

## What's Going On?

**Checking In**

The Test.

**Minds on**

What do you know?

**Action!**

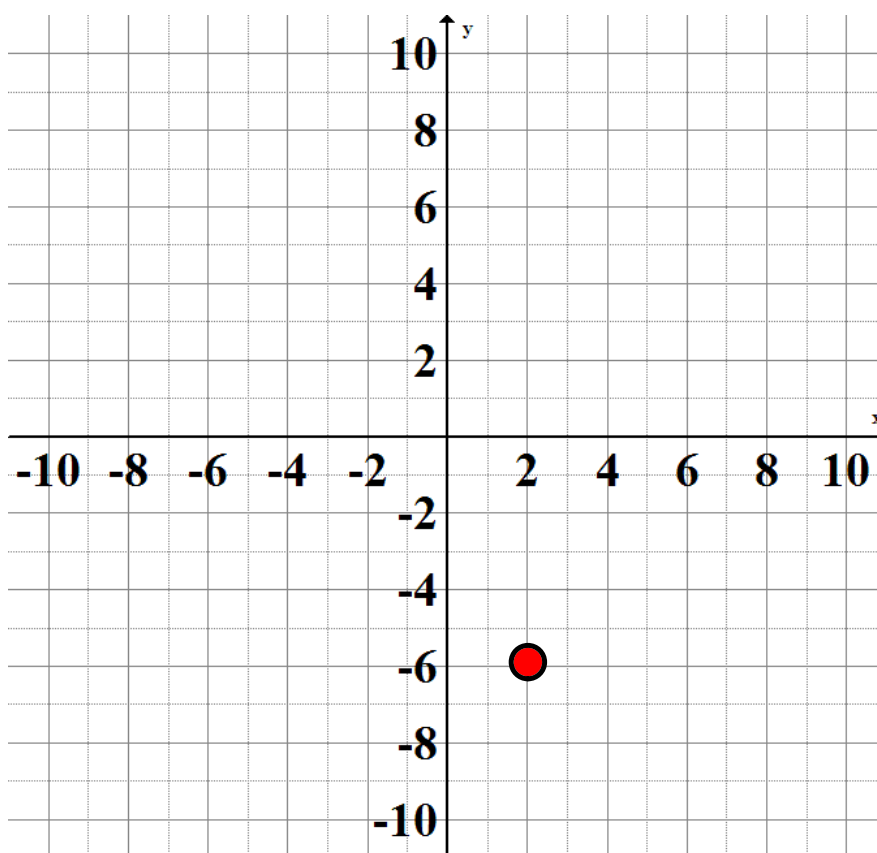
Horizontal and Vertical Lines

**Consolidation**

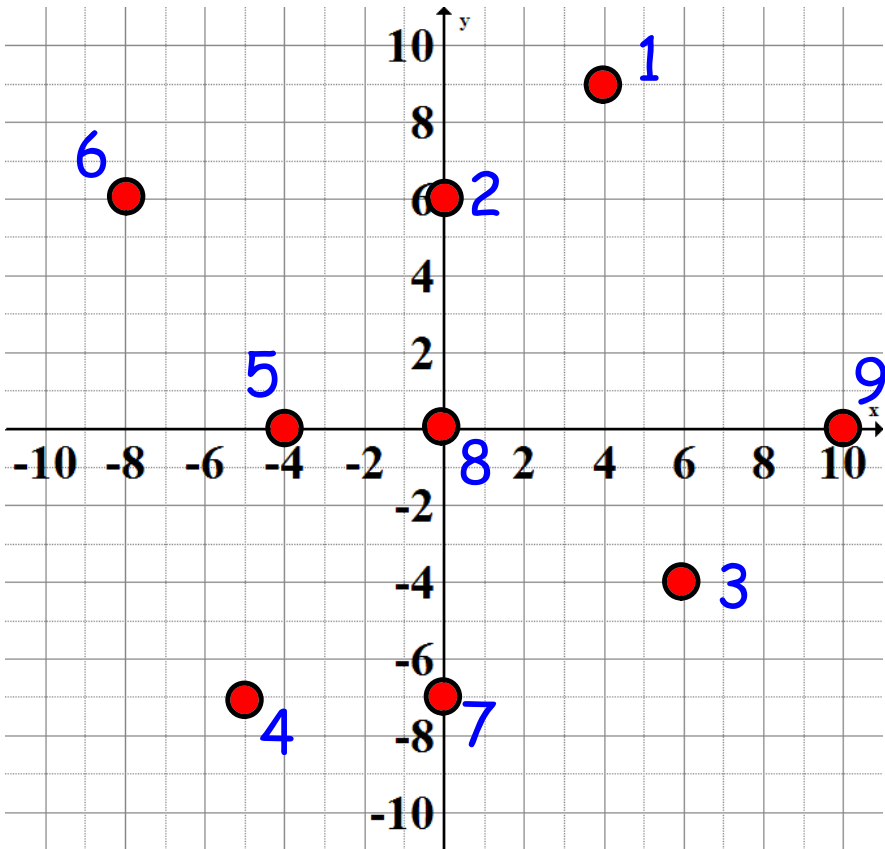
Whiteboards!

