

Kahoot warm-up and review

Equations from a Graph

To Convert from a graph to an equation:

- 1) Identify the slope ($m = ?$)
- 2) Identify the y-intercept ($b = ?$)
- 3) Plug into slope-intercept form ($y = mx + b$)

Converting Graphs to Equations

1. What is the y intercept (b) of this line?

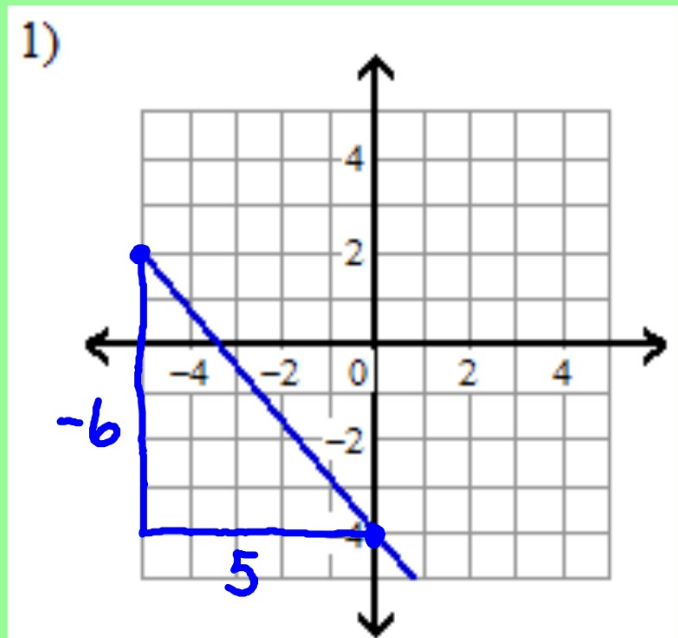
$$b = -4$$

2. What is the slope (m) of this line?

$$m = \frac{\Delta y}{\Delta x} = \frac{-6}{5}$$

3. What is this lines equation?

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



Converting Graphs to Equations

1. What is the y intercept (b) of this line?

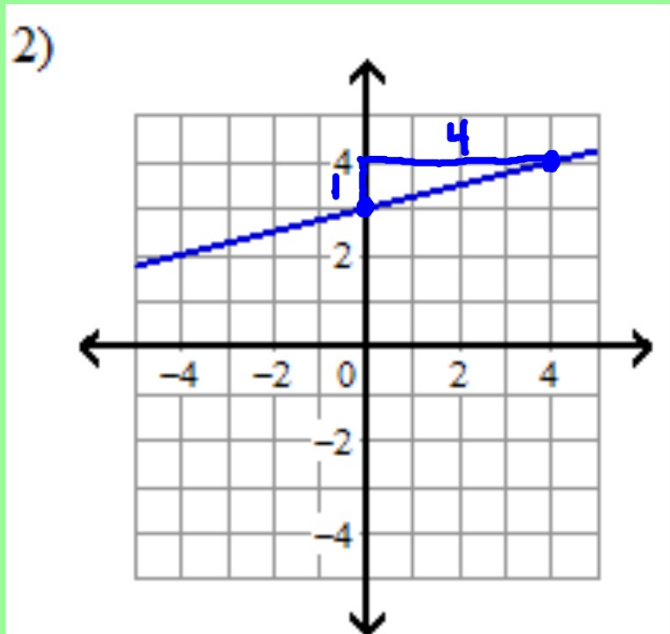
$$b = 3$$

2. What is the slope (m) of this line?

$$m = \frac{\Delta y}{\Delta x} = \frac{1}{4}$$

3. What is this lines equation?

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



Equations of Horizontal and Vertical Lines

****HOY and VUX****

HOY~ $y = \#$ means that you will have a:

- Horizontal Line
- 0 (zero) slope
- Y-axis is where it will cross

VUX~ $x = \#$ means that you will have a:

- Vertical Line
- Undefined Slope
- X-axis is where it will cross

Converting Graphs to Equations

1. What is the y intercept (b) of this line?

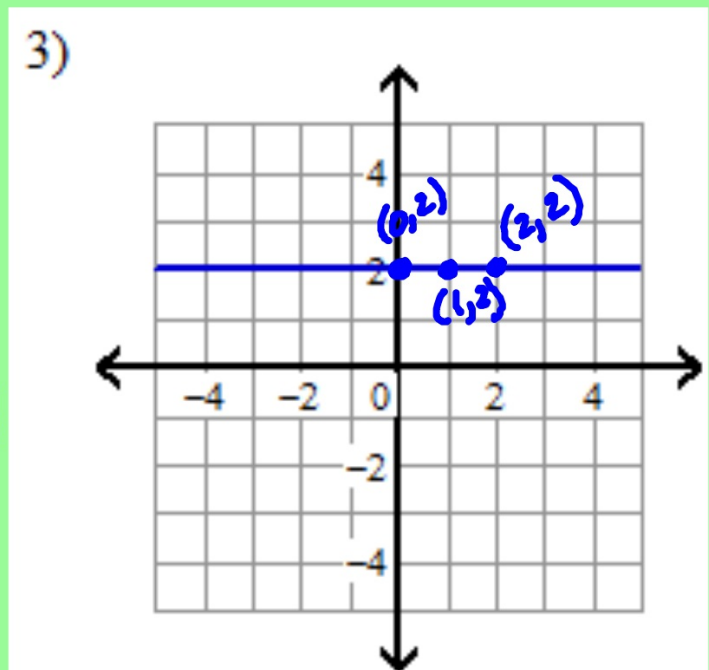
$$b = 2$$

2. What is the slope (m) of this line?

$m = 0$, horizontal line

3. What is this lines equation?

$$y = 2$$



HOY or VUX?

