

5-9-17

Aim: SWBAT find the slope of a line given two points.

Do Now: Check HW

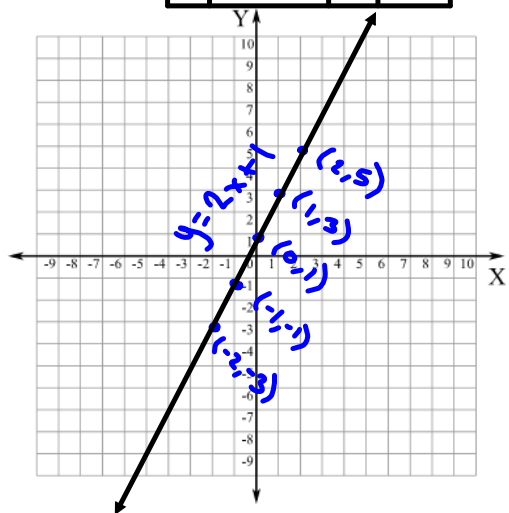
HW: Pg. 614 # 1-11, 16

Quiz Friday (Mon - Wed concepts)

Homework Answers

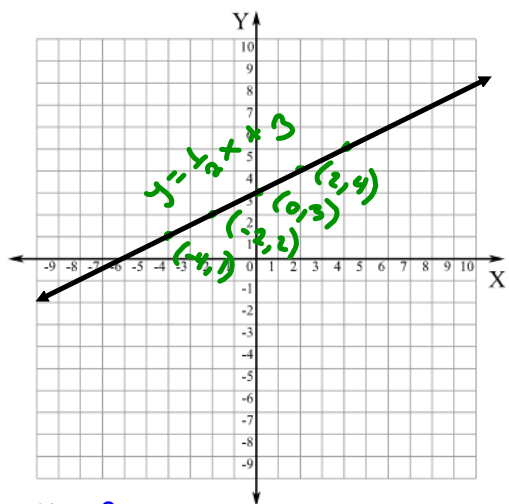
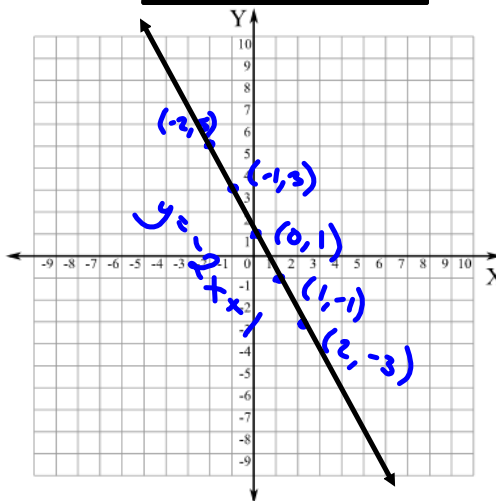
1. $y = 2x + 1$

x	$2x + 1$	y	(x, y)
-2	$2(-2) + 1$	-3	(-2, -3)
-1	$2(-1) + 1$	-1	(-1, -1)
0	$2(0) + 1$	1	(0, 1)
1	$2(1) + 1$	3	(1, 3)
2	$2(2) + 1$	5	(2, 5)



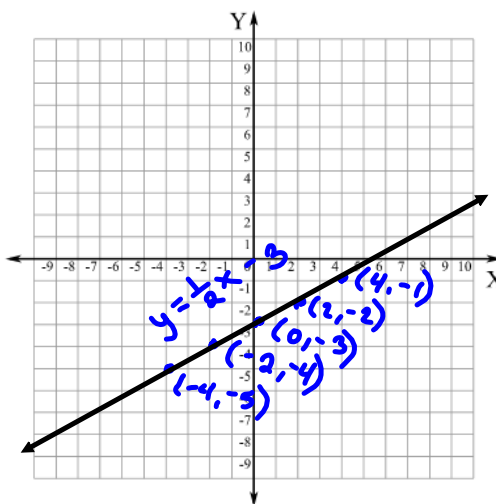
2. $y = -2x + 1$

x	$-2x + 1$	y	(x, y)
-2	$-2(-2) + 1$	5	(-2, 5)
-1	$-2(-1) + 1$	3	(-1, 3)
0	$-2(0) + 1$	1	(0, 1)
1	$-2(1) + 1$	-1	(1, -1)
2	$-2(2) + 1$	-3	(2, -3)



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

x	$\frac{1}{2}x + 3$	y	(x, y)
-4	$\frac{1}{2}(-4) + 3$	1	(-4, 1)
-2	$\frac{1}{2}(-2) + 3$	2	(-2, 2)
0	$\frac{1}{2}(0) + 3$	3	(0, 3)
2	$\frac{1}{2}(2) + 3$	4	(2, 4)
4	$\frac{1}{2}(4) + 3$	5	(4, 5)