**Learning Goal - I will be able to work with lines in  
Slope y-Intercept Form ( $y = mx + b$ )**

What are my Coordinates?



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In the last unit we talked about

- initial values
- vertical intercepts
- constant

They all represented the same thing!!

$$y = mx + b$$


In the last unit we talked about

- initial values
- vertical intercepts
- constant

$$y = mx + b$$

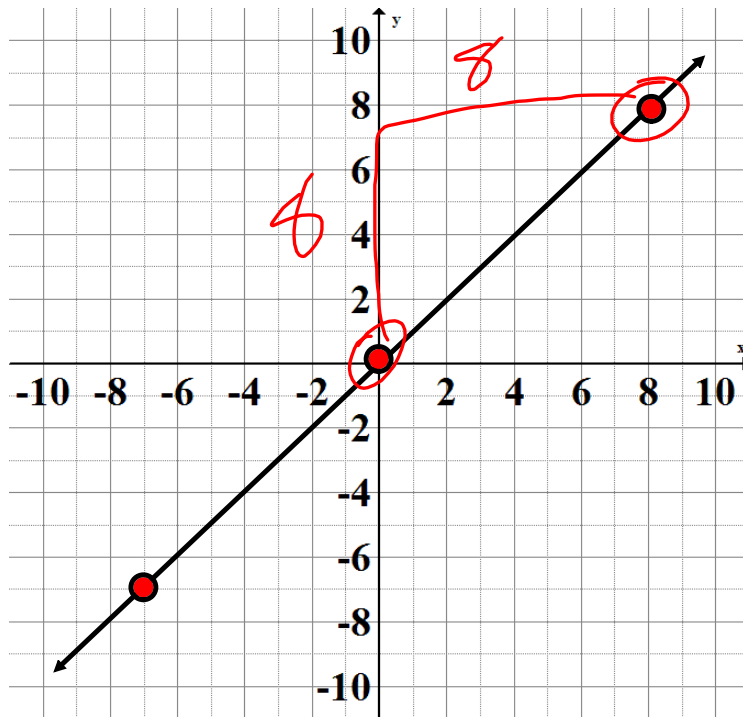


In this unit we will also call  $b$  the

**$y$ -intercept**

## Minds on

What do you know?



Slope?

$$\frac{8}{8} = 1$$

y-intercept?

0

Equation?

$$y = x$$

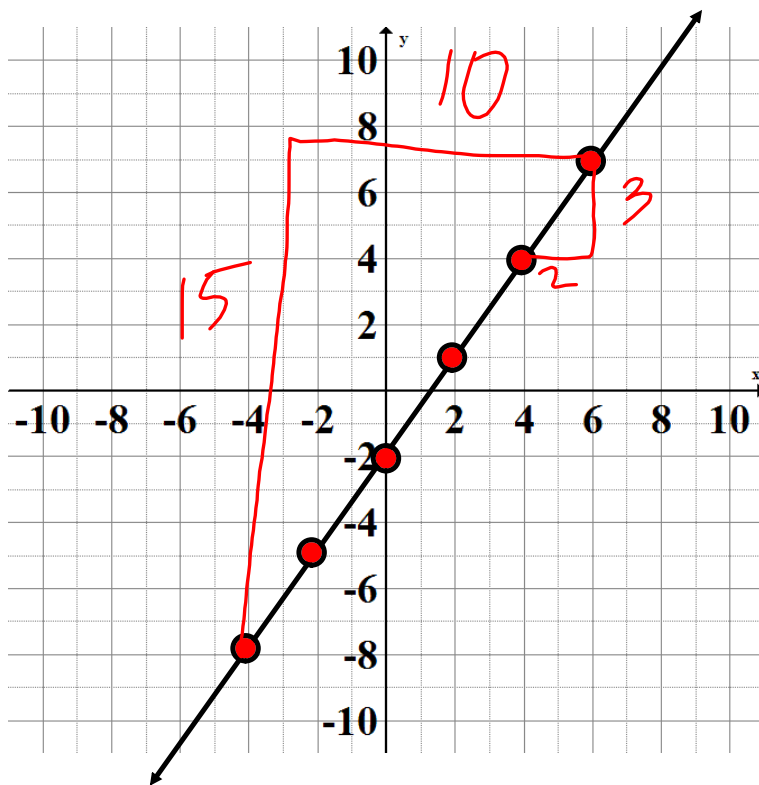
$$y = x + 0$$

$$y = x + 0$$

$$y = x$$

## Minds on

What do you know?



Slope?

$$\frac{3}{2}$$

y-intercept?

