**The Equation of a Quadratic Function**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The standard form of a quadratic function is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If the value of “a” is positive the quadratic function will have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point. The dependent variable will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate reach the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate.

If the value of “a” is negative then the quadratic function will have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point. The dependent variable will \_\_\_\_\_\_\_\_\_\_\_\_­­­­\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate reach the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point and then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate.

As the absolute value of “a” increases the graph of the function becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. As the absolute value of “a” decreases the graph of the function becomes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The value of “c” in the equation of a quadratic function represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. As the value of “c” increases the graph of the function is translated \_\_\_\_\_\_\_\_\_\_\_, and as the value of “c” decreases, the graph of the function is translated \_\_\_\_\_\_\_\_\_\_\_\_\_.

Quadratic equations that are written as the product of two linear expressions are written in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form. This form helps identify the x-intercepts of the function.

Examples:

* Identify the x-intercepts of the following quadratic equations that are written in factored form.
* Write each quadratic equation in standard form.
* Determine whether or not they will have a maximum or minimum point.
* Identify the y-intercept
1. y = (x-2)(x+3)
2. y = (x-1)(x-4)
3. y = (x+7)(x+5)
4. y = (2x+6)(3x-9)

Independent Practice

* Identify the x-intercepts of the following quadratic equations that are written in factored form.
* Write each quadratic equation in standard form.
* Determine whether or not they will have a maximum or minimum point.
* Identify the y-intercept
1. y = (x-1)(x+8)
2. y = (x-4)(x-9)
3. y = (x+2)(x+7)
4. y = (3x+12)(2x-8)