

Name: _____
Date: _____
Class: _____

Algebra
Unit 8
EC

To be eligible to receive extra credit on the unit test you must have a score below 75. To receive extra credit you must score an 80% or higher on this assignment (anything lower results in no extra credit). If you earn extra credit is calculated in the following manner: $\text{Old Test Score} + (75 - \text{Old Test Score})(2/3) = \text{New Test Score}$. This assignment will not be accepted late for any reason other than missing the day of school it is due in which case it must be turned in the next day you are in school even if you do not have class.

1) [3] Solve: $4x^3 = 676x$

2) [4] Solve: $36 - 35x = -6x^2$

3) [4] Solve the system: $g(x) = x^2 - 4x + 5$ and $t(x) = -x^2 + 2x + 1$

4) [5] Three consecutive integers are related in the following manner. The product of the smallest and the largest is 42 more than 14 times their sum. Find both sets of consecutive integers that share this property.

5) [4] If a rectangle has a perimeter of 60 and its length is represented by $2x + 2$ while its width is represented by $x^2 + 3x - 8$. Find the area of this rectangle.

6) [3] Find the axis of symmetry for the following parabola: $y(x) = -6x^2 - 7x + 100$.

7) [3] State the interval over which the following function is positive
 $q(x) = -x^2 + 9x - 14$

8) [3] Find the vertex of the following parabola: $y = -14x^2 + 18x - 96$

9) [4] Find the zeroes of the following function: $h(x) = 6x^2 - 7x - 98$