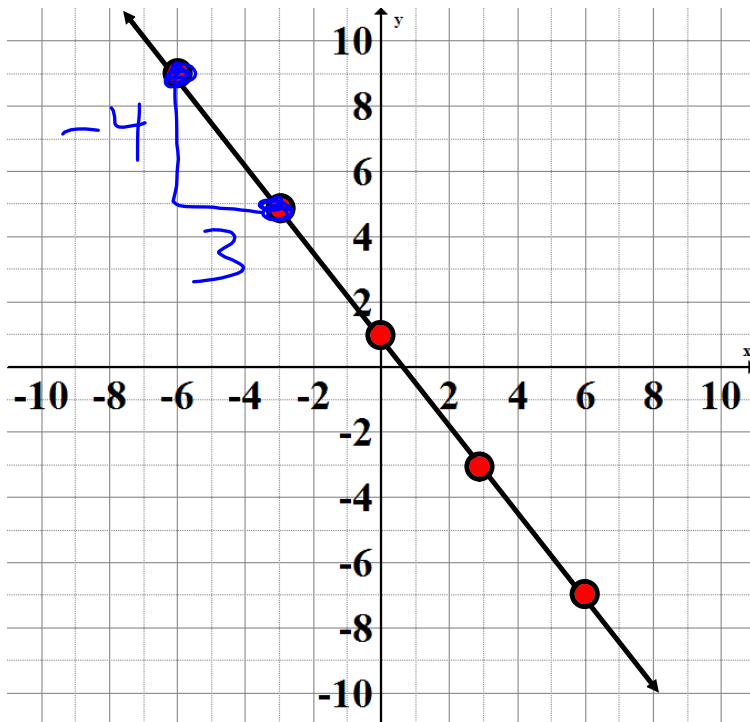
$$-2$$

Equation?

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

## Minds on

What do you know?



Slope?

$$\frac{-4}{3}$$

y-intercept?

$$1$$

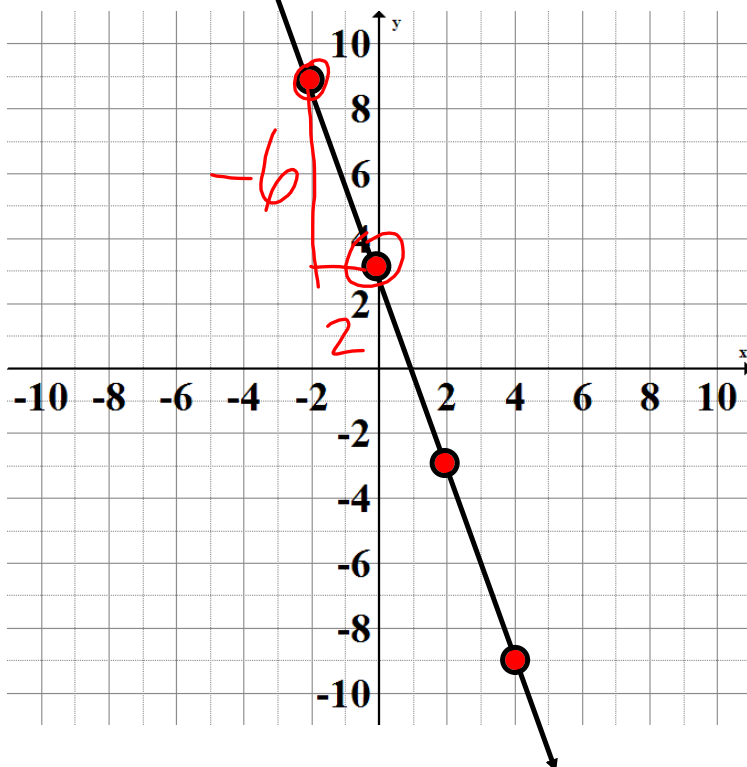
Equation?

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



## Minds on

What do you know?



Slope?

$$\frac{-6}{2} = -3$$

y-intercept?

