Exploring Linear Equations Name_____

$y = Mx + B$

Part I: Graph each equation and fill out the table below:

$y = Mx + B$	What is M?	What is B?	Sketch the graph	Where does the graph intersect the y-axis?
$y_1 = 15x + 2$				
$y_2 = 2x - 3$				
$y_3 = \frac{3}{4}x - 2$				
$y_4 = \frac{1}{4}x - 3$				

Use the graphs above (and look at the graphs on your computer) to answer the following questions:

1) What happens to the graph as *M* gets larger?

2) What happens to the graph as *M* gets smaller?

3) What do you think *M* tells you about the graph? Can you make up a rule (or draw an example) for what M does to a graph?

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Part II: ***Delete the previous graphs and put these four graphs in y_1 through y_4***

$y = Mx + B$	What is M?	What is B?	Sketch the graph	Where does the graph intersect the y-axis?
$y_1 = 4x - 3$				
$y_2 = -4x - 3$				
$y_3 = 2x + 1$				
$y_4 = -2x + 1$				

Use the graphs above (and look at the graphs on your computer) to answer the following questions:

1) What happens to the graph when *M* is negative? Describe and draw an example.

2) What happens to the graph when *M* is positive? Describe and draw an example.

3) What do you think *b* tells you about the graph?