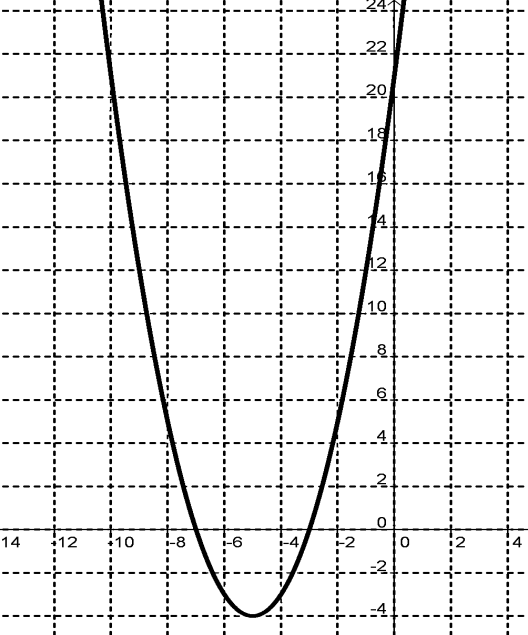
**Vocabulary for the Chapters on Quadratic Functions and Equations**

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

|  |  |
| --- | --- |
| **Quadratic Function** | **Quadratic Equation** |
| f(x) = ax2 + bx + c  y = ax2 + bx + c  y = a(x-p)2 + q | ax2 + bx + c = 0 |
| f(x) = 2x2 + 3x + 5  y = 2x2 + 3x + 5  y = 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) = 0  This 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