Get out your homework from last night and have it ready to check.
Grab a half sheet from the front table and Warm Up.

Classwork - Graphing Equations Using Tables

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}}$$

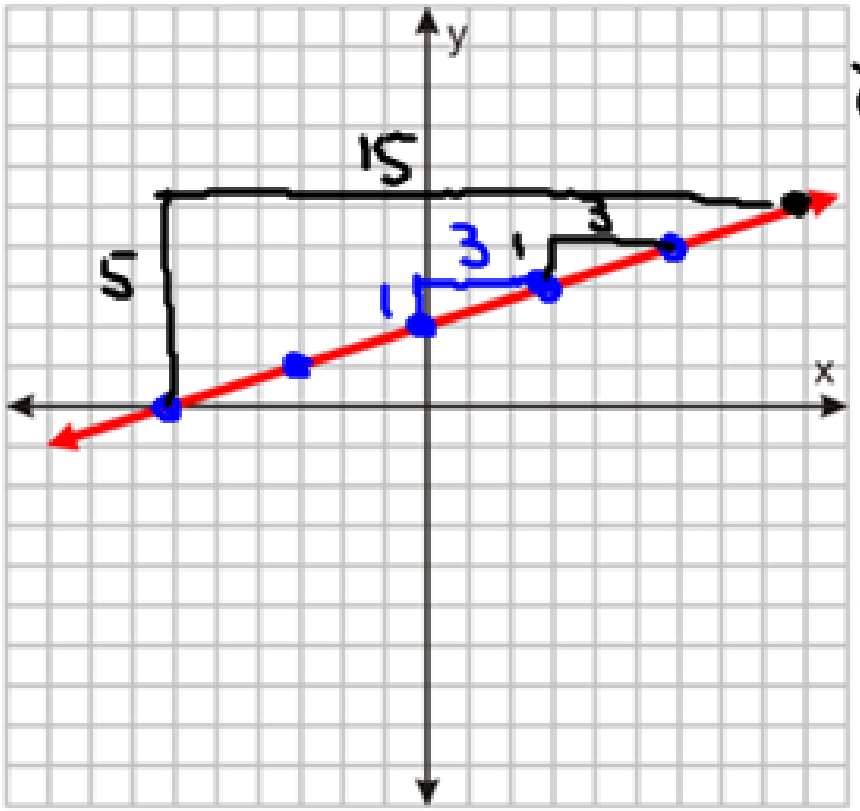
Find the slope of the line in each of the problems below.

A) A line that passes through the points (4,5) and (8, −1).