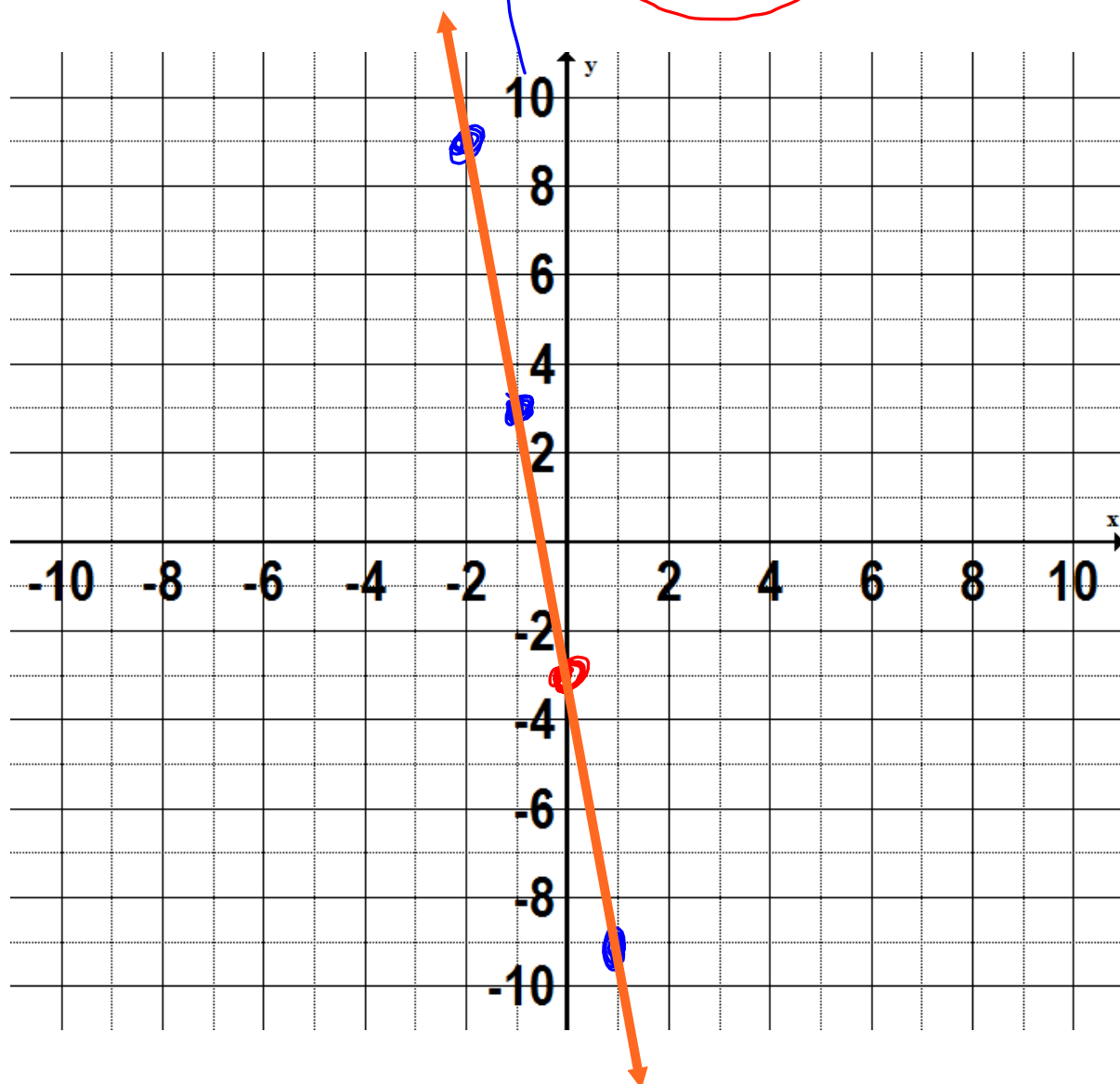
3

Equation?

