) that is perpendicular to f(x) = (3/2)x - 1.

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

$5 = -\frac{2}{3}(-3) + b$

$5 = 2 + b$

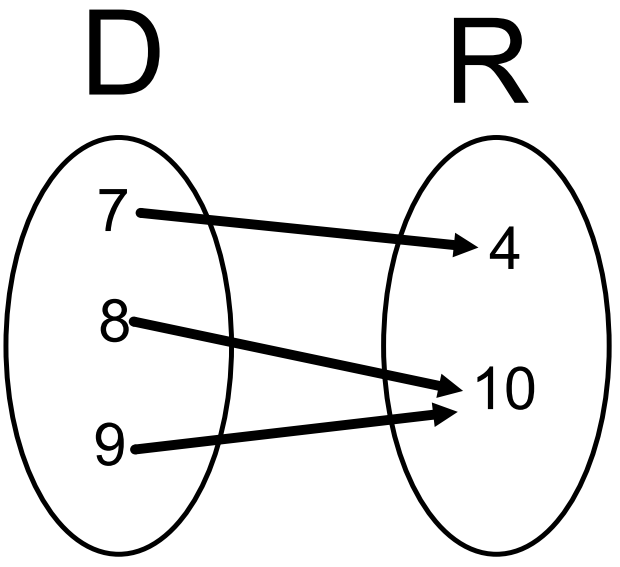
$-2 \quad -2$

$3 = b$

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

Does the following relationship represent a function?

yes



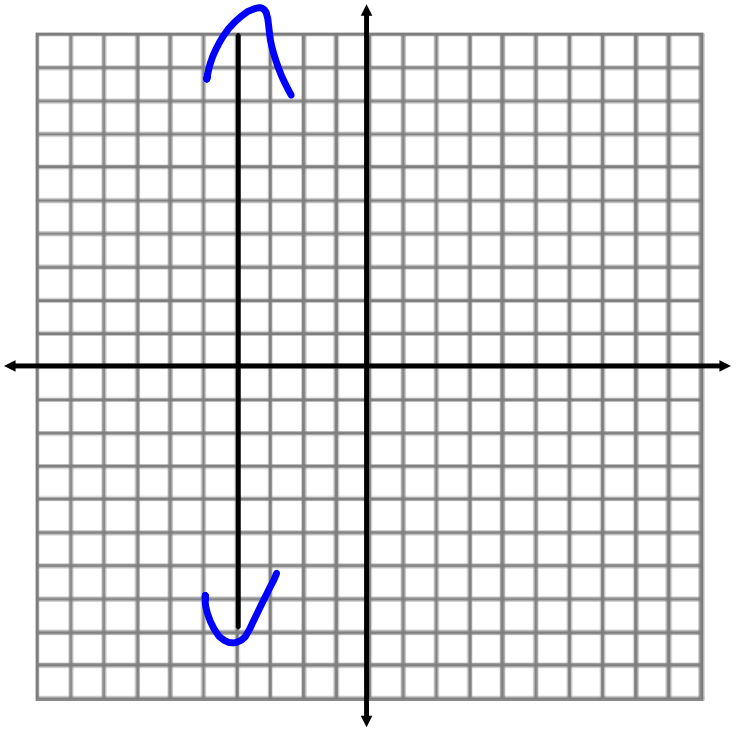
Find the x-intercept and y-intercept of the following function.

$$3x - 5y = 30$$

x-int = 10

y-int = −6

$$x = -4$$



Write the function for the line that passes through (-5, 5) and (-6, 10).

$$\frac{\Delta y}{\Delta x} = \frac{10-5}{-6-(-5)} = \frac{5}{-1} = -5$$

$y = -5x + b$

$10 = -5(-6) + b$

$10 = 30 + b$

$-30 \quad -30$

$-20 = b$

$y = -5x - 20$

Write an equation in point-slope form for the line through (5,-9) with slope 2/3.

