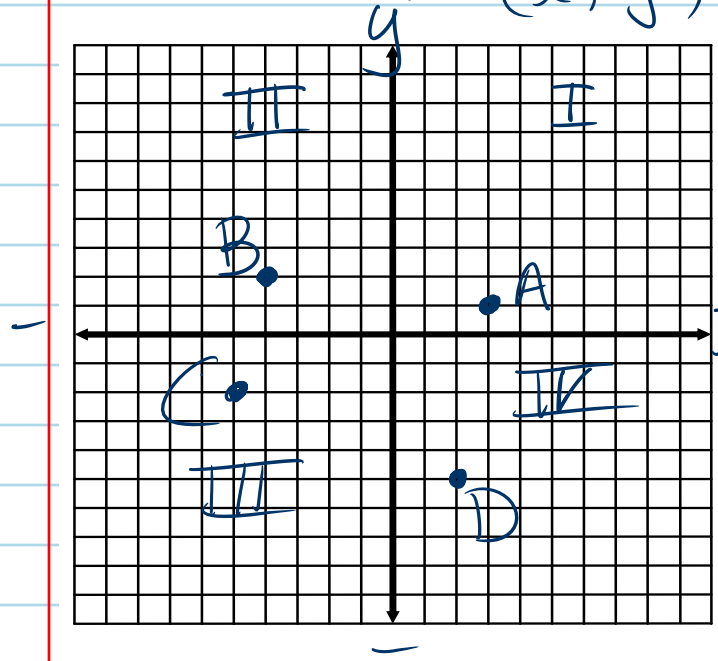
June.13th, 2016

Unit 7 Day 1
7-1 Points, Slope, + Length

Ordered Pair: A unique location on the coordinate plane specified by a pair of #s (x, y) x = horizontal, y = vertical



I: $x>0, y>0$ A(3,1)

II: $x<0, y>0$ B(-1,2)

III: $x<0, y<0$ C(-5,-2)

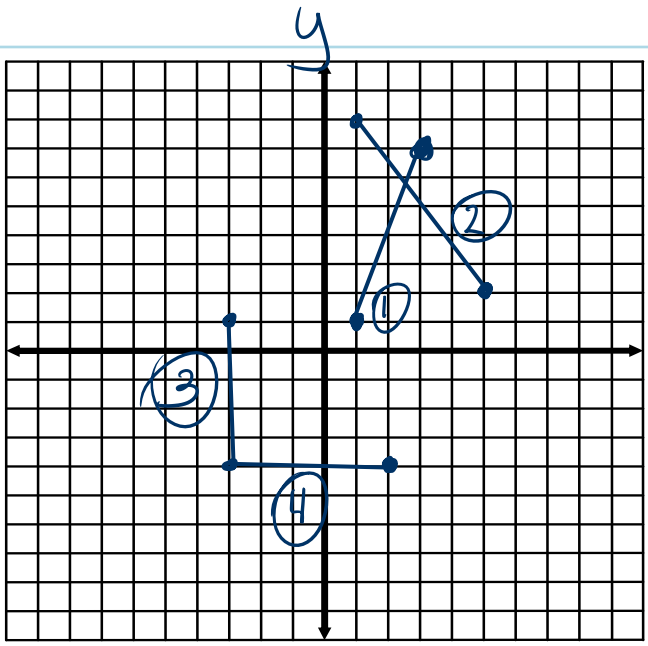
IV: $x>0, y<0$ D(2,-5)

Slope

$$\text{slope} = m = \frac{\text{rise}}{\text{run}} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{\Delta y}{\Delta x}$$

(Δy: change in y)

	Segment	Slope
1)	(3,7) (1,1)	$m = \frac{\Delta y}{\Delta x} = \frac{1-7}{1-3}$ $\frac{y_2-y_1}{x_2-x_1}$ $\frac{-6}{-2} = 3$
2)	(5,2) (1,8)	$m = \frac{8-2}{1-5} = \frac{6}{-4} = -\frac{3}{2}$
3)	(-3,1) (-3,-5)	$\frac{-5-1}{-3--3} = \frac{-6}{0}$ undefined
4)	(2,-5) (-3,-5)	$\frac{-5--5}{-3-2} = \frac{0}{-5} = 0$



1) Positive slopes go UP from left to right

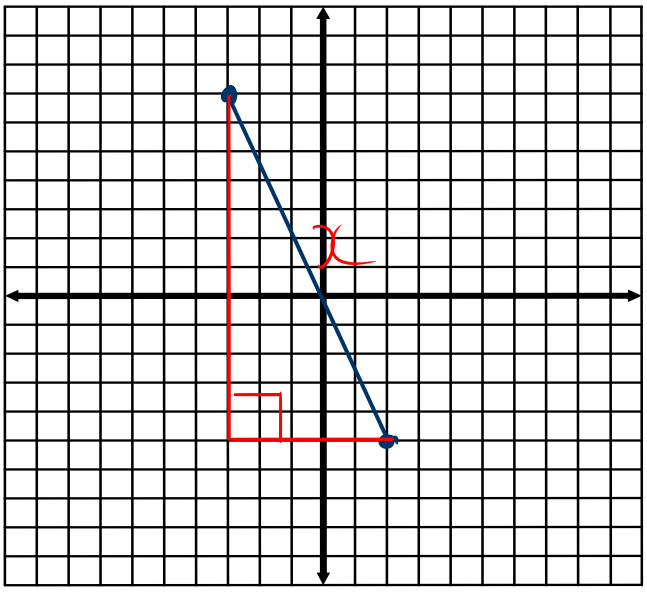
2) Negative slope go DOWN from left to right

3) Vertical lines have UNDEFINED slopes.

4) Horizontal lines have slope of 0. (zero)

Length of Line Segments

Find the slope + length of the line segment (2, −5) to (−3, 7).



$$m = \frac{\Delta y}{\Delta x} = \frac{7 - -5}{-3 - 2}$$

$$m = -\frac{12}{5}$$

$$x^2 = 5^2 + 12^2$$
$$x^2 = 25 + 144$$
$$x^2 = 169$$
$$x = \sqrt{169}$$
$$x = 13$$

Practice 7-1