Names: _____ _____ _____

Activity #7: Polynomials II **College Algebra**

1. The polynomial
$$p(x) = x^5 - 2x^4 - 10x^3 + 20x^2 + 9x - 18$$
has roots at $-3; 3; 2; 1$. Completely factor $p(x)$ as a product of linear factors.

2. The polynomial
$$p(x) = x^5 - 7x^4 + 19x^3 - 25x^2 + 16x - 4$$
has roots at 1 and 2. Find the multiplicity of these roots.

3. Find the list of candidate roots of the polynomial

$$p(x) = 5x^3 + x^2 - 4x + 6$$

given by the Rational Root Theorem. **Do not factor.**

4. Factor the following polynomial.

$$p(x) = 4x^4 + 12x^3 + 3x^2 - 13x - 6$$

5. Factor the following polynomial.

$$p(x) = 6x^5 + x^4 - 20x^3 + 9x^2 + 8x - 4$$