Write an equation for the horizontal line through (6, 7).

Is the following function linear or nonlinear?

x	y
5	12
6	14
7	16
8	18

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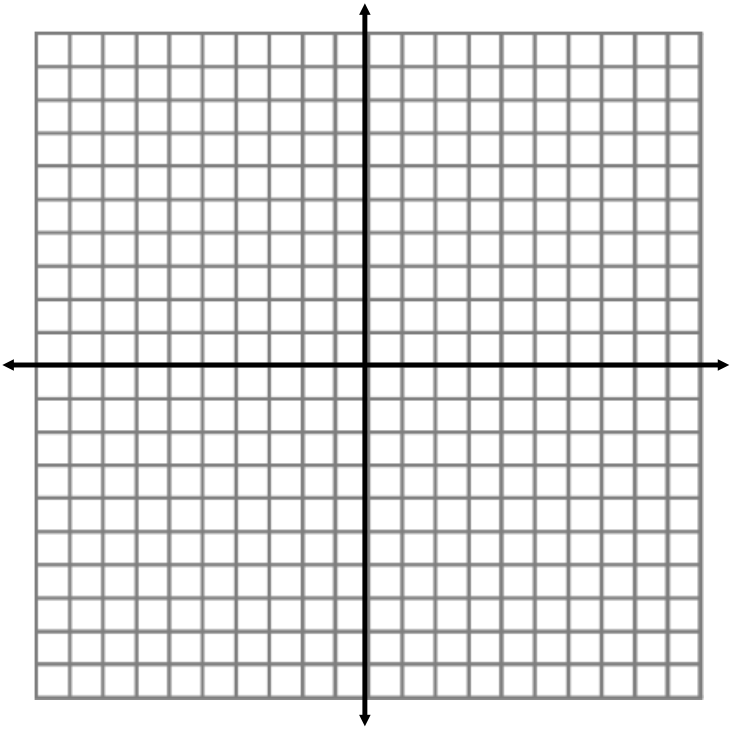
$$y = -\frac{3}{4}x + 6$$



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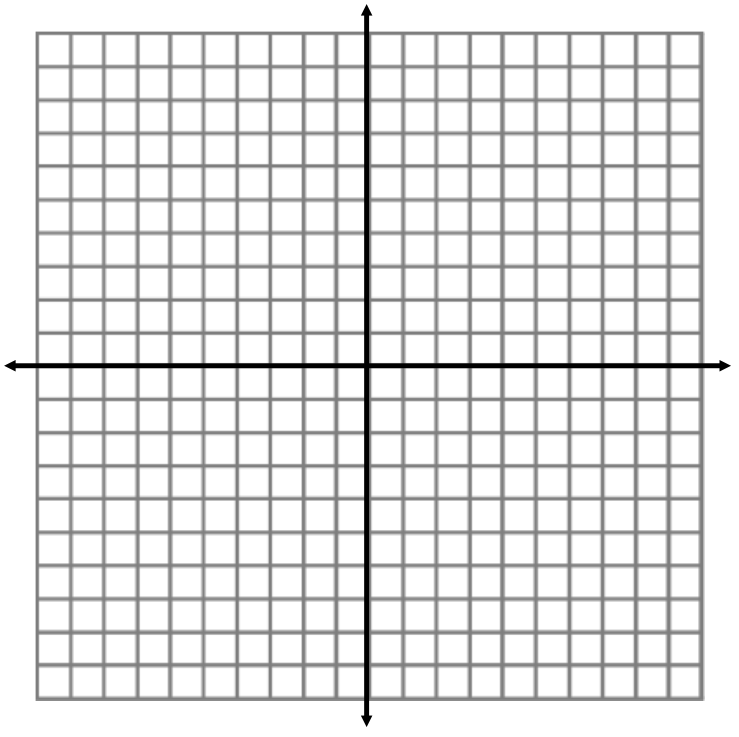
$y = 6$



What is the slope of the line through (-3, 7) and (8, -1)?

