#### Warm Up

2/14/19

Find the average rate of change for the interval  $2 \le x \le 4$ 

1. 
$$f(x) = 3x - 6$$
  
 $f(x) = 3(x) - 6 = 0$ 

$$(2,0)$$
 m=  $\frac{y_2-y_1}{}$ 

2. 
$$f(x) = x^2 - 2x + 5$$

$$f(4) = (4)^{2} - 2(4) + 5$$

$$16 - 8 + 5 = 13 (4.13)$$

3. Find the average rate of change in the table on the interval of  $-9 \le x \le 3$ 

$$m = \frac{10+6}{-9-3} = \frac{16}{-12}$$

X	У
3	-6
0	-2
-3	2
-6	6
-9	10
-12	14

$$m = \frac{15-5}{4-2} = \frac{8}{2}$$

# Point - Slope Formula

## $y-\underline{y_1}=\underline{m}(x-\underline{x_1})$

What does it stand for?

(-2,4)

y:

y<sub>1</sub>:y-value from ordered pair

m: slope

 $X_1$ : x-value from your ordered pair

X:

1. Plug in the ordered pair for  $X_1$  and  $Y_1$  and the slope in for m

2. Solve the equation for Y

$$(-4, 6)$$
 and  $m = -3$ 

$$y - y_1 = m(x - x_1)$$

$$y - (y = -3(x + 4))$$

$$y - (y = -3x - 12)$$

$$y = -3x - (6)$$

$$(12, -5)$$
 and  $m = 1/2$ 

$$y - y_{1} = m(x - x_{1})$$

$$y + 5 = \frac{1}{2}(x - 12)$$

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$$y + 5 = \frac{1}{2}(x - 12)$$

$$y + 5 = \frac{1}{2}(x - 11)$$

$$(-3, -7)$$
 and  $m = 0$ 

#### (-2, 9) and m is undefined.

$$(3,2) m=15$$

$$y-y_1=m(x-x_1)$$

$$y-2=15(x-3)$$

$$y-2=15x-45$$

$$+2$$

$$(-10_{1}-20) \quad m=-5$$

$$y-y_{1}=m(x-x_{1})$$

$$y+20=-5(x+10)$$

$$y+20=-5x-50$$

$$-20$$

$$y=-5x-70$$

$$(-12,5)$$
  $m=7$   
 $y-5=7(X+12)$   
 $y+5=7X+84$   
 $+5$   
 $y=7X+89$ 

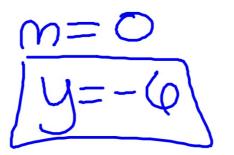
- 1. Find the slope from the 2 points
- 2. Use the point-slope formula to plug in the  $X_1$  and  $Y_1$  from 1 point and the slope

$$10m = \frac{-3-4}{12+7} = \frac{-7}{19}$$

(-2, 6), and (-2, 9)

$$m = \emptyset$$

(15, -6), and (7, -6)



**Exit Ticket** 

2/14/19

Write the equation of the line that passes through (-3,7) and (5,19)