Alg2 Unit 1 HW #6 Name:_____ Period: _____

1. Simplify: a. $\sqrt{-152}$ b. $\pm\sqrt{520}$

2. Simplify: a. $(9+4i)(8-12i)$ b. $(6-3i)-(2i-9)$

3. Simplify: a. $(4x-10)^2$ b. $(-5x-19x^2+3)+(7x^2-x-10)$

4. Use the following equation to answer the questions below: $y = 6x^3-18x^2-2x+15$

   a. How many terms are there in the equation? _____

   b. Classify the equation based on the number of terms: _____

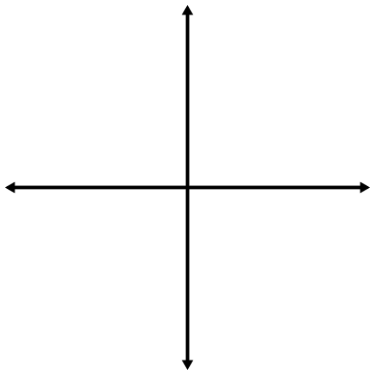
   c. What is the degree of the equation? _____

   d. What does the degree tell you about the graph?

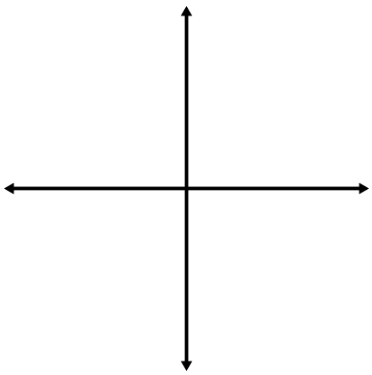
   e. Is the leading coefficient positive or negative? What does this tell you about the graph?

Use the information provided to draw a sketch.

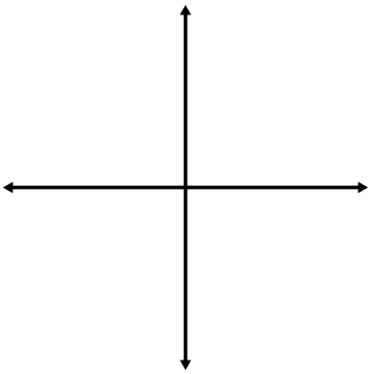
5. Degree of 7, 3 real roots, LC-



6. Degree of 8, 5 real roots, LC+



7. Degree 6, 4 real roots, LC+



Solve by using the quadratic formula. Check your answer by using a graphing calculator.

8. $y = -4x^2 - 10x - 2$

9. Prove the following equations are equivalent.

$f(x) = x^2 - 14x - 72$

$f(x) = (x + 4)(x - 18)$

$f(x) = (x - 7)^2 - 121$