CCSS Advanced Algebra 4 Quadratic Formula Review Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Factor the polynomial and use the factors to find the x-intercepts of the function.

2. Explain why you can’t factor . How could you solve the equation ?

3. The Quadratic Formula () is a shortcut for a long process of solving Quadratic Equations that CANNOT BE FACTORED ([full mathematics of the shortcut](https://www.mathsisfun.com/algebra/quadratic-equation-derivation.html)). To use the shortcut, you follow three steps:

* Make the equation to be solved in the form -- it is essential to have the equation =0.
* Identify the values of a, b and c from the equation (these are the coefficients on the term, the term and the constant coefficient.
* Use a calculator to evaluate and to determine the solutions.

Use the Quadratic Formula to solve each equation below:

1. b. c.

4. All of the above examples, have 2 solutions. Is it possible for a Quadratic Equation to have only 1 solution? Explain why or why not. How could using the Quadratic Formula give you only one solution?

5. The equation has only one solution. What must be true about c? How do you know?

6. Show that has only one solution.

7. Is it possible that a Quadratic Equation has zero real solutions? Explain why or why not. How could using the Quadratic Formula give you no real solutions?

8. The equation has no real solutions. What must be true about c? Be specific.

9. For each Quadratic Equation below, determine whether the equation has 2 real solutions, 1 real solution or no real solutions?

1. b. c.

10. Show that the quadratic function has NO REAL ROOTS.