$$y = -3x + 3$$

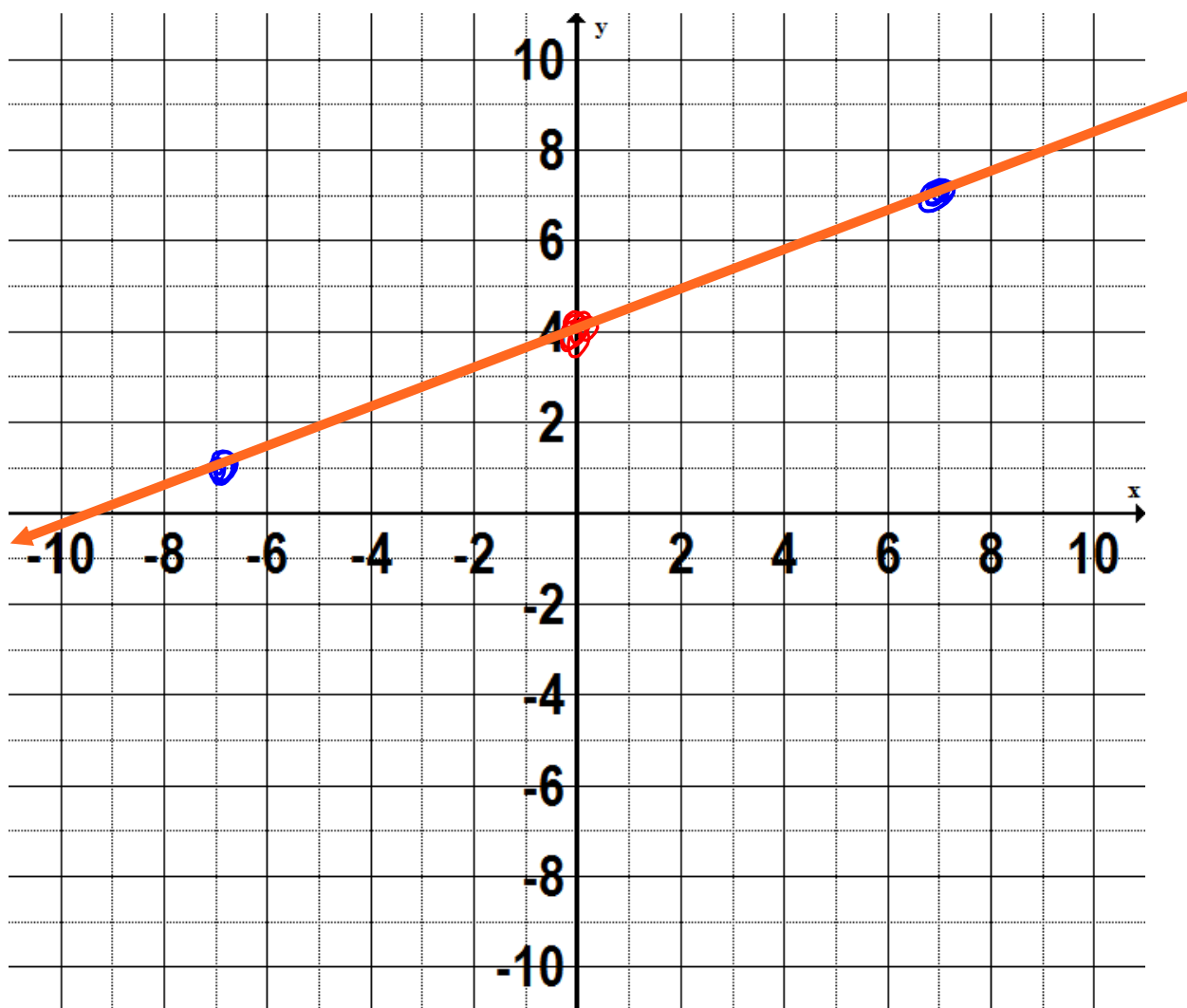
## Minds on

$$y = -6x - 3$$



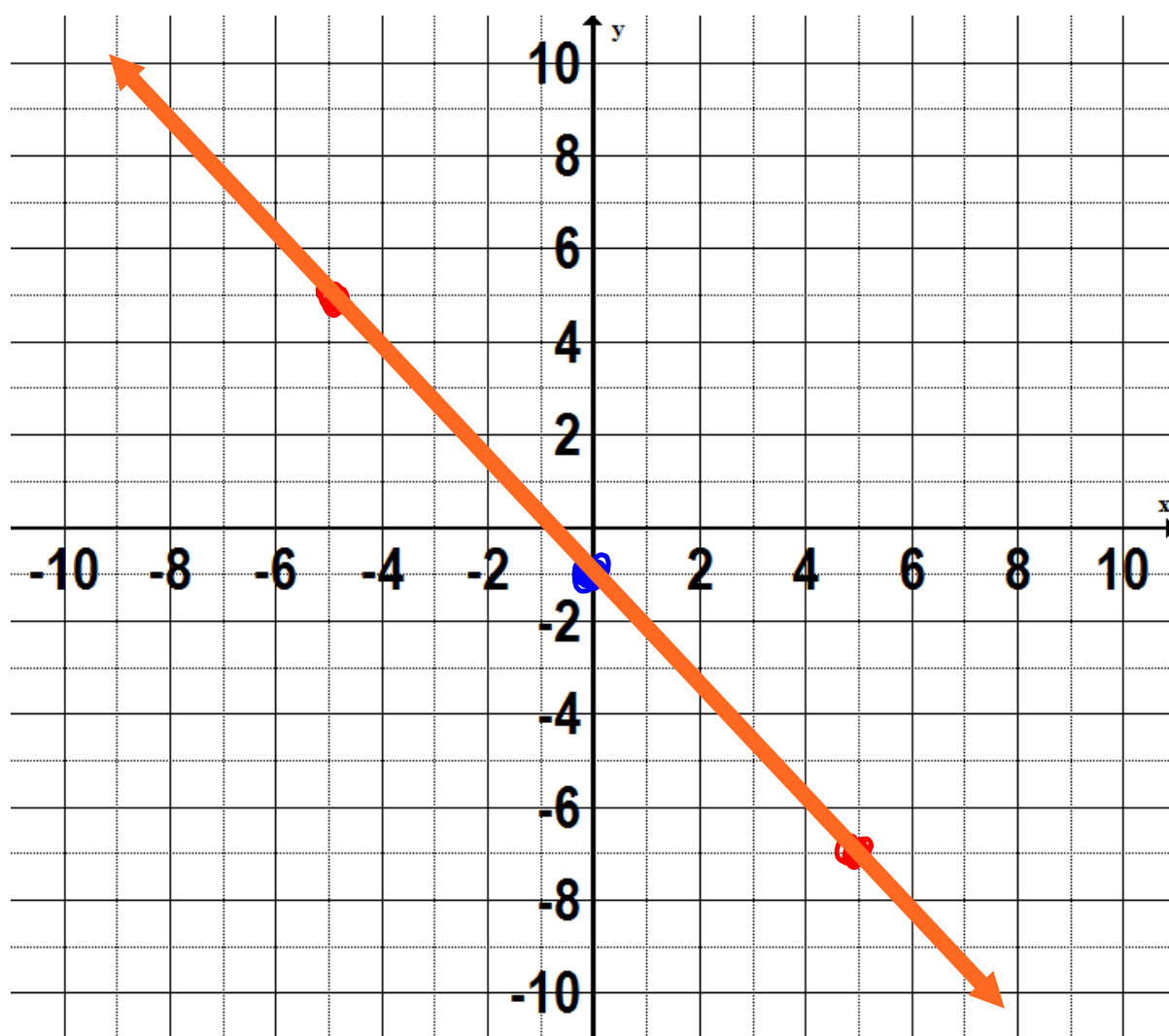
Minds on

$$y = \frac{3}{7}x + 4$$



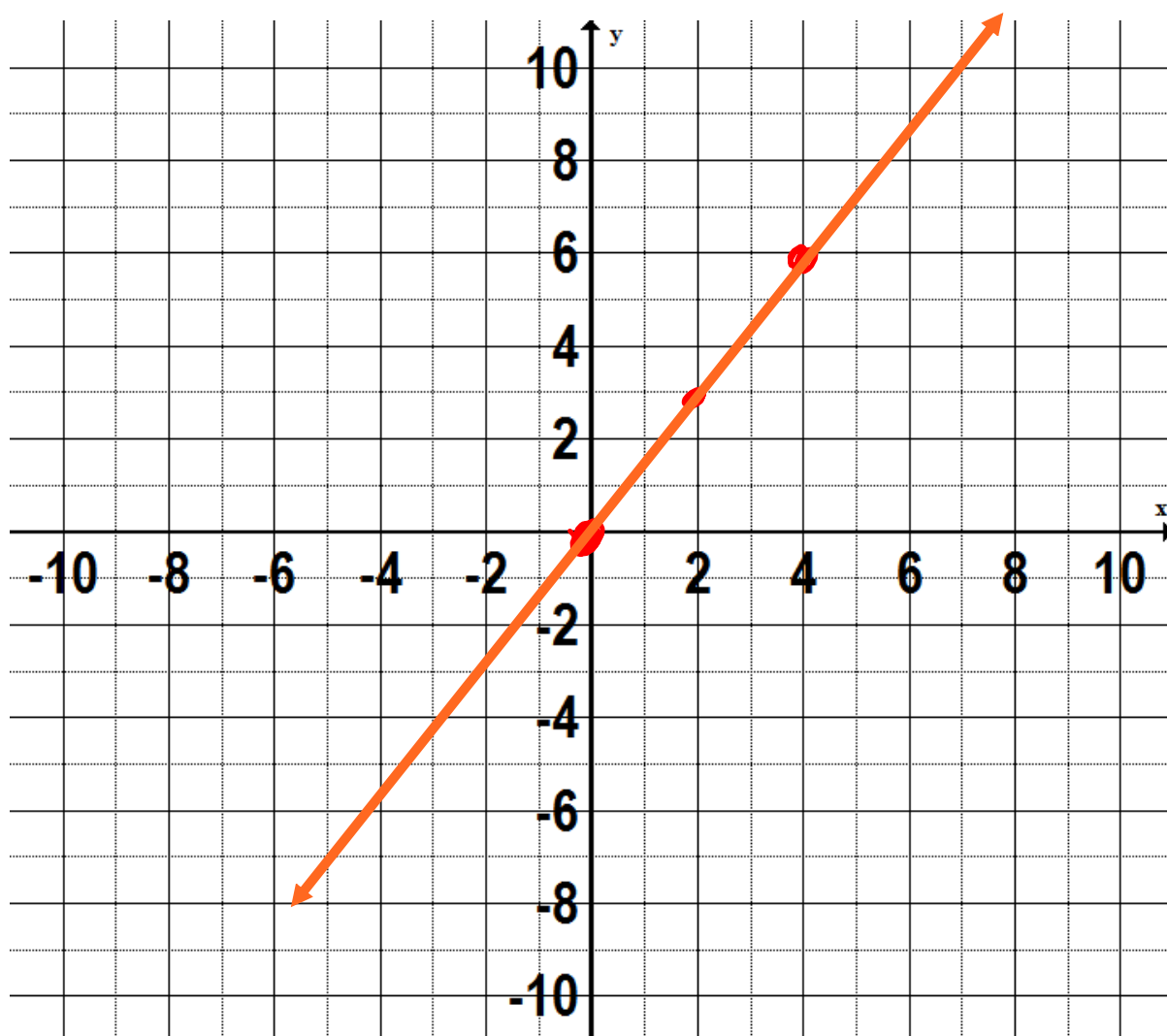
Minds on

$$y = -\frac{6}{5}x - 1$$



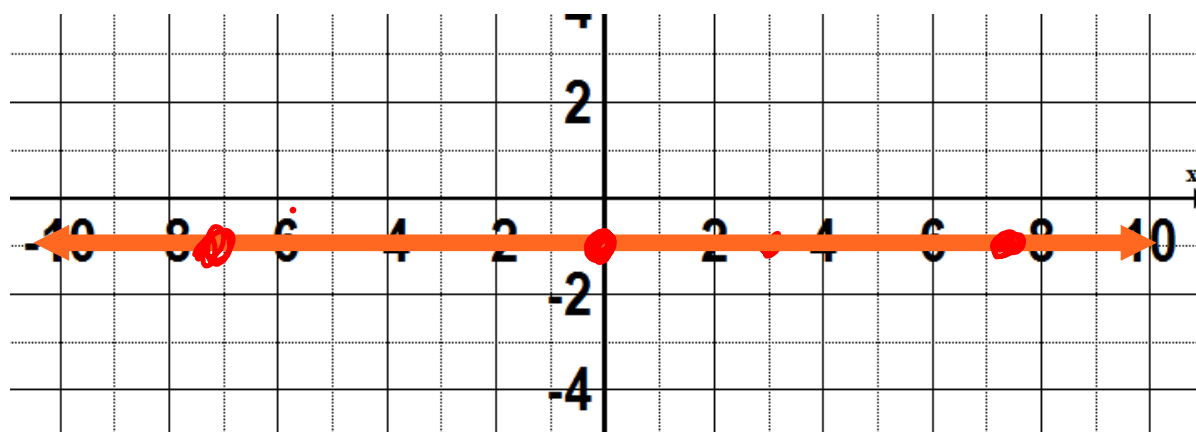
