Math 1120F - Fall 2014
Worksheet 17 - §5.6

Name(s):_____

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Work with partners in groups of 2-4. **This is required.**

1. Information is given about a polynomial whose coefficients are real numbers. Find the remaining zeros of the polynomial.
   (a) Degree 4; zeros: $2 - i$, i

   (b) Degree 6; zeros: 2, $2 + i$, $-3 - i$, 0

2. Form a polynomial with real coefficients having the following characteristics.
   (a) Degree 4; zeros: i; $1 + 2i$

   (b) Degree 5; zeros: 2; $-2i$; $1 + i$

3. Use the given zero to find all remaining zeros.

(a) $f(x) = 2x^4 + 5x^3 + 5x^2 + 20x - 12$; zero: $2i$

(b) $g(x) = x^4 - 7x^3 + 14x^2 - 38x - 60$; zero: $1 + 3i$

(c) $h(x) = x^3 + 3x^2 + 25x + 75$; zero: $-5i$

4. Find all zeros of the following functions. Write the function in factored form.
   (a) $f(x) = x^3 - 1$

   (b) $g(x) = x^3 - 8x^2 + 25x - 26$

5. Find all solutions to the following equations.
   (a) $x^4 = 1$

   (b) $x^4 + 5x^2 = -4$