

2. Find the slope:

a)  $(-8, 4)$  &  $(-2, -6)$   
 $m = \frac{-6 - 4}{-2 - (-8)} = \frac{-10}{6} = -\frac{5}{3}$   
 $-\frac{5}{3}$

b)  $2x - 3y = 12$   
 $-3y = -2x + 12$   
 $y = \frac{2}{3}x - 4$   
 $m = \frac{2}{3}$

c) 

x	y
-3	5
-2	7
0	11

  
 $\begin{matrix} +1 \\ +2 \end{matrix} \left\langle \begin{matrix} | \\ | \\ | \end{matrix} \right\rangle \begin{matrix} +2 \\ +4 \end{matrix}$   
 $m = 2$

1. Create a table using  $f(x) = 2x^2 - 3$  for the domain of  $\{-5, -3, 0, 1, 4\}$

x	y
-5	$2(-5)^2 - 3 = 47$
-3	$2(-3)^2 - 3 = 15$
0	$2(0)^2 - 3 = -3$
1	$2(1)^2 - 3 = -1$
4	$2(4)^2 - 3 = 29$



3. **Explain** how to find the slope of a line from a graph.

\*\*Use full sentences

Find two points on the line.  
 Start at the point on the left, rise to match the height of the second point.  
 Run to the second point.  
 Write the rise over the run and simplify if you can.