**Minds on**

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



Minds on

$$y = -1$$



$$\text{slope} = 0$$

$$y\text{-intercept} = -1$$

$$y = 0x - 1$$

In the equation

$$y = mx + b$$

**m is the slope of the line**

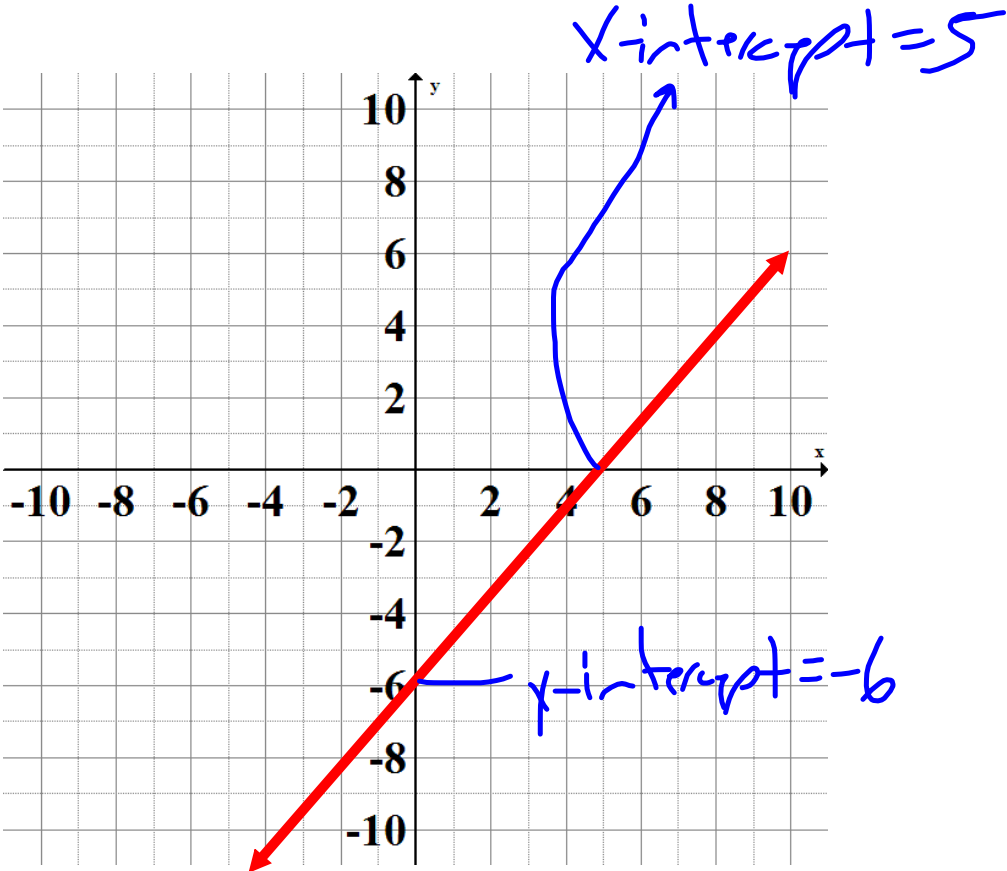
- the "steepness"
