**GRAPHING ACTIVITY NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**FUNCTIONS SHAPE AND SYMMETRY**

Fill in the tables to graph each function. You will notice a pattern. Some types of functions have reflexive symmetry (they can be folded in half, and both sides match), some functions have rotational symmetry (they can be turned around the origin and will match with the original) and some functions have no symmetry. After you have all the functions graphed, label each one with its type of symmetry.

#1 y = x2 #2 y = x3

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

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Symmetry: Symmetry:

#3 y = x4 #4 y = x5

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

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Symmetry: Symmetry:

#5 y = x6 #6 y = x7

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

|  |  |
| --- | --- |
| x | y |
| -3  -2  -1  0  1  2  3 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Symmetry: Symmetry:

What patterns do you notice about the type of equation and the shape/symmetry of the graph?

#7 y = #8 y =

|  |  |
| --- | --- |
| x | y |
| 0  1  4  9 |  |

|  |  |
| --- | --- |
| x | y |
| -27  -8  -1  0  1  8  27 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Symmetry: Symmetry:

What patterns do you notice about the type of equation and the shape/symmetry of the graph?

Which families will have reflexive symmetry?

Which families will have rotational symmetry?

Which families will have no symmetry?