Your Name
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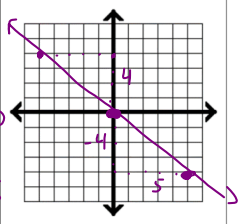
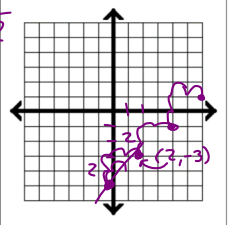
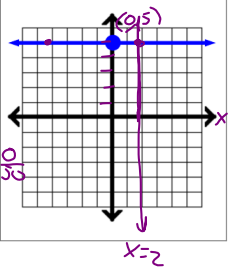
Writing Linear Functions Notes

Given a Table or Graph

Problem #	Table of values (x,y)	Equation (y = mx + b form)	Graph
1.)	x: -2, -1, 0, 1, 2 / y: -3, -1, 1, 3, 5	$y = 2x + 1$; $m = \frac{2}{1}$; $b = 1$	
2.)	x: -3, -3, 0, 3, 6 / y: -6, -4, -2, 0	$y = 2/3x - 4$; $m = \frac{2}{3} = \frac{-2}{-3}$; $b = -4$	
3.)	x: -4, 0, 4 / y: 4, 3, 2	$y = mx + b$; $y = -\frac{1}{4}x + 3$; $m = \frac{1}{-4} = \frac{-1}{4}$	

Problem #	Table of values (x,y)	Equation (y = mx + b form)	Graph
4.)	x: -5, 0, 5 / y: 4, 0, -4	y = -4/5x + 0 $m = \frac{-4}{5} = \frac{4}{-5}$	
5.)	x: 6, 4, 0, 1, (2) / y: 1, -1, -5, -4, (-3)	f(x) = 1x + -5 b = -5 $m = \frac{2}{2} = 1$	
6.)	x: -10, -4, 0, 2, 7 / y: 5, 5, 5, 5, 5	y = 5 y = 0x + 5 $m = 0 = \frac{0}{1}$	

Given two Points

Slope Formula

1.) Find the equation of the line that passes through the two points ***A*(-3,1)** and ***B*(3,-5)**. Write you answer in slope-intercept form $y = mx + b$.

2nd 1st

Goal: $y = -1x + -2$

1st Find slope **m=?**

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

2nd Find y-intercept **b=?**

plug in one of the given Points and solve for b

A (-3, 1) → x, y

$y = -1x + b$

$(1) = -1(-3) + b$

$1 = 3 + b$

$-3 \quad -3$

$-2 = b$

$(0, -2)$

$y = -1x - 2$

2.) Find the equation of the line that passes through the two points ***F*(8,-2)** and **G(-6,4)**. Write you answer in slope-intercept form ***y* = *mx* +*b***.