- the  $\frac{\text{rise}}{\text{run}}$  between ANY two points

**b is the y-intercept of the line**

- the value of y when x is 0
- where the line crosses the y-axis
- the "initial value"

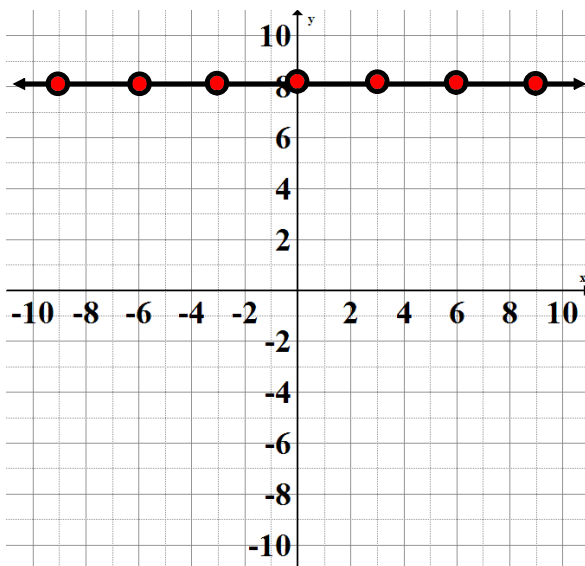






**Action!**

- **Horizontal** and Vertical Lines



Slope?