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

x	$\frac{1}{2}x - 3$	y	(x, y)
-4	$\frac{1}{2}(-4) - 3$	-5	(-4, -5)
-2	$\frac{1}{2}(-2) - 3$	-4	(-2, -4)
0	$\frac{1}{2}(0) - 3$	-3	(0, -3)
2	$\frac{1}{2}(2) - 3$	-2	(2, -2)
4	$\frac{1}{2}(4) - 3$	-1	(4, -1)

Linear Equations

- line
- every point on the line is part of the solution set
any ordered pair (x,y)
satisfies the equation
- infinite number of solutions
because there are an infinite
number of points on the line

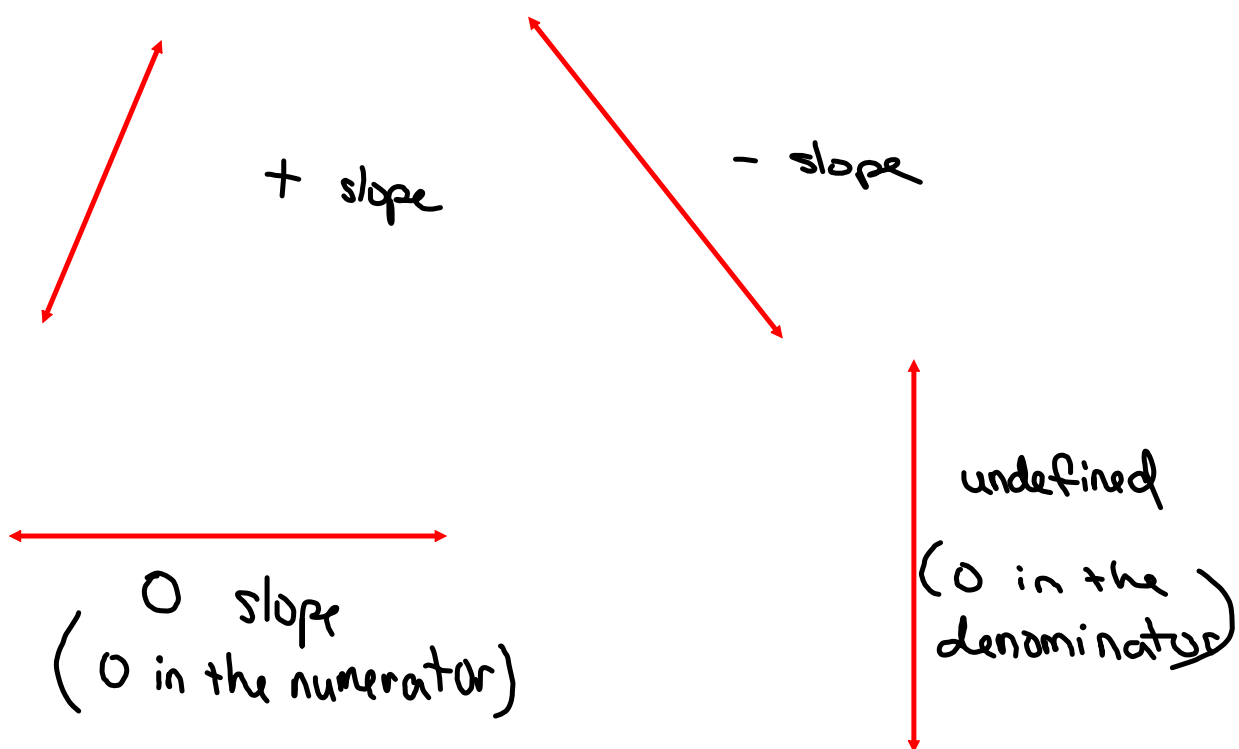
Linear Equations

- graph as straight lines because the function represents a constant rate of change

Characteristics of the Equation

- have two variables in separate terms
- each variable is raised to the first power
(sometimes x or y are raised to the zero power)

$$y = x - 1$$
$$3p + 5q = 16$$
$$s = 0.2t$$



Slope: the ratio of vertical change to horizontal change between any two points

$$y = mx + b$$

delta "change in"

$$m = \frac{\Delta y}{\Delta x} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

"the change in y over the change in x"

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope between the two points.

A(3, 1); B(5, 6)

x_1, y_1 x_2, y_2

x_2, y_2 x_1, y_1

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{6 - 1}{5 - 3}$$

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

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{1 - 6}{3 - 5}$$

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

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

Find the slope between the two points.

$$A(4, -3); B(-1, 0)$$

$$x_1, y_1 \quad x_2, y_2$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{0 - (-3)}{-1 - 4}$$

$$m = \frac{3}{-5}$$

$$\cancel{0/3}$$

$$\frac{3}{-5} = \frac{-3}{5} = -\frac{3}{5}$$

Final Answer Details

$$m = \frac{4}{2}$$

$$m = 2$$

$$m = \frac{2}{4}$$

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

$$m = \frac{0}{5}$$

$$m = 0$$

$$m = \frac{5}{0}$$

$$m = \text{undefined}$$

$$m = \frac{0}{0}$$

$$m = \frac{0}{0}$$

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