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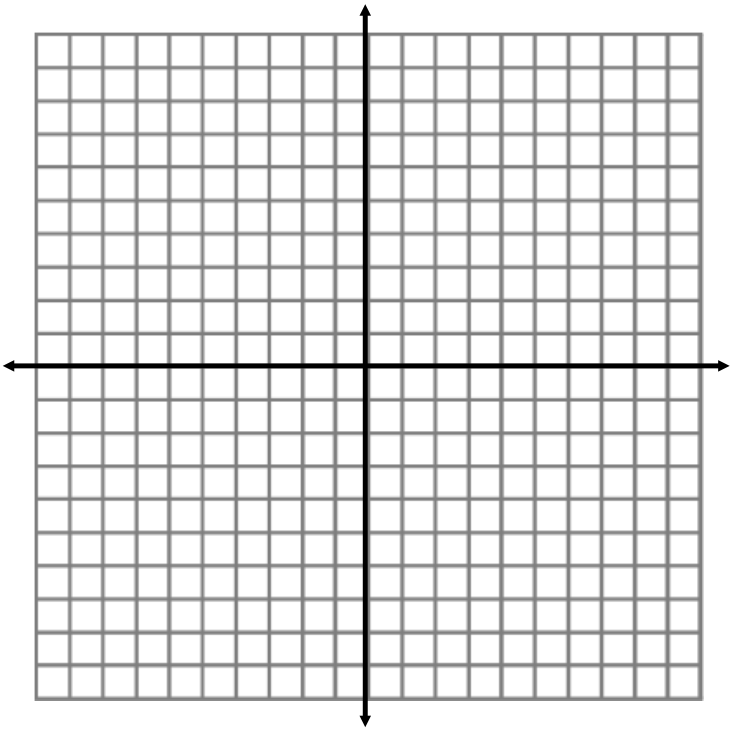
$$y = 3x + 1$$



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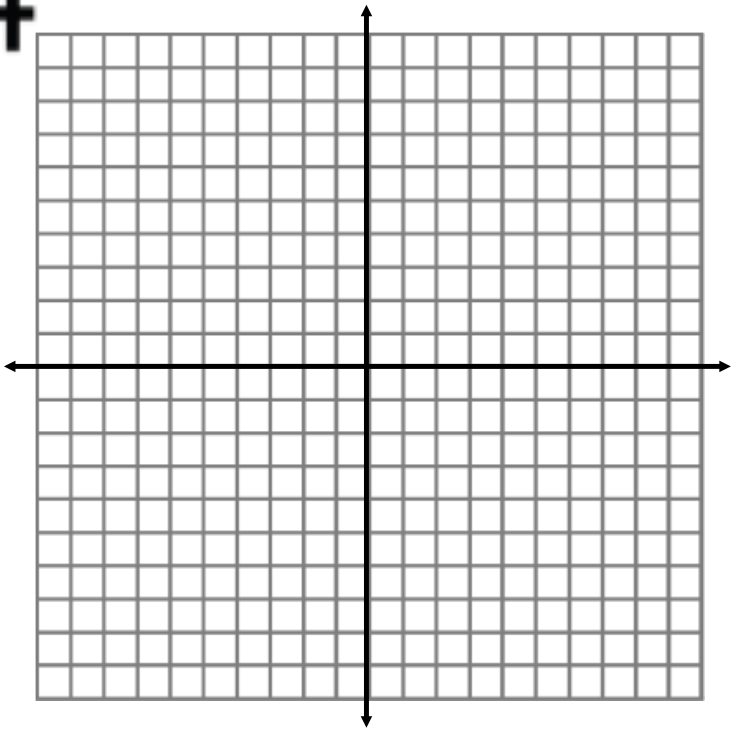
$$y = x + 4$$



