ALGEBRA II JOURNAL
Quadratic Functions

1. (a) An equation is a quadratic equation if _____ .

   (b) Standard form of a quadratic equation is _____ .

   (c) The shape of the graph of any quadratic equation is a(n) _____ .

2. (a) The equation of the line of symmetry is always written as _____ .

   (b) A parabola will have: (i) a normal width if _____ .

                   (ii) a narrow width (vertical shrink) if _____ .

                   (iii) a wide width (vertical stretch) if _____ .

3. Describe all the changes that occur in the graph of $y = x^2$ if it is changed to:

4. $y = 7(x + 4)^2 + 2$ _____

   _____

5. $y = -\frac{4}{9}(x - 11)^2 - 3.$ _____

   _____

6. Write **an example** of how to make all of the following occur using the function $f(x) = x^2$:

   (a) Reflect across the *x*-axis _____   (c) Narrow _____

   (b) Wide _____   (d) Reflect across the *y*-axis _____

7. (a) Four methods for **_solving_** a quadratic equation are _____

   _____ .

   (b) Before solving a quadratic equation by any of the above methods you must first change the

       equation to be _____ .

8. (a) On a graph, the real zeros (solutions) of an equation are located _____ .

   (b) To find these with a graphing calculator, you must select Menu—_____—

   _____ and then _____ .

9. Given the roots of a quadratic equation, the original equation can be found by _____

   _____ .

10. The portion of the quadratic formula inside the radical is called _____ .

11. (a) If a real world application of quadratic equations asks for a maximum or minimum value, you

       should find _____ .

   (b) Two examples of real world applications of quadratic functions are _____

   _____

12. Important Rules, Formulas, Etc.

    a) Vertex form of a quadratic function and d) method for finding the vertex

    b) Standard form of a quadratic function & b) method for finding the vertex

    c) Intercept Form of a quadratic function & f) method for find the vertex.

    d) Quadratic formula—Show the original equation & then the formula.

    e) Formula for projectile motion—***Label each variable in the formula with what it represents.***

    f) Two constants for the acceleration of gravity