

## Warm-up

Integers review and practice

Log-in to your chromebook and go to

[www.thatquiz.org](http://www.thatquiz.org)

At the bottom right enter in:

BQF8DMZO

Take out your notes, you have five minutes to look over your notes on slope.

# Slope-Intercept Form

# SLOPE Y-INTERCEPT FORM

$$(y = mx + b)$$

$$y = m \cdot x + b$$

- \* In slope-intercept form, the y must always be on the left side of the = by itself!!!!
- \* The "mx" must be right after the = sign.
- \* The constant (b) must always be at the end- this is the y - intercept.

When our equation is in slope-intercept form ( $y = mx + b$ ), we can use the equation to find the slope and y-intercept.

If the equation is NOT in slope intercept form, we can rearrange it and then find the slope and y-intercept.

**\*When rearranging:  
Add/Subtract FIRST  
Multiply/Divide LAST**

# SLOPE Y-INTERCEPT FORM

$$(y = mx + b)$$

*Identify the slope and y-intercept of the equation*

$$y = 4x + 3 \quad m = 4 \quad b = 3$$

$$y = 4x + 3 \quad (0,3)$$

*Find the "m" & "b" values  
from the  $y = mx + b$  form*

$$y = x - 6 \quad m = 1 \quad b = -6$$

$$y = 1x - 6 \quad (0,-6)$$

# PRACTICE

$$(y = mx + b)$$

*Identify the slope and y-intercept of the equation*

1)  $y = 3x - 2$

$m = 3, b = -2$   
 $(0, -2)$

2)  $y = -7x + 9$

$m = -7, b = 9$   
 $(0, 9)$

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

$m = \frac{2}{3}, b = 2$   
 $(0, 2)$



# PRACTICE

$$(y = mx + b)$$

*Given the slope and y-intercept, write the equation*

4)  $m = 5$        $b = -9$

$$y = mx + b$$
$$y = 5x - 9$$

5)  $m = -2$        $b = 8$

$$y = mx + b$$
$$y = -2x + 8$$

6)  $m = \frac{4}{5}$        $b = 17$

$$y = mx + b$$
$$y = \frac{4}{5}x + 17$$

# PRACTICE

$$(y = mx + b)$$

Identify the slope and y-intercept of the equation

7)  $y + 3x = 15$

$$y + 3x - 3x = -3x + 15$$

$$y = -3x + 15$$

$$m = -3, b = 15$$

(0, 15)

8)  $y - 4x = 8$

$$y - 4x + 4x = 8 + 4x$$

$$y = 4x + 8$$

$$m = 4, b = 8$$

(0, 8)

9)  $y + 8 = 5x$

$$y + 8 - 8 = 5x - 8$$

$$y = 5x - 8$$

$$m = 5, b = -8$$

(0, -8)

## **HW: Slope-Intercept Form WS**

# SLOPE Y-INTERCEPT FORM

$$(y = mx + b)$$

*Graphing Using Slope-Intercept Form*

1) Equation **MUST** be in  $y = mx + b$  to graph.

2) Find  $m$  (slope) and  $b$  (y-intercept)

3) Plot  $b$  (y-intercept) on the graph.

**\*\* $b$  is where you Begin.**

4) Start at y-intercept and use  $m$  (slope) to plot points for the line.

**\*\*  $m$  is how many you Move**

**\*\*if  $m$  is positive, move up and to the right.**

**\*\*if  $m$  is negative, move down and to the right.**

5) Draw a line through the points.

