Name: _____ Algebra
Date: _____ Unit 10
Class: _____ PS

Remember, this assignment is 15 points of your 100 point test grade. You can have this assignment checked as many times as you wish prior to the test. It is due at the beginning of class the day you take the test

1) [3] Solve (answers to the nearest tenth): $7x^2 - 22x - 18 = 0$

2) [4] Solve (answers in simplest radical form): $2x^2 + 16x + 9 = 0$

3) [4] Solve (answers to the nearest tenth): $4x^2 - 6x - 7 = -22 - 8x + 10x^2$

4) [4] Solve (answers in simplest radical form): $6x - 15 + 8x^2 = 3x^2 - 7 - 20x$

5) [3] Find the zeros of the function (to the nearest tenth): $h(x) = 15x^2 - 9x - 18$

6) [4] Find the solution to the system (all answers to the nearest tenth):
$y = 6x^2 - 14x - 9$ and $y = x^2 + 21x + 26$

7) [3] Describe the shifts that $f(x) = x^2$ would need to go through to become $g(x) = -(x + 7)^2 - 19$.

8) [3] Write an equation that would shift $y = |x - 2| + 4$ down 7 units and 2 units to the right.

9) [3] Describe the shift that $y = 2^{x-6} - 9$ would need to go through to become $y = 2^{x+3} - 10$.

10) [3] Write an equation that would shift: $g(x) = \sqrt{x + 5} - 17$ to the left 9 and up 14 to create f(x).

11) [3] Explain the difference in shifts that $f(x) = x^2$ would go through to become $g(x) = \left(\frac{1}{2}x\right)^2$ vs $h(x) = \frac{1}{2}x^2$.

12) [3] Place the following function into vertex form: $f(x) = x^2 - 9x + 17$

13) [4] Place the following function into vertex form: $q(x) = 4x^2 + 6x - 15$

14) [5] If a rock is thrown and its path in the air can be modeled by the equation: $y = -x^2 + 4x + 1$, where x is the seconds since the rocks release and y is the height in meters above the ground, answer the following question: How high is the rock off the ground when it is released from the person's hand? What is the highest point the rock reaches during its flight? Give and exact answer as to how long the rock is in the air.