$$m = \frac{-1 - 5}{8 - 4} = \frac{-6}{4} = -\frac{3}{2}$$

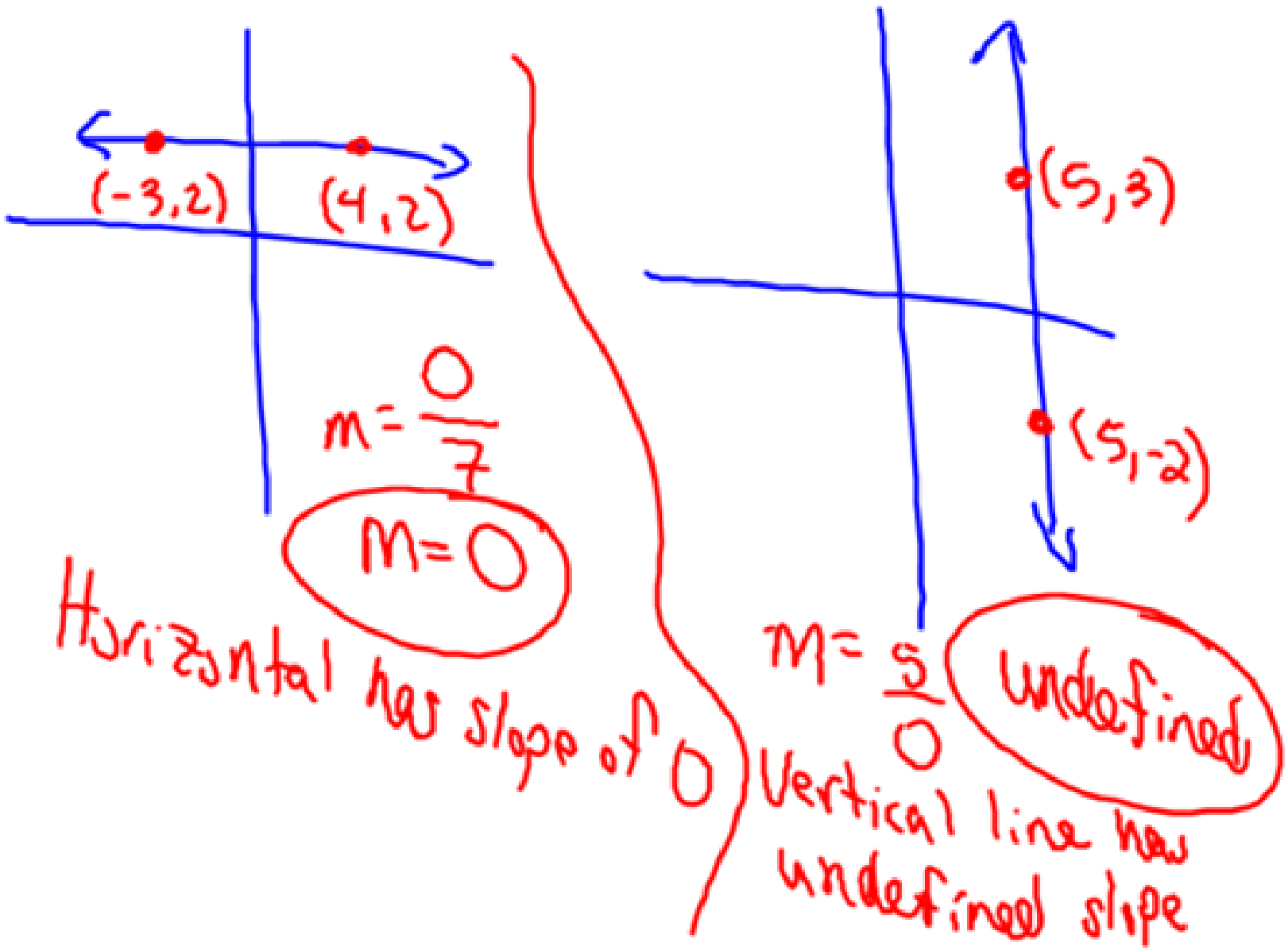
$m =$ $-\frac{3}{2}$

B) Find two points the line passes through and then find the slope of the line.



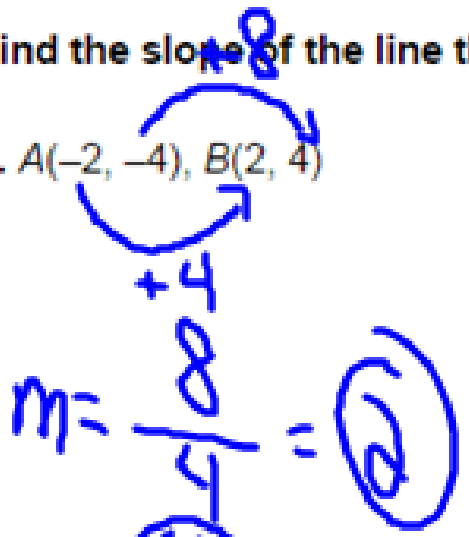
$$\frac{5-3}{5-1}$$

$m =$ $\frac{2}{4} = \frac{1}{2}$


(-3,2)
(4,2)
m = 0/7
m = 0
Horizontal has slope of 0
(5,3)
(5,-2)
m = 5/0
undefined
Vertical line has undefined slope

Find the slope of the line that passes through each pair of points.

