7.5 Factor and Remainder Theorem Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the zeros of the given polynomials algebraically by factoring and setting each factor equal to zero. Check your answers with your calculator.

**1.  2.  3. **

**4.  5.  6. **

Find the remainder when  is divided by , without using division.

**7. ; **

**8. ; **

Use the Factor Theorem to determine whether  is a factor of .

**9.  **

**10.  **

**11**. Find a polynomial of degree 4 such that  and the zeros of  are 0, -1, 2, and -3.

**12.** Find a number *k* such that  is a factor of .

**13.** When **** is divided by, the remainder is 4. Find *c*.

Use synthetic division and the remainder theorem to evaluate P(c)

**14.**  

**15.**  

**16.** Given that 3 is a zero of the polynomial , factor completely

**17**. Given that 2 is a zero of the polynomial , factor completely

**18.**

