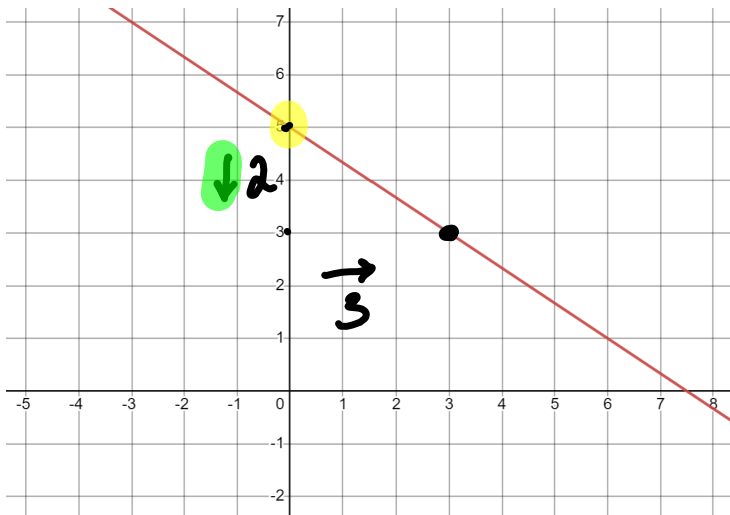


Algebra 1:

4.1 Writing Equations in Slope Intercept Form

Refresher:

1. Find the slope and y-intercept of the graph:



y-int: 5
 or (0, 5)

Slope: $\frac{-2}{3}$

2. Given the equation, state the slope and y-intercept.

$$y = 6x - \frac{4}{5}$$

Slope: 6

Y-intercept: $-\frac{4}{5}$

$$y = mx + b$$

m: slope

b: y-int

4.1 Writing Equations in Slope-Intercept Form

Write an equation for the line (in slope-intercept form) with the given information.

1. Slope: $\frac{5}{8}$, Y-intercept: -10

$$y = \frac{5}{8}x - 10$$

$$y = mx + b$$

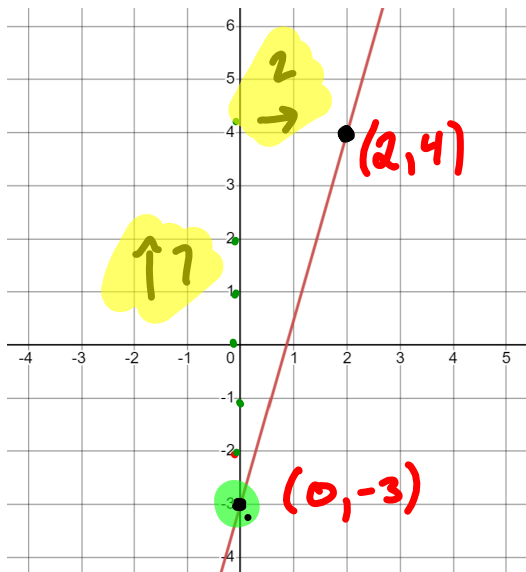
m : slope
 b : y-int

2. Slope: $-\frac{4}{7}$, y-intercept $\frac{1}{2}$

$$y = -\frac{4}{7}x + \frac{1}{2}$$

4.1 Writing Equations in Slope-Intercept Form

3.



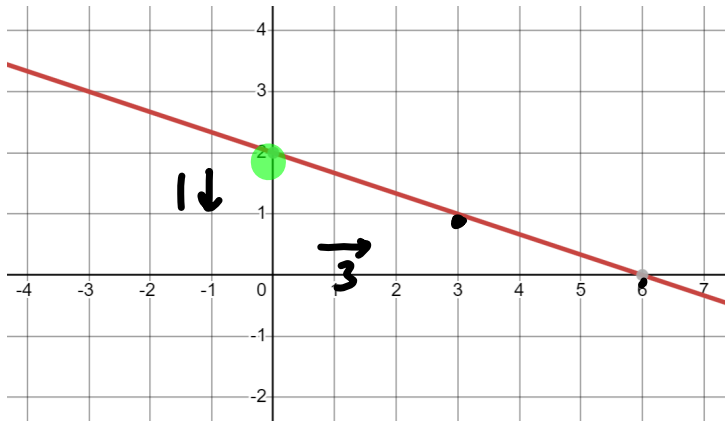
Things we need to
Find: Slope & y-int.

y-int: -3

Slope: $\frac{7}{2}$

$$y = \frac{7}{2}x - 3$$

4.



y-int: 2

Slope: $-\frac{1}{3}$

$$y = -\frac{1}{3}x + 2$$

What have we been using/needing to write these equations?

Slope & y-int

4.1 Writing Equations in Slope-Intercept Form

5. The line passes through $(-3, 5)$ and $(0, -1)$

Find Slope

(x_1, y_1) (x_2, y_2)

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-1 - 5}{0 - -3} = \frac{-6}{3} = -2$$

find y-int

All y-intercepts have 0 for their x value. So

$(0, -1)$ is a y-intercept

"-1" is the y-int.

$$y = -2x - 1$$

6. The line passes through $(0, -5)$ and $(8, -5)$

Slope

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - -5}{8 - 0}$$

$$= \frac{-5 + 5}{8} = \frac{0}{8} = 0$$

y-int:

-5

$$y = 0x - 5 \quad \text{or} \quad y = -5$$

4.1 Writing Equations in Slope-Intercept Form

7. $f(0) = 2$, $f(2) = 4$ ← Function Notation

$$\begin{matrix} (0, 2) & (2, 4) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

Function notation is just a fancy way to give points. So our function is called "f" and it passes through $(0, 2)$ and $(2, 4)$. Now it's just like the last Example.

$$\text{Slope: } \frac{4-2}{2-0} = \frac{2}{2} = 1$$

y-int: 2

because $(0, 2)$ is a given

y-int.

$$y = 1x + 2$$

8. $f(0) = 7$, $f(3) = 1$

$$\begin{matrix} (0, 7) & (3, 1) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

Slope

$$\frac{1-7}{3-0} = \frac{-6}{3} = -2$$

y-int: 7 ↘

point given: $(0, 7)$

$$\text{Equation: } y = -2x + 7$$

4.1 Writing Equations in Slope-Intercept Form

Homework:

Pg 183: 3-16, 21-23

Attachments

MOfficePNG.png