0

y-intercept?

8

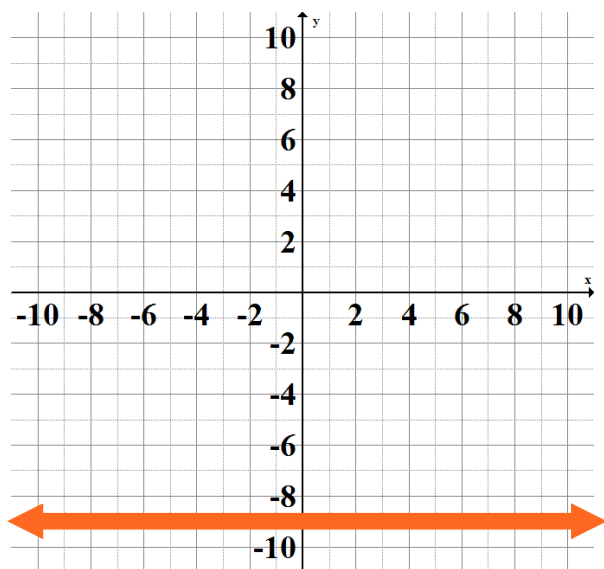
Equation?

$$y = 8$$

**Action!**

## Horizontal and Vertical Lines

$$y = -9$$



Slope?

0

y-intercept?

-9

x-intercept?

NONE!

## Action!

# Horizontal and Vertical Lines

- A horizontal has a slope of 0.
- The equation of a horizontal line is always in the form  $y=b$  where  $b$  is the  $y$ -intercept of the line.
- A horizontal does not have an  $x$ -intercept

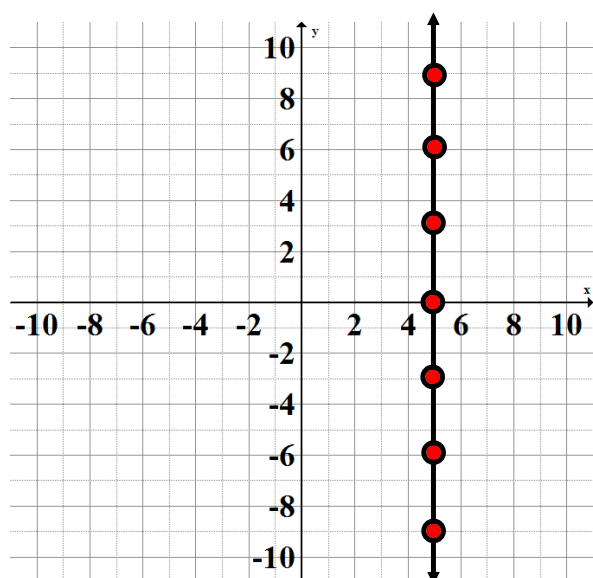
Slope	Vertical Line	$x$ -intercept
$y$ -intercept	Horizontal Line	Undefined

$$x = a$$

$$y = b$$

**Action!**

- Horizontal and Vertical Lines



Slope: undefined!!

y-intercept: none!

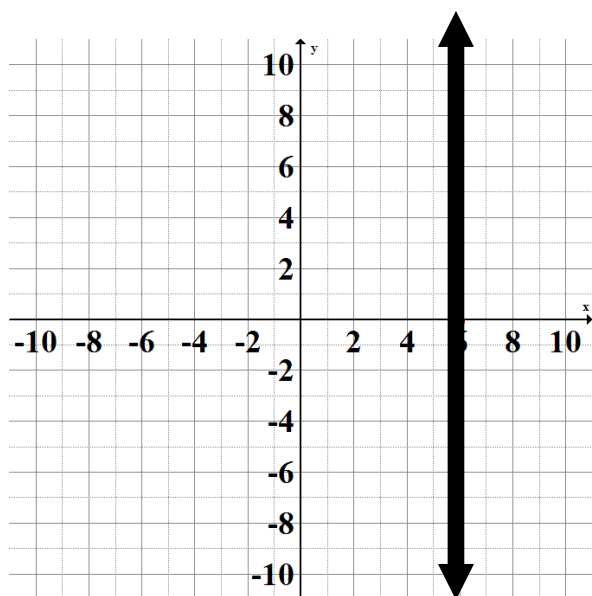
x-intercept: 5

Equation:  $x = 5$

**Action!**

## Horizontal and Vertical Lines

$$x = 6$$



Slope?

undefined

y-intercept?

NONE

x-intercept?

6

## Action!

### Horizontal and **Vertical** Lines

- The slope of a vertical line is always undefined.
- The equation of a Vertical Line is always in the form  $x = a$  where  $a$  is the  $x$ -intercept of the line.
- A vertical line does not have a  $y$ -intercept.

Slope	Vertical Line	$x$ -intercept
$y$ -intercept	Horizontal Line	Undefined

$$x = a$$

$$y = b$$