

ABSOLUTE VALUE GRAPHS

Using the graphing calculator, determine the role of each of the variables a, b, & c in the absolute value equation.

$$y = a|x + b| + c$$

****To get Absolute Value on the TI-84, go to MATH → NUM → abs(

Compare the graphs of:

- $y = |x + 2| + 1$ and $y = |x + 2| + (-1)$ to determine the role of the “c” variable
- predict what $y = |x + 2| + 5$ would look like
- predict what $y = |x + 2| - 4$ would look like

- $y = |x + 4| + 1$ and $y = |x + (-4)| + 1$ to determine the role of the “b” variable
- predict what $y = |x + 1| + 1$ would look like
- predict what $y = |x - 2| + 1$ would look like

Sketch the graph of $y = |x - 3| + 3$; check with the calculator. How close were you?

Write rules for the absolute value equation: $y = |x + b| + c$

Compare the graphs of:

- $y = 3|x + 2| + 1$ and $y = -3|x + 2| + 1$ to determine the role of the “a” variable
- predict what $y = -6|x + 2| + 1$ would look like
- predict what $y = 4|x + 2| + 1$ would look like

- $y = -\frac{1}{2}|x + 2| + 1$ and $y = -2|x + 2| + 1$ to determine the role of the “a” variable

- predict what $y = (1/10)|x + 2| + 1$ would look like

- predict what $y = (20)|x + 2| + 1$ would look like

Final Test:

Sketch the graph of $y = -2|x - 1| + 4$; check with the calculator. How close were you?

Write the rules/guidelines for any absolute value equation: $y = a|x + b| + c$