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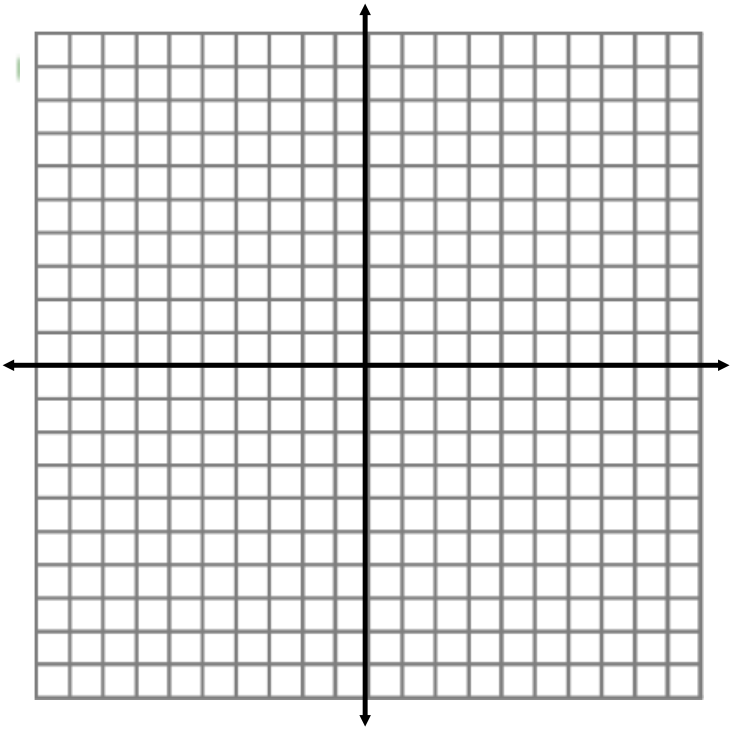
$$y = -x - 2$$



Write a function for the line through (5, 9) that is parallel to $g(x) = 2x - 4$

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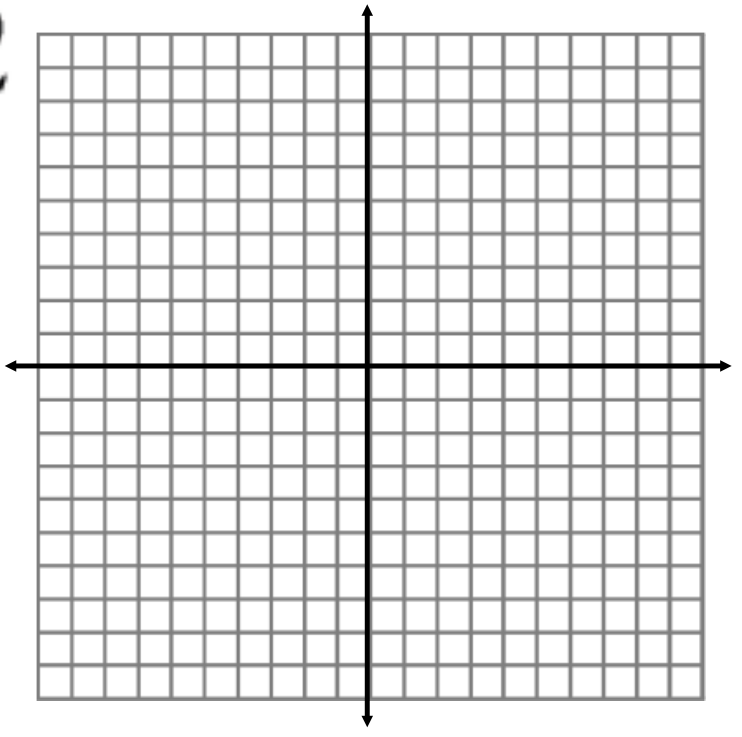
$$y = \frac{2}{5}x - 2$$



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