Algebra 2   NAME_____

Quadratics Part 2 Review   DATE_____

1. Simplify each of the following:
   a. $(2 + 7i) - (-3 - 2i)$

   b. $(3 + 10i)(-4 - 8i)$

   c. $(1 + 6i)(1 - 6i)$

2. Solve algebraically: $\sqrt{5 - x} + 3 = x$

3. A pelican flying in the air over water drops a crab from a height of 30 feet. The distance the crab is from the water as it falls can be represented by the function $h(t) = -16t^2 + 30$, where t is time, in seconds. To catch the crab as it falls, a gull flies along a path represented by the function $g(t) = -8t + 15$. Can the gull catch the crab before the crab hits the water? Justify your answer algebraically.

4. Solve algebraically: $x - \dfrac{10}{x} + 3 = 0$

5. Find the equation of the parabola whose focus is (4, 2) and directrix is $x = 2$.

6. Solve algebraically: $\sqrt[3]{4x + 28} + 8 = 12$