**Vocabulary for the Chapters on Quadratic Functions and Equations**

**How does it all relate to one another?**

|  |  |
| --- | --- |
| **Quadratic Function** | **Quadratic Equation** |
| f(x) = ax2 + bx + c y = ax2 + bx + cy = a(x-p)2 + q  | ax2 + bx + c = 0 |
| f(x) = 2x2 + 3x + 5  y = 2x2 + 3x + 5y = 2(x-1)2 -4* Characteristics include vertex, axis of symmetry, zeros, maximum or minimum, domain and range.
* (x, y) represent points on the graph of the function.
* (p, q) represents the vertex
* The graph is in the shape of a parabola
* The zeros of the function are where the height of the graph is 0 or where the y coordinate of an ordered pair on the graph is zero (x, 0)
* The zeros are related to the x-intercepts of the graph (x, 0)
 | 2x2 + 3x + 5 = 0(x+2)(x-3) = 0This is an equation.The roots are considered the solutions to the equation.Roots can be calculated by:* determining the x-intercepts of the graph of the corresponding function
* determining the zeros of the related function
* factoring the quadratic equation and applying the zero property
* completing the square to factor the equation then solve for the variable
* using the quadratic formula
 |

**The Graph of a Quadratic Function**

x-intercept of the graph of the function(x, 0)

The zero of the function.

x-intercept of the graph of the function (x, 0)

The zero of the function.

y-intercept of the graph

(0, y)

Vertex of the graph of the gunction