**Guided Notes: Quadratic Functions**

**NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Main Idea** | **Notes** |
| **Quadratic Function** | **Standard Form:**  $y=ax^{2}+bx+c$**Vertex Form:** $f\left(x\right)=a(x-h)^{2}+k$ |

| x | -2 | -1 | 0 | 1 | 2 |
| --- | --- | --- | --- | --- | --- |
| **y** |  |  |  |  |  |

**Parent Quadratic Function**

y=x2

**Label the following parts on the graph:**

**A)** Vertex **( , )**

**B)** Axis of Symmetry: **x=\_\_\_\_\_\_**

To find from the equation, use x= ****

**C)** Maximum/Minimum Value

**D)** Solution(s) of the function**=\_\_\_\_\_\_\_\_\_\_\_**



**Converting from Vertex to Standard:** $f\left(x\right)=2(x-3)^{2}+2$

**Multiply out the Parentheses:**

**Distribute:**

**Combine Like Terms:**

**Standard Form:**

**Vertex Form:** $f\left(x\right)=a(x-h)^{2}+k$

a 🡪 Changes here stretch or compress the graph. A negative flips it over.

h 🡪 Tells you the x-value of the vertex.

k 🡪 Tells you the y-value of the vertex.