Common Core Math 3 Name Date

Absolute Value Function

**The parent Absolute Value function is:**

$$y=\left|x\right|$$

As with all other functions we have learned, Absolute value functions can be transformed.

**Key Features of Absolute Value Functions**

Characteristic Points for $y=\left|x\right|$

Domain:

Range:

Intercept:

**Fill in the table below with a description of what happens to the parent function when the following transformations are performed.**

|  |  |
| --- | --- |
| **Parent Function** | $$y=\left|x\right|$$ |

|  |  |
| --- | --- |
| **Description** | **Transformation** |
|  | $$y=\left|x+h\right|$$ |
|  | $$y=\left|x-h\right|$$ |
|  | $$y=\left|x\right|+k$$ |
|  | $$y=\left|x\right|-k$$ |
|  | $$y=-\left|x\right|$$ |
|  | $$y=a\left|x\right|$$ |

**Let’s look at the following example.**

The graph on the right represents a transformation of the graph of
 $y=\left|x-3\right|+3$

The description is as follows:

*
*
*
*

Domain:

Range:

**TRY NOW**

Graph the following function on the graph at right. Describe each transformation, give the domain and range, and identify any asymptotes.

 $y=2\left|x+2\right|-5$

Description:

Domain:

Range: