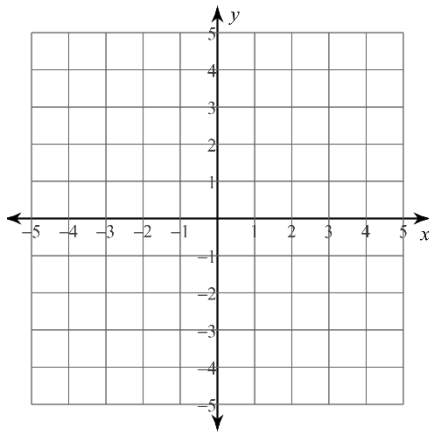


EXPLORING GRAPHS

Use your graphing calculator to complete the following tasks:

Part I

Graph $y = |x|$ on your calculator and sketch it here:



Now, consider the following equations:

$$y = |x|$$

$$y = |x - 1|$$

$$y = |x + 3|$$

$$y = |x| - 2$$

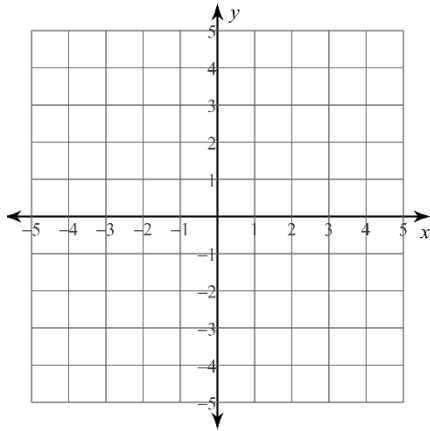
First, predict how the changes to the equation $y = |x|$ will change the graph:

Second, graph the equations and explain the changes in each graph compared to the parent graph.

Third, explain how the graph of $y = |x - 2| + 3$ would compare to the parent graph.

Part II

Graph $y = x^2$ on your calculator and sketch it here:



Now, consider the following equations:

$$y = x^2$$

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

$$y = (x + 1)^2$$

$$y = x^2 + 4$$

First, predict how the changes to the equation $y = x^2$ will change the graph:

Second, graph the equations and explain the changes in each graph compared to the parent graph.

Third, explain how the graph of $y = (x - 2)^2 + 3$ would compare to the parent graph.

Part III

Were there any similarities in transformations? Look back at your answers for Parts I and II and see if you can find any patterns. List any observations you make here:

Part IV

Get with another group and compare your answers for Part III. Do you all agree about the pattern for transformations? Be prepared to participate in a class discussion about these transformations.