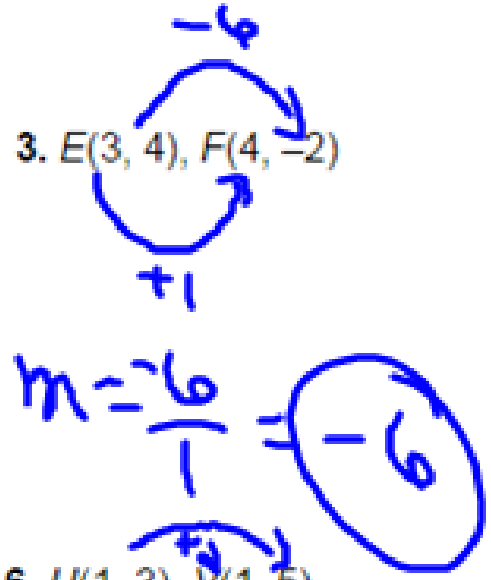
1. $A(-2, -4)$, $B(2, 4)$



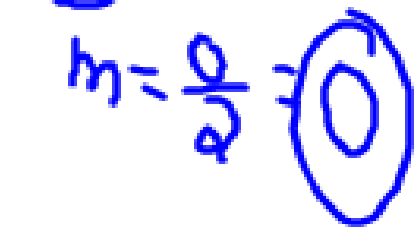
2. $C(0, 2)$, $D(-2, 0)$

$\frac{0-2}{-2-0} = \frac{-2}{-2} = 1$

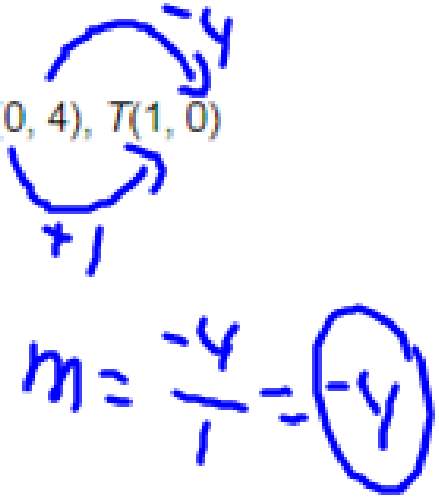
3. $E(3, 4)$, $F(4, -2)$



4. $Q(1, 0)$, $R(3, 0)$



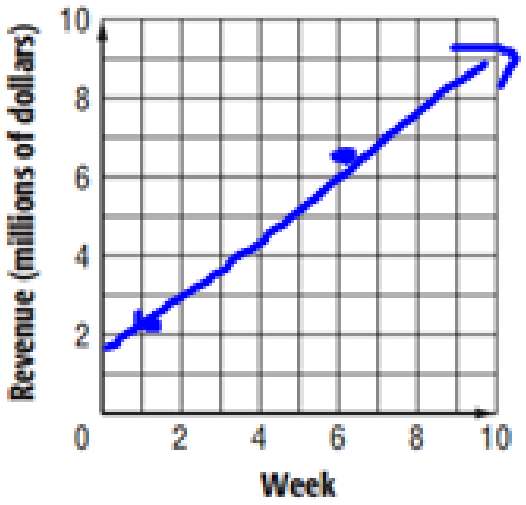
5. $S(0, 4)$, $T(1, 0)$



6. $U(1, 3)$, $V(1, 5)$

$m = \frac{2}{0}$ m = Undefined

7. By the end of its first week, a movie had grossed $2.3 million. By the end of its sixth week, it had grossed $6.8 million. Graph the data with the week on the horizontal axis and the revenue on the vertical axis, and draw a line through the points. Then find and interpret the slope of the line.