Converting Graphs to Equations

1. What is the y intercept (b) of this line?

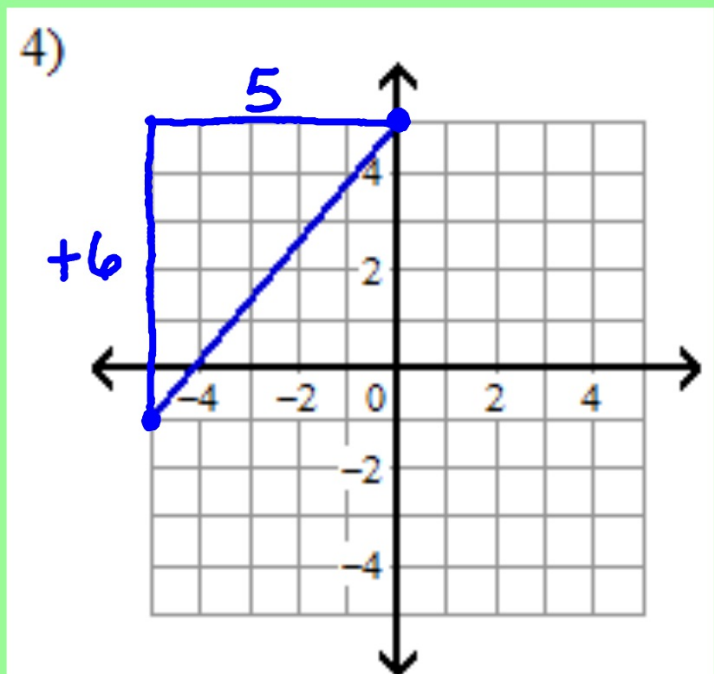
$$b=5$$

2. What is the slope (m) of this line?

$$m = \frac{\Delta y}{\Delta x} = \frac{6}{5}$$

3. What is this lines equation?

$$y = mx + b$$
$$y = \frac{6}{5}x + 5$$



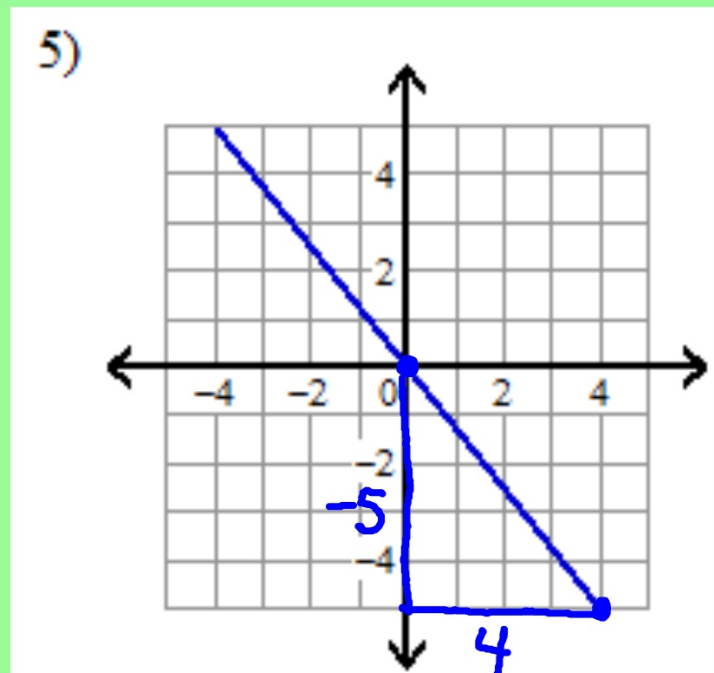
Converting Graphs to Equations

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

$$b = 0$$

What is this line's equation?

$$\begin{aligned}y &= mx + b \\y &= -\frac{5}{4}x + 0 \\y &= -\frac{5}{4}x\end{aligned}$$



