INVESTIGATING EQUATIONS AND GRAPHS

Investigate the following equations, using your graphing calculator and your notes. Be sure to make notes regarding your discoveries as your progress through the different equations. Any graph or table that you create using the calculator, be sure to sketch and record in your notes as a helpful reminder.

I. In your own words, describe the difference between these sets of equations. Then, create a graph for each equation. What do you notice are the differences in their graphs? What part of the equation is responsible for making that change?
COMPARE: y = 6x and y = -6x
COMPARE: y = -3x + 1 and y = 3x + 1
COMPARE: y = x and y = -x

II. In your own words, describe the difference between these sets of equations. Then, create a graph for each equation. What do you notice are the differences in their graphs? What part of the equation is responsible for making that change?
COMPARE: y = 5x and y = (1/5)x
COMPARE: y = -3x and y = (-1/3)x
COMPARE: y = 2x and y = 0.2x

III. Based upon the information you have learned from above, what qualities would the graphs from the following equations have?
a. y = -9x
b. y = (1/10)x
c. y = -45x

IV . In your own words, describe the difference between these sets of equations. Then, create a graph for each equation. What do you notice are the differences in their graphs? What part of the equation is responsible for making that change?
COMPARE: y = 2x + 1 and y = 2x + (-1)
COMPARE: y = x+ 5 and y = x+(-5)
COMPARE: y = x -3 and y = x+ 3

Summary: Upon completion of this activity, you should be able to do the following:

Given the equation: y = mx + b, what does the "m " indicate about the graph and what does the " b " indicate about the graph? Be specific. Illustrate some examples.