

Algebra 1
Unit 8 – Project
Solving Quadratic Functions

Instructions: Answer **ALL** questions. You **MUST** attach all graph/sketches and show all calculations and/or explanations to justify your answers. If you are asked to provide a graph, you **MUST** use graph paper or a graphing utility/software. Upload the completed project as a Word or PDF file.

1. Find the solution to each quadratic by graphing.
 - a. $x^2 - 16 = 0$
 - b. $2x^2 - 11x + 5 = 0$

2. Factor $x^2 - 12x + 20 = 0$ and find the coordinates of the vertex.

3. Solve the following equations.
 - a. $x^2 = 289$
 - b. $5x^2 = 320$

4. Find the value of c that makes $x^2 - 15x + c$ a perfect square trinomial. Write the expression as a binomial squared.

5. Solve the following equations by completing the square.
 - a. $x^2 - 10x = 46$
 - b. $3x^2 + 42x + 45 = 0$

6. Solve the following equations using the quadratic formula.
 - a. $2x^2 + 3x - 5 = 0$
 - b. $-5x^2 + 4x + 12 = 0$

7. Find the discriminant of the following equations to determine the number of real solutions.
 - a. $7x^2 + 14x + 7 = 0$
 - b. $-4x^2 - 6x - 1 = 0$