**5.8 Graphing Absolute Value Functions**

**Objective 1:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* An **absolute value function** has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ graph.
* The parent function for the family of absolute value functions is $y= \left|x\right|$
* Use a table to values to graph $y= \left|x\right|$. Make sure to include enough points to obtain the correct shape.

**Objective 2:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* A **translation** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a graph horizontally, vertically, or both. The result is a graph of the same size and shape, but in a different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* You can quickly graph absolute value equations by shifting the graph of $y= \left|x\right|$.
* The graph of $y= \left|x\right|+k$ is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ shift of $y= \left|x\right|$ $k$ units up or down.
* The graph of $y= \left|x-h\right|$ is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shift of $y= \left|x\right|$ $ h$ units right or left.

Example: Graph the absolute value function $y= \left|x\right|+2$



Example: Graph the absolute value function $y= \left|x+5\right|.$

Example: Graph the absolute value function $y= \left|x-5\right|$



Example: Graph the absolute value function $y= \left|x+2\right|-1$. Describe the translation of the parent function.