Name:

<u>Section 3.4 – Remainder, Factor, and Rational Root Theorems</u>

1. What is the remainder, given the following criteria?

   $2x^4 - 3x^3 + 2x - 3$ divided by $x - 2$

2. What is the remainder, given the following criteria?

   $5x^3 + 2x^2 + x + 5$ divided by $x + 3$

3. Use the Rational Root Theorem to find potential roots, test them as factors using the Remainder Theorem, then use Synthetic Division initially factor, and then factor fully.

$$f(x) = 4x^3 + 12x^2 + 5x - 6$$