H

Horizontal Line

O

Slope = zero

Y

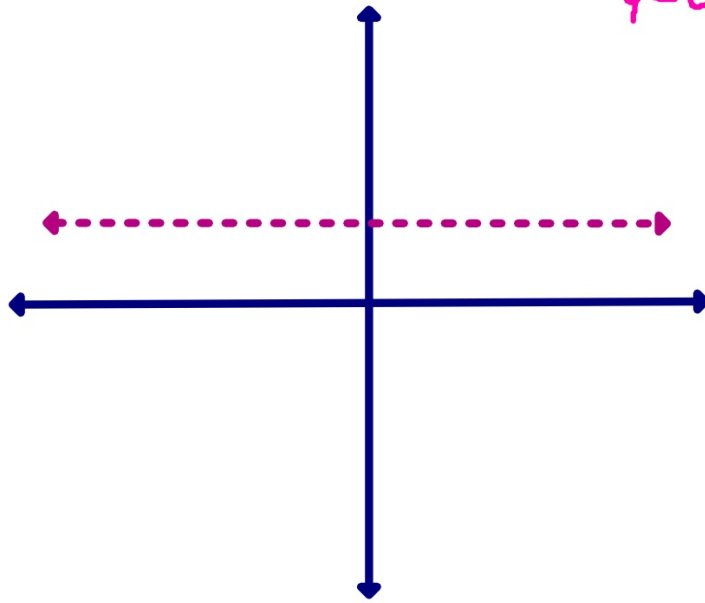
Equation:  $y = \#$

*Crosses the  
y-axis*

V

U

X

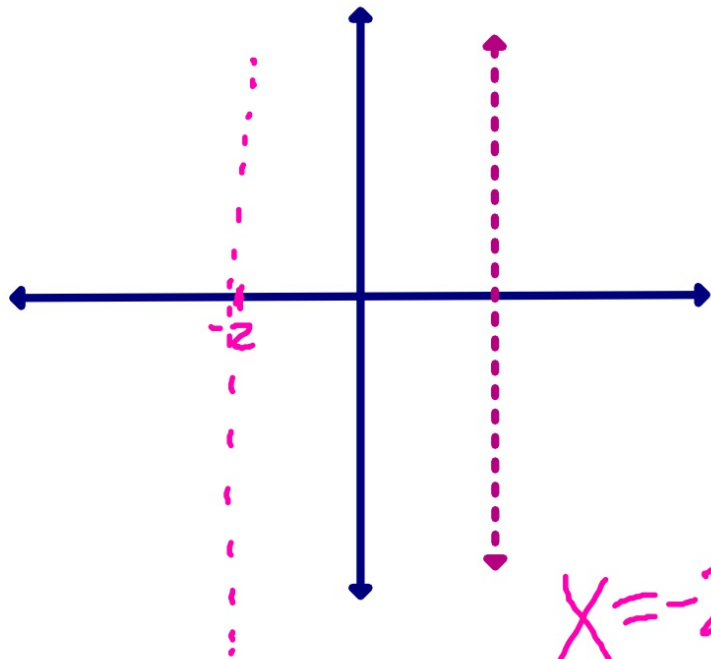


H

O

Y

V  
V  
e  
r  
t  
i  
c  
a  
l  
L  
i  
n  
e



U  
Slope= Undefined

X  
Equation:  $x = \#$   
crosses the x-axis

$x = -2$   
 $m = \emptyset$   
 $b = \emptyset$

# **Slope- Intercept Form**

$$y = mx + b$$



**m = slope**



**b = y-intercept**

**\*where the equation  
crosses the y-axis**

Given a value for m and for b...write an equation

Example 1:

$$m = -4$$

$$b = 5$$

$$y = -4x + 5$$

Given a value for m and for b...write an equation

**You Try:**

$$m = 10$$

$$b = -3$$

$$y = 10x - 3$$

Given a value for m and for b...write an equation

**Example 3:**

$$m = \frac{3}{4}$$

$$b = -9$$

$$y = \frac{3}{4}x - 9$$



Given a value for m and for b...write an equation

**You Try:**

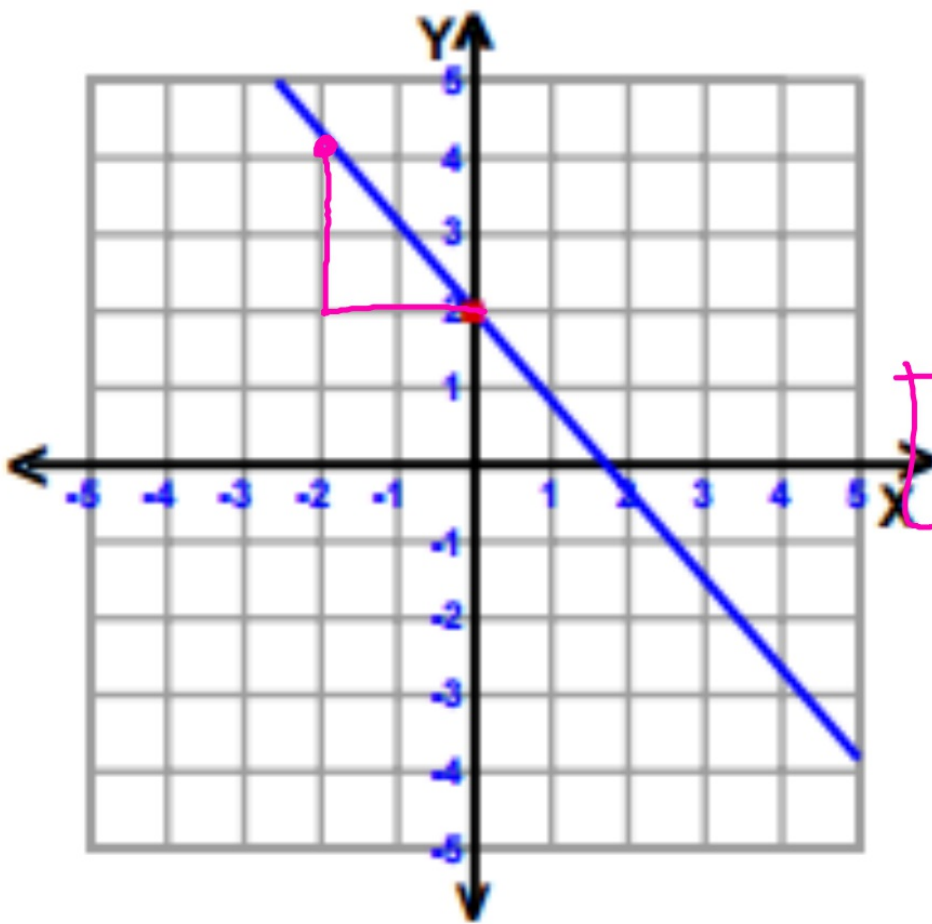
$$m = \frac{5}{4}$$

$$b = 7$$

$$y = \frac{5}{4}x + 7$$

Given a graph, write an equation in slope-intercept form

Example 1:



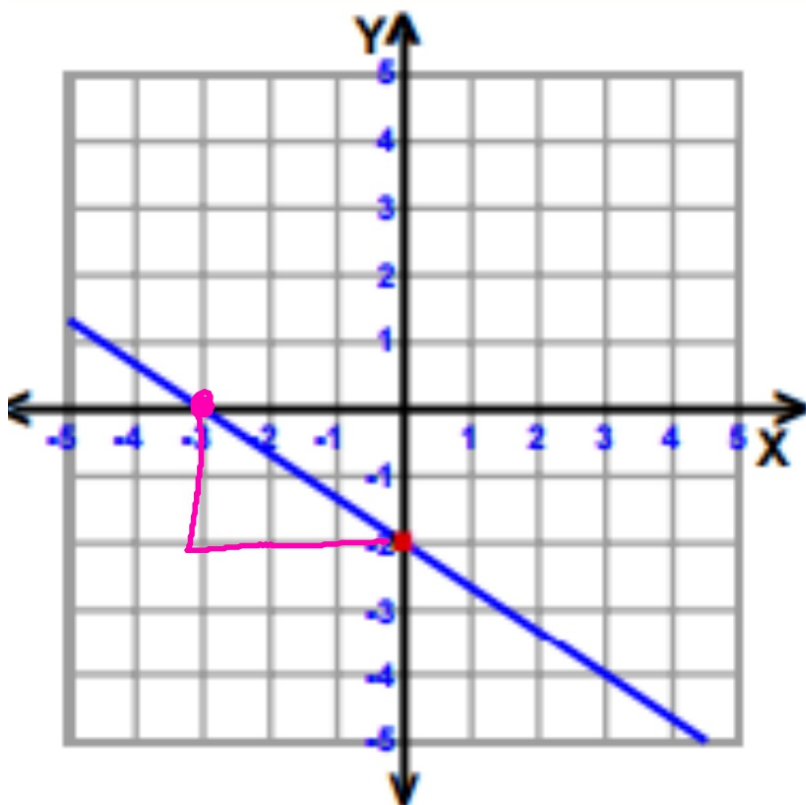
$$\frac{-2}{2} = -1$$

$$m = -1$$

$$b = 2$$

$$y = -x + 2$$

Given a graph, write an equation in slope-intercept form



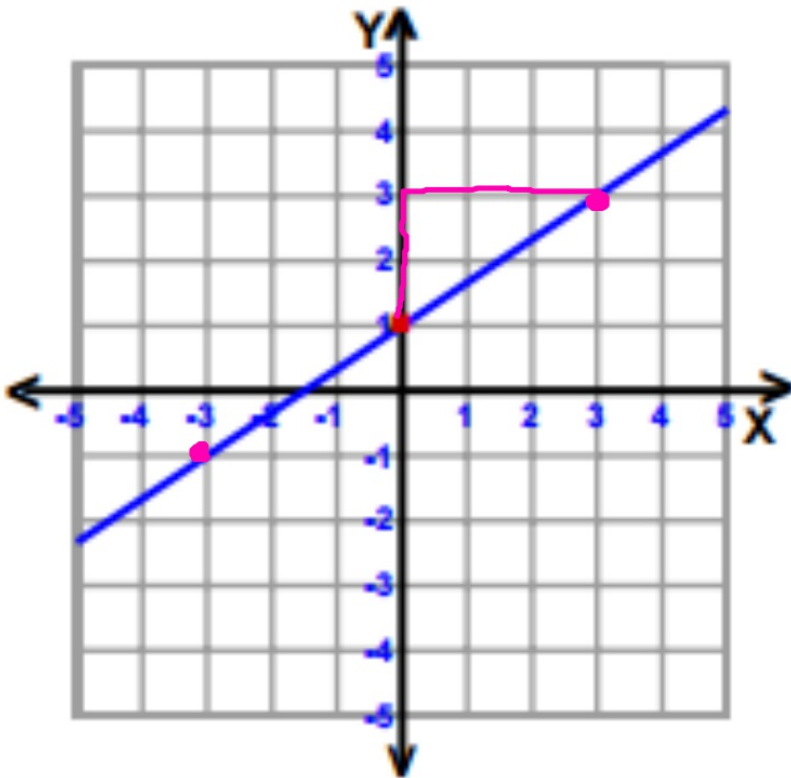
$$m = -\frac{2}{3}$$

$$b = -2$$

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

Given a graph, write an equation in slope-intercept form

Example 3:

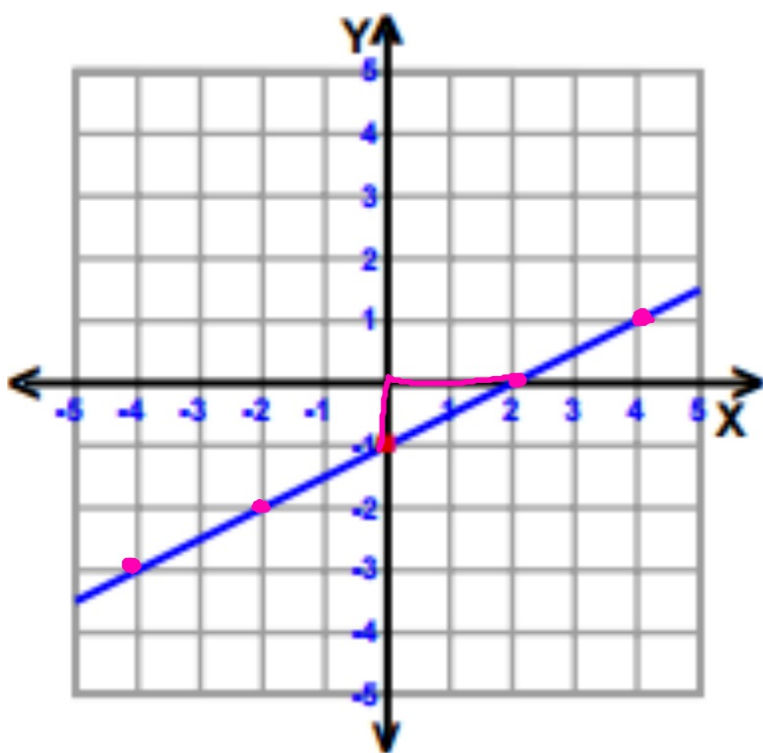


$$m = \frac{2}{3}$$

$$b = 1$$

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

Given a graph, write an equation in slope-intercept form



$$m = \frac{1}{2} \quad b = -1$$

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

Given a table, write an equation in slope-intercept form

Example 1:

x	0	1	2	3	4
y	5	3	1	-1	-3

\*when  $x=0$   
the  $y$  is  
the  $y$ -incept

$b=5$

$y$ -incept

$-2$   $-2$   $-2$   $-2$

$m = \frac{-2}{1} = -2$

$y = -2x + 5$

Given a table, write an equation in slope-intercept form

You Try:

x	0	1	2	3	4
y	0	2	4	6	8

$b=0$

$m = \frac{2}{1} = 2$

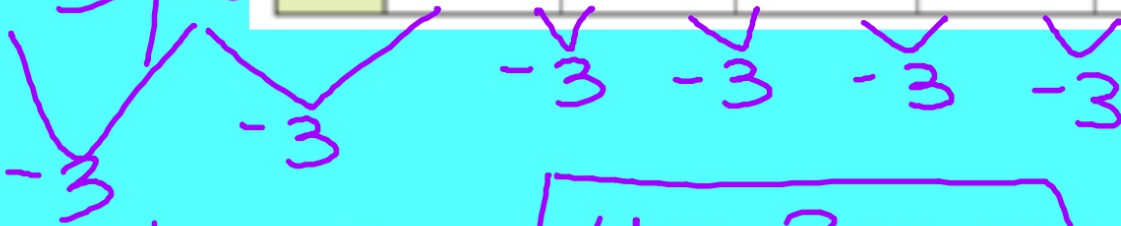
$y = 2x$

Given a table, write an equation in slope-intercept form

Example 3:

x	2	3	4	5	6
y	-11	-14	-17	-20	-23

$$\begin{array}{r|l} 0 & 1 \\ \hline -5 & -8 \end{array}$$



$$b = -5$$

$$m = -3$$

$$y = -3x - 5$$



Given a table, write an equation in slope-intercept form

You Try:

