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## ALGEBRA II JOURNAL <br> Quadratic Functions

1. (a) An equation is a quadratic equation if $\qquad$ .
(b) Standard form of a quadratic equation is $\qquad$ .
(c) The shape of the graph of any quadratic equation is a(n) $\qquad$ .
2. (a) The equation of the line of symmetry is always written as $\qquad$ .
(b) A parabola will have: (i) a normal width if $\qquad$ .
(ii) a narrow width (vertical stretch) if $\qquad$ .
(iii) a wide width (vertical shrink) if $\qquad$ .
3. Describe all the changes that occur in the graph of $y=x^{2}$ if it is changed to:
$y=7(x+4)^{2}+2$ $\qquad$
$y=-\frac{4}{9}(x-11)^{2}-3$.
4. 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 $\qquad$
(b) Wide $\qquad$ (d) Reflect across the $y$-axis
5. (a) Four methods for solving a quadratic equation are $\qquad$
(b) Before solving a quadratic equation by any of the above methods you must first change the equation to be $\qquad$ .
6. (a) On a graph, the real zeros (solutions) of an equation are located $\qquad$ .
(b) To find these with a graphing calculator, you must select Menu- $\qquad$ -
$\qquad$ and then $\qquad$ .
7. Given the roots of a quadratic equation, the original equation can be found by $\qquad$ .
8. The portion of the quadratic formula inside the radical is called $\qquad$ .
9. (a) If a real world application of quadratic equations asks for a maximum or minimum value, you should find $\qquad$ .
(b) If a projectile motion problem asks how long an object is in the air before it hits the ground, you should $\qquad$ and solve by using
$\qquad$ .
(c) If a projectile motion problem asks for the maximum height of the object, you should $\qquad$
10. 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