(weeks, $)

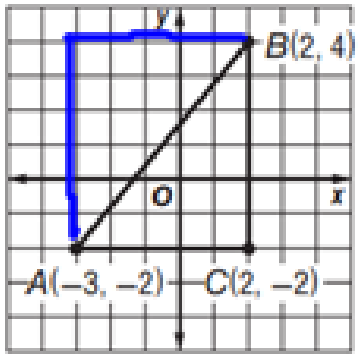
(1, 2.3)

(6, 6.8)

Slope (m) = 0.9

$\frac{6.8-2.3}{6-1} = \frac{4.5}{5} = \$0.9$ million/week

8. The figure below shows triangle ABC plotted on a coordinate plane. Use the triangle to answer the following problems. SHOW WORK



A) Find the slope of the line through points A and B.

$\frac{\text{rise}}{\text{run}} = \frac{6}{5}$

B) What is the slope of the line through points A and C?

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

C) What is the slope of the line through points B and C?

$m = \frac{6}{0} =$ undefined

A) $\frac{y_2 - y_1}{x_2 - x_1}$

$(-3, \overset{1}{-4})$ and $(6, \overset{2}{-8})$

$\frac{-8 - (-4)}{6 - (-3)} = \boxed{\frac{-4}{9}}$

B) (x, y)

$(-5, 7)$ and $(3, -3)$

$m = \frac{-3 - 7}{3 - (-5)} = \frac{-10}{8}$

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

Grab a Warm Up from the front table and start working.

Classwork - Using Tables to Graphing Linear Equations

Find the slope of line that passes through the following points.

1) $(-2,3)$ and $(7,-4)$

$m = \frac{-7}{9}$

$m = \frac{-4-3}{7-(-2)} = \frac{-7}{9}$

2) $(-4,5)$ and $(6,5)$

Horizontal Line

$m = \frac{5-5}{6-(-4)} = \frac{0}{10} = 0$

3) $(7,2)$ and $(7,-8)$

Vertical Line

$\frac{-8-2}{7-7} = \frac{-10}{0}$ = Undefined

4) $(-6,-5)$ and $(4,5)$

$m = \frac{5-(-5)}{4-(-6)} = \frac{10}{10} = 1$

5) Chelsea is saving her money to buy new furniture. After 2 weeks she has saved $201. After 5 weeks she has saved $322.50. Find the constant rate of change (slope) at which she is saving money. SHOW WORK

(weeks, $)

(2, 201) and (5, 322.50)

$$m = \frac{322.50 - 201}{5 - 2} = \frac{121.50}{3} = \frac{\$40.50}{1 \text{ week}}$$

Graphing Linear Equations Using Tables

For any given linear equation, there are an infinite number of solutions or points on that line. If you just find three or more of the solutions, then you can plot your three points and draw a line through. This will be the line that represents the equation.

For the following example, insert the values given for x into the equation. Then evaluate the equation to find the value of y.

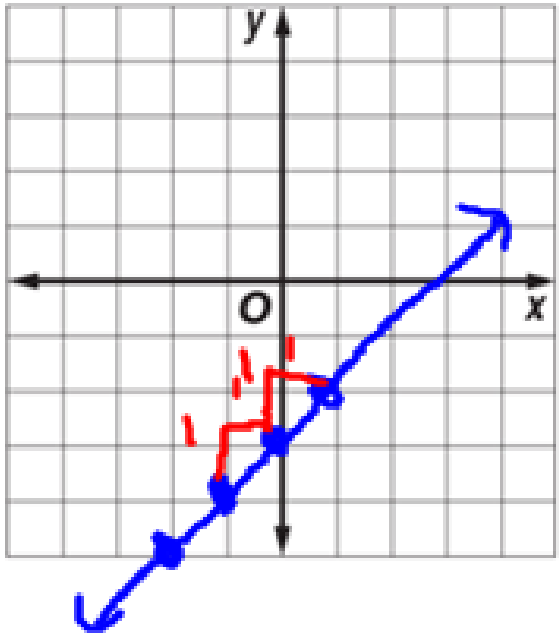
Example: $x - 3 = y$

x	$x - 3$	y	(x, y)
−2	−2 − 3	−5	(−2, −5)
−1	−1 − 3	−4	(−1, −4)
0	0 − 3	−3	(0, −3)
1	1 − 3	−2	(1, −2)