0

-1

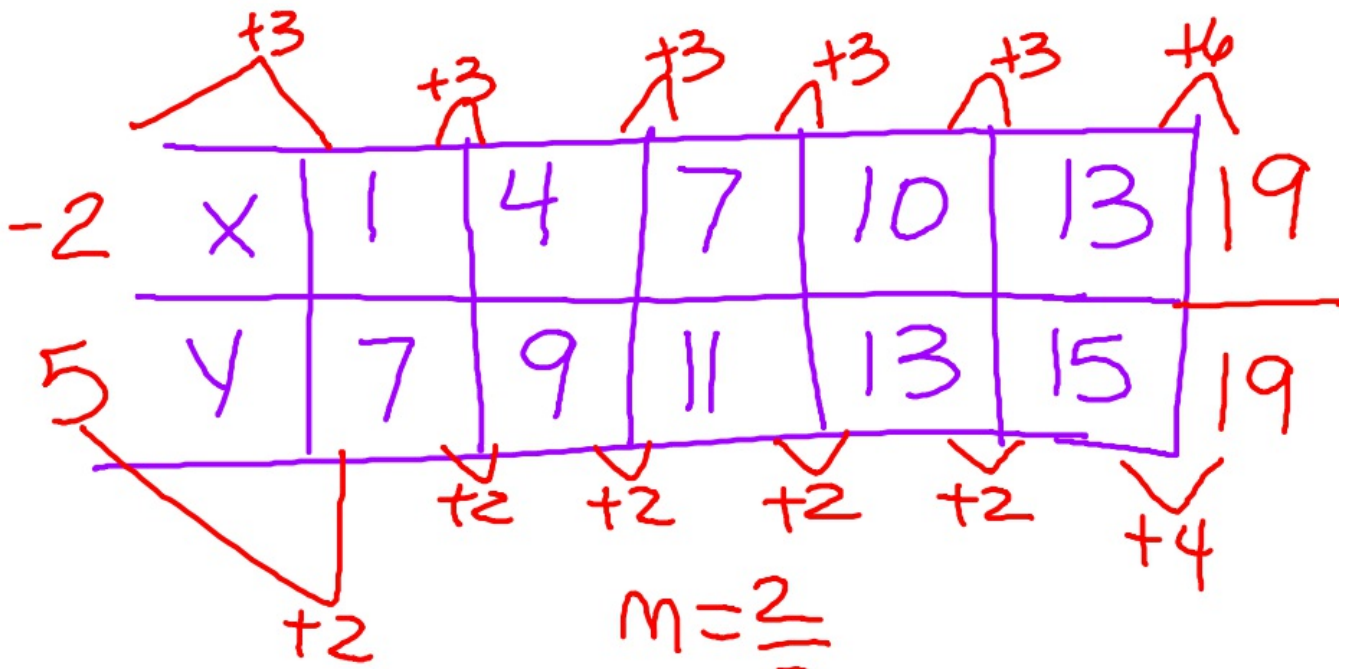
$$b = -1$$

x	1	2	3	4	5
y	1	3	5	7	9

+2 +2 +2 +2

$$m = \frac{2}{1} = 2$$

$$y = 2x - 1$$



$$y = \frac{2}{3}x + \frac{19}{3}$$

X	Y
-2	5
-1	
0	
1	7
4	9
7	11
10	13
13	15

with  
with

$$y = mx + b$$

$$7 = \frac{2}{3}(1) + b$$

$$7 = \frac{2}{3} + b$$

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

$$b = \frac{19}{3}$$

X	7	5	3	1
Y	3	8	13	18

The table shows a linear relationship. A pink oval highlights the points (5, 8) and (3, 13). Blue arrows indicate the slope between these points: a vertical arrow from x=5 to x=3 is labeled  $-2$ , and a horizontal arrow from y=8 to y=13 is labeled  $+5$ . Similar arrows are shown for the points (7, 3) and (1, 18).

$m = -\frac{5}{2}$

$y = -\frac{5}{2}x + \frac{41}{2}$

$$y = mx + b$$

$$8 = -\frac{5}{2}(5) + b$$

$$8 = -\frac{25}{2} + b$$

$$\begin{array}{r} +25 \\ \frac{2}{2} \end{array} \quad \begin{array}{r} +25 \\ \frac{2}{2} \end{array} + b$$


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$$b = \frac{41}{2}$$