Converting Graphs to Equations

$$m = \frac{\Delta y}{\Delta x} = \frac{-1}{1} = -1$$

$$b = 3$$

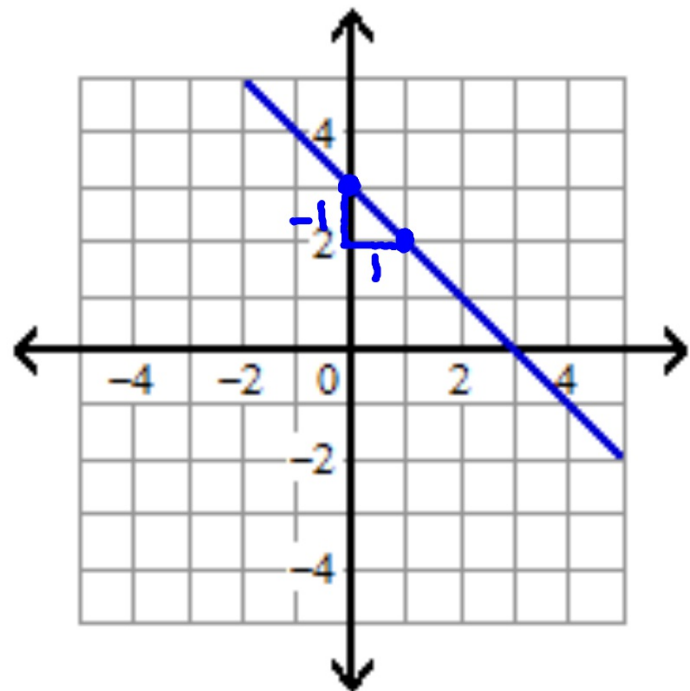
What is this line's equation?

$$y = mx + b$$

$$y = -1x + 3$$

$$y = -x + 3$$

6)



Converting Graphs to Equations

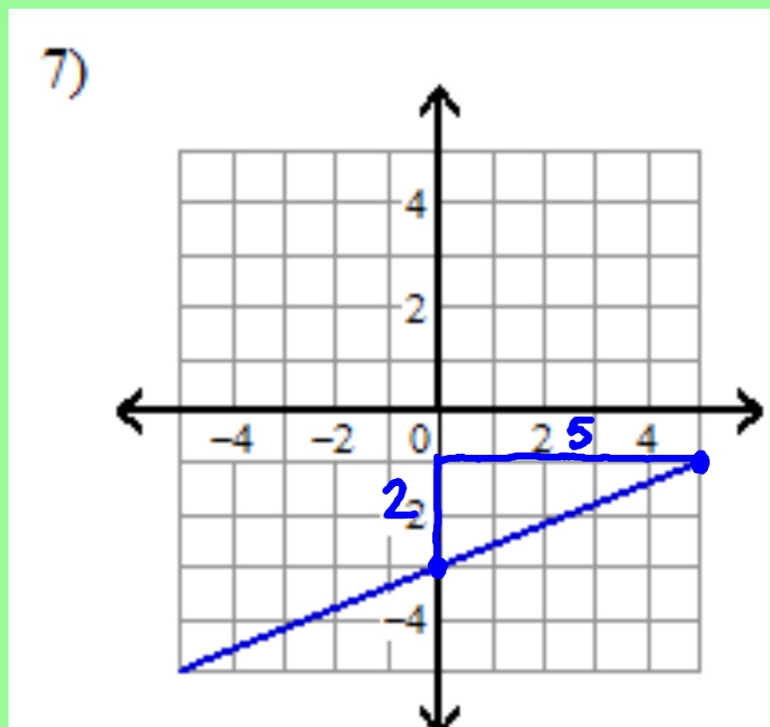
$$m = \frac{\Delta y}{\Delta x} = \frac{2}{5}$$

$$b = -3$$

What is this line's equation?

$$y = mx + b$$

$$y = \frac{2}{5}x - 3$$



Converting Graphs to Equations

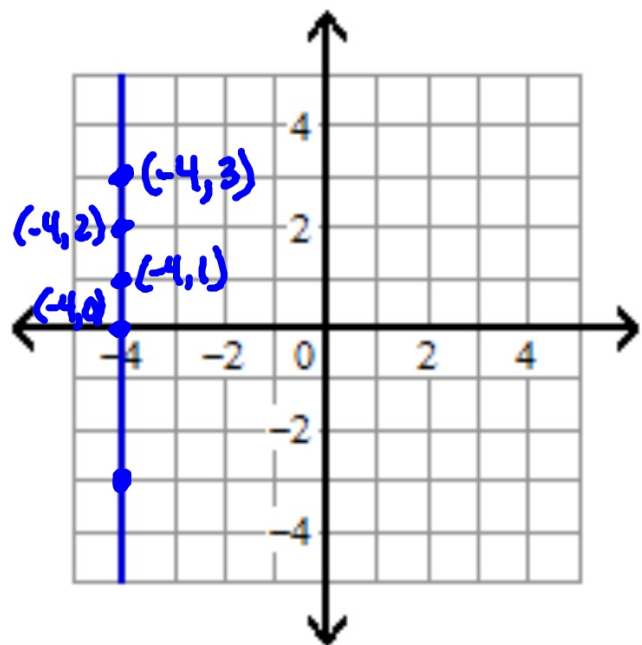
$m = \text{undefined}$

$b = \text{none}$
 $x\text{-int.} = -4$

What is this line's equation?

$$x = -4$$

8)



HOY or VUX?

3 Different Forms for Linear Equations

1) Slope-intercept Form: $y=mx + b$

2) Standard Form: $Ax +By = C$

3) Point-Slope Form: $y - y_1 = m (x - x_1)$