+1 +1 +1 +1 +1 +1

What is the slope of the equation? $\frac{1}{1} = 1$

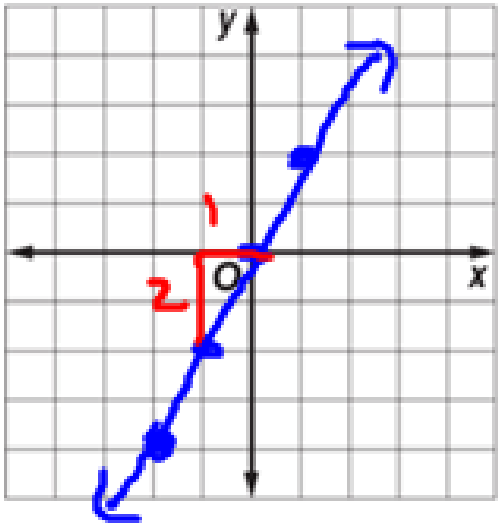
Plot the points (x, y) from the table on the graph.



Practice: Complete the following tables and then graph your points on the coordinate plane to draw a line that represents the equation. Then, write the slope of the line to the right of the graph.

1) $2x = y$

x	$2x$	y	(x, y)
−2	2(−2)	−4	(−2, −4)
−1	2(−1)	−2	(−1, −2)
0	2(0)	0	(0, 0)
1	2(1)	2	(1, 2)