# SLOPE Y-INTERCEPT FORM

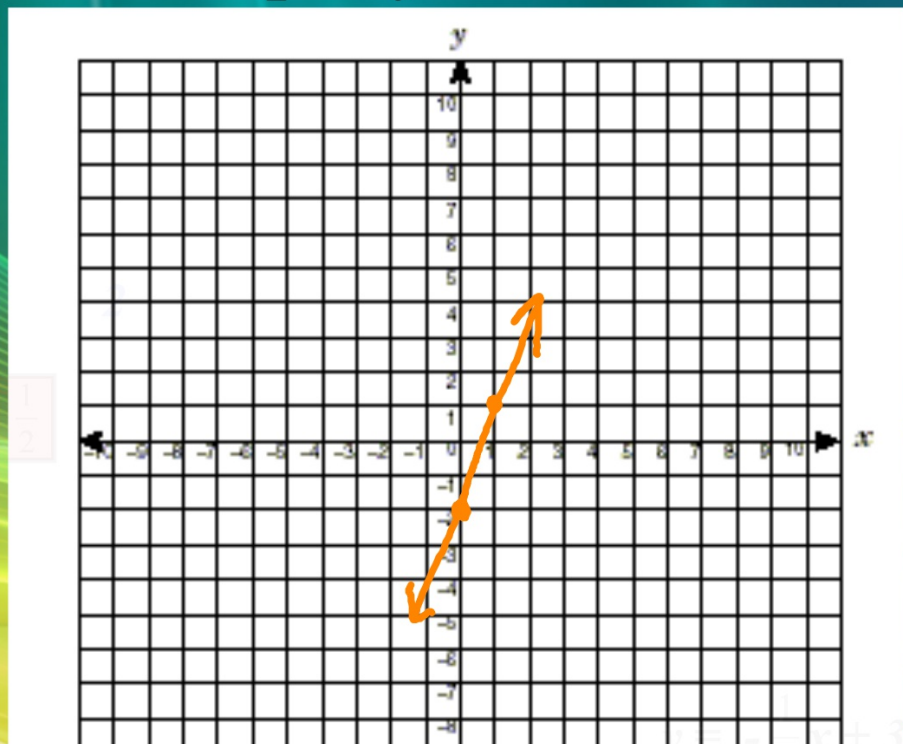
$$(y = mx + b)$$

Ex. 1)

Graph:  $y = 3x - 2$

$$m = \frac{\Delta y}{\Delta x} = \frac{3 \uparrow}{1 \rightarrow}$$

$$b = -2$$

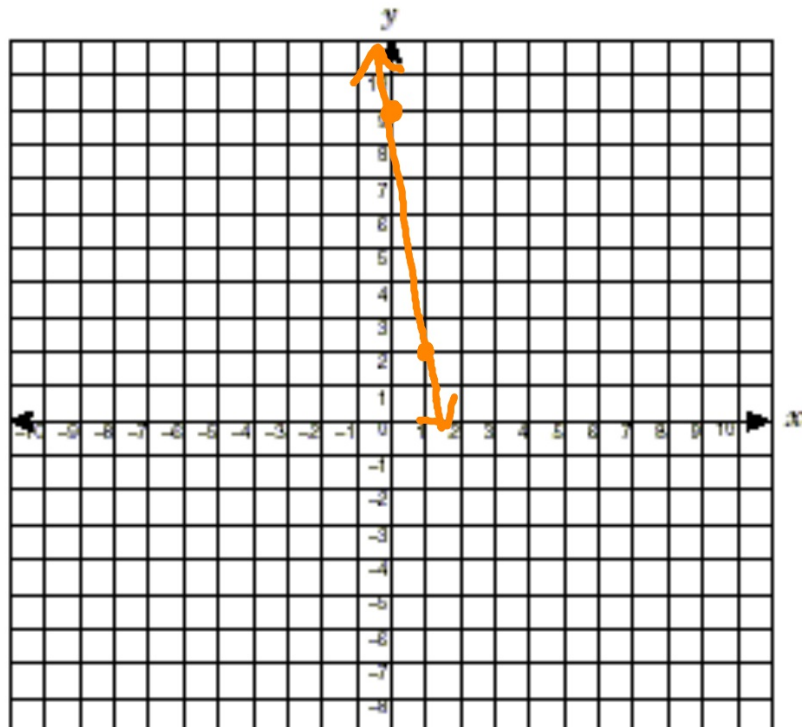


# PRACTICE

Ex.2)  $(y = mx + b)$   
 $y = -7x + 9$

$$m = \frac{\Delta y}{\Delta x} = \frac{-7}{1} \begin{matrix} \downarrow \\ \rightarrow \end{matrix}$$

$b = 9$



# PRACTICE

Ex. 3)  $(y = mx + b)$   
 $y = x + 2$

$$m = \frac{\Delta y}{\Delta x} = \frac{1 \uparrow}{1 \rightarrow}$$

$$b = 2$$

