

# Day 6: Cartesian Plane

Friday, September 20, 2013 9:34 AM

**AW Math 11** Name: \_\_\_\_\_

## DAY 6 Cartesian Plane class notes

(x) (y)

Cartesian Plane • GRID WITH HORIZONTAL + VERTICAL

- POINTS PLACED ON GRID (x, y)
- 4 QUADRANTS

### Coordinate Points

$$A = (-6, 1)$$

$$B = (-2, -2)$$

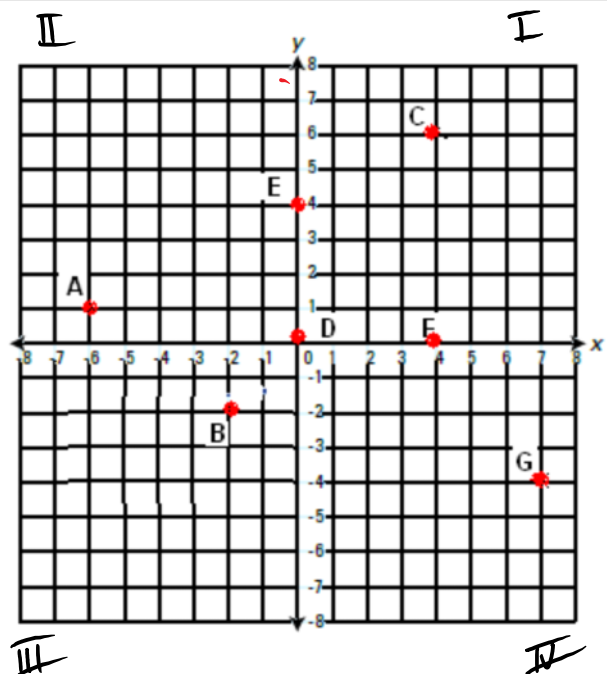
$$C = (4, 6)$$

$$D = (0, 0) \text{ "origin"}$$

$$E = (0, 4)$$

$$F = (4, 0)$$

$$G = (7, -4)$$



### HOW TO Calculate Slope on a Cartesian Plane

1. Find two points with exact coordinates
2. Use the slope formula

$$\text{SLOPE FORMULA: } m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{\text{RISE}}{\text{RUN}} \quad \left( \underline{x_1}, \underline{y_1} \right) \quad \left( \underline{x_2}, \underline{y_2} \right)$$

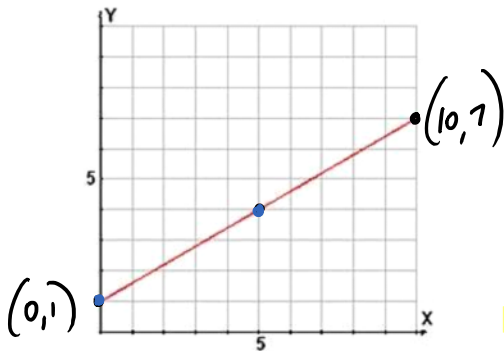
POINT #1      POINT #2

\* ORDER DOESN'T MATTER!

**25**

**EXAMPLE 1**

Find the slope of the line below



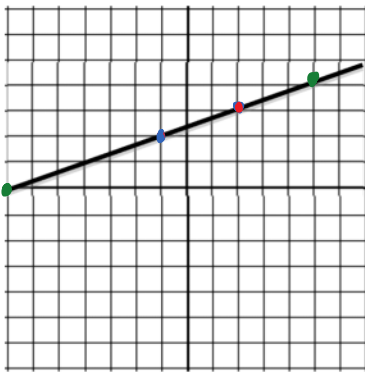
$$\begin{matrix} (0, 1) & (10, 7) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 1}{10 - 0} = \frac{6}{10} = \frac{3}{5}$$

The slope of a line can be...

a.

b.



$$\begin{matrix} (-1, 2) & (2, 3) \\ x_1, y_1 & x_2, y_2 \end{matrix}$$

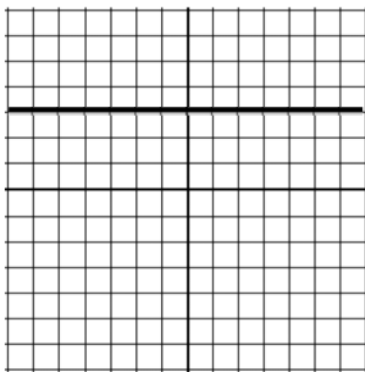
$$\frac{3 - 2}{2 - (-1)} = \frac{1}{3}$$

c.