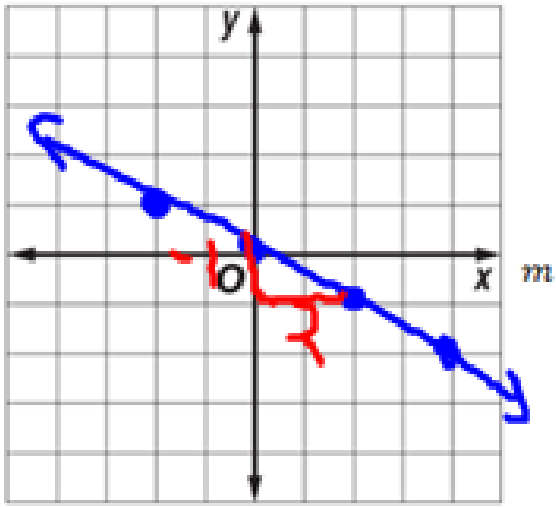


Slope

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

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

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

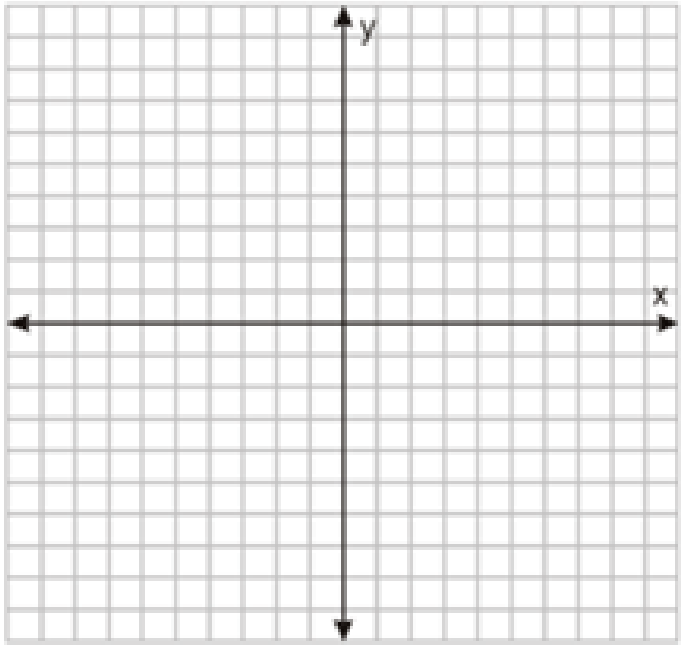


Slope

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

3) $y = -3x + 7$

x	$-3x + 7$	y	(x, y)
−1			
0			
1			
3			

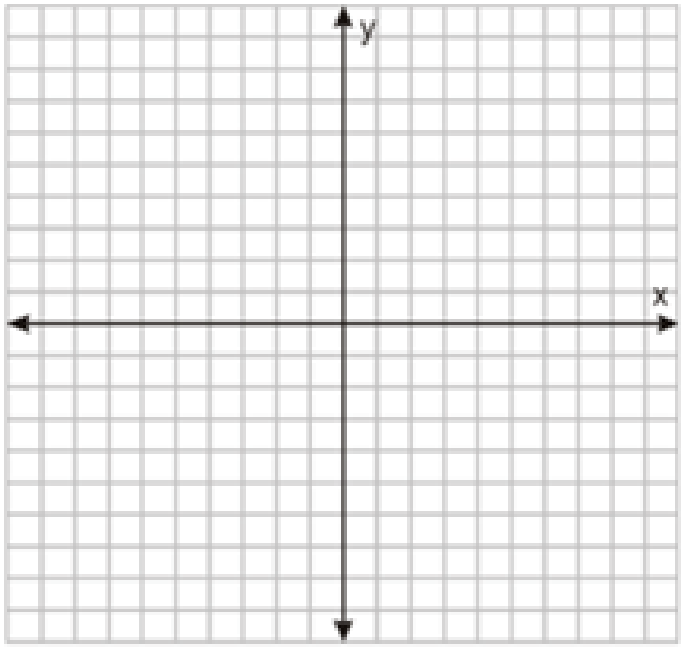


Slope

$m =$ _____

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

x	y



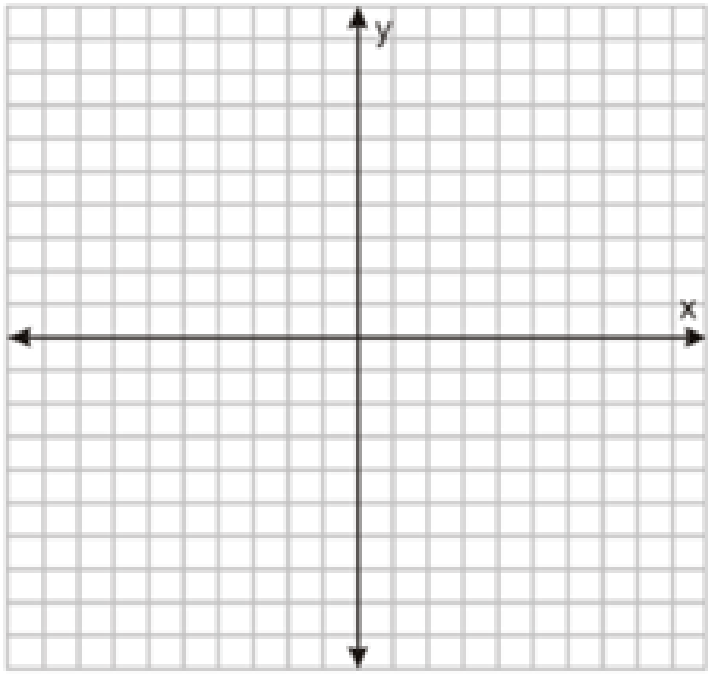
Slope

$m =$ _____

Make your own table and find at least three points to graph a line that represents the following equations. Find the slope of each equation.

5) $4x = y$ $m =$ _____

x	y
0	0
1	4
2	8



6) $y = -x + 5$ $m =$ _____