Math 3 **1.2 Parent Functions and Transformations** Unit 1 Day 2

**Parent Functions:**

**Tape Parent Function Foldable Here!**

**Transformations:**

|  |
| --- |
| **y = af(x-h)+k** |

* “a” value determines whether the graph has vertically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* “h” value determines whether the graph has shifted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* “k” value determines whether the graph has shifted \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* –f(x) demonstrates a reflection across the \_\_\_\_\_\_\_\_\_ axis.
* f(–x) demonstrates a reflection across the \_\_\_\_\_\_\_\_\_ axis.

***Directions:*** State the parent function and the types of transformations. Then, graph the parent function and the transformed function on the graph below.

**Example 1:** y = (x – 3)2 + 2

**Example 2:** y = –|x – 3|

**Example 3:** y = 3x + 1



***Directions:*** Write the equation of the function with the given transformations.

**Example 4:** reflection across the x-axis, left 3, down 2; quadratic function

**Example 5:** reflection across the y-axis, vertical stretch by 8; absolute value function

**Example 6:** right 7, up 9, vertical compression of ½; square root function