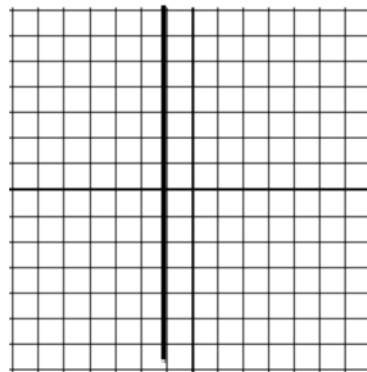


"Downhill"  
NEGATIVE

d. ~~\*\*\*~~



"ZERO"

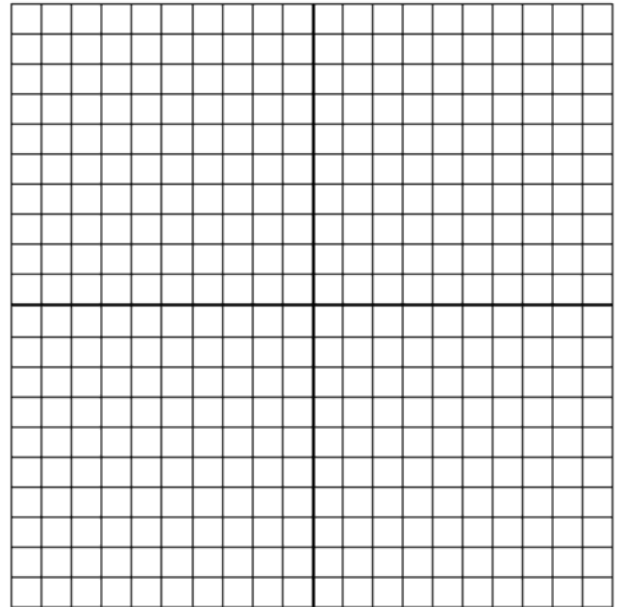


∅  
"UNDEFINED"

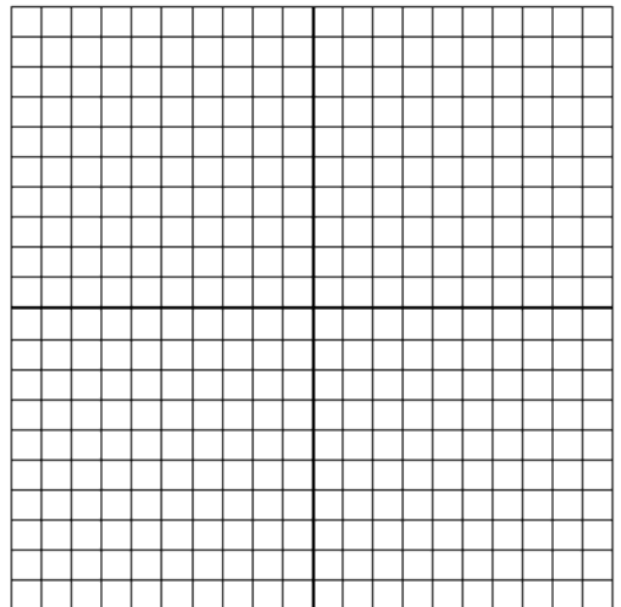
**DAY 6** Cartesian Plane assignment continued

1. Plot the pairs of coordinate points below and then find the slope of the line between them.

Points	Slope
	$m = \frac{y_2 - y_1}{x_2 - x_1}$
$x_1 \ y_1$ (-5, 4) (4, -3) $x_2 \ y_2$	$m = \frac{-3 - 4}{4 - (-5)} = \frac{-7}{9}$
(-2, -1) (3, -5)	

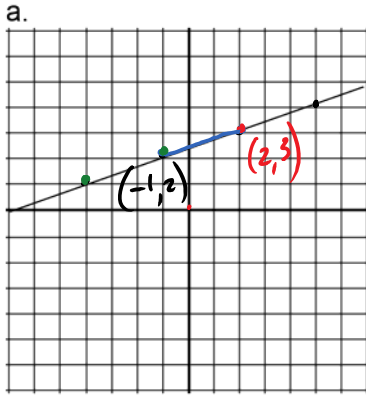


(-3, -4) (2, -2)	
(2, 5) (3, 0)	



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

2. Find the slope of the lines.



$$\begin{matrix} x_1, y_1 \\ (-1, 2) \\ x_2, y_2 \\ (2, 3) \end{matrix}$$

$$\frac{3 - 2}{2 - (-1)}$$

$$= \frac{1}{3}$$

