Name:

Section 3.3 – Division of Polynomials

1. Use Long Division to divide the following, then factor the result

   $6x^3 - 19x^2 + 11x + 6$ by the factor $x - 2$

2. When $x^3 - x^2 + 5x + k$ is divided by $x + 2$, the remainder is 1. Find the value of k.
   (Use Long Division)

3. Use Synthetic division to divide the following.

   $x^4 - 4x^3 - 15x^2 + 58x - 40$ by $x - 5$

4. When $x^3 + kx + 6$ is divided by $x + 2$, the remainder is 4. Find the value of k.
   (Use Synthetic Division)