

First & Last Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## 6.7 Solving Polynomials with Real Zeros Practice

**Directions:** Use the Remainder Theorem to evaluate  $f(x)$  at  $c$ .

1.  $f(x) = 4x^3 + 10x^2 - 15x - 21$ ;  $c = 2$

$$f(2) = 21$$

2.  $f(x) = 2x^4 - 4x^3 + 5x^2 - 9x$ ;  $c = -1$

$$f(-1) = 20$$

3.  $f(x) = 16x^4 - 48x^3 - 9x^2 + 27x$ ;  $(x - 3)$

$$f(3) = 0$$

4.  $f(x) = 2x^3 + 13x^2 - 15x - 126$ ;  $(x + 6)$

$$f(-6) = 0$$

**Directions:** Use the given factor to completely factor the polynomial and find its zeros.

5.  $f(x) = x^3 + 6x^2 - 16x - 96$ ;  $(x - 4)$

$$x = \{-4, 4, -6\}$$

6.  $f(x) = 2x^3 + 13x^2 - 15x - 126$ ;  $(x + 6)$

$$x = \{-6, -\frac{7}{2}, 3\}$$

Zero

Zero

7.  $f(x) = 16x^4 - 48x^3 - 9x^2 + 27x; c = 3$

8.  $f(x) = x^3 + 2x^2 - 11x - 12; c = -4$

$$x = \left\{ -\frac{3}{4}, 0, \frac{3}{4}, 3 \right\}$$

$$x = \{ -4, -1, 3 \}$$

9.  $f(x) = 2x^3 + 7x^2 - 17x - 10; (x - 2)$

10.  $f(x) = x^3 - x^2 - 25x + 25; (x + 5)$

$$x = \left\{ -5, -\frac{1}{2}, 2 \right\}$$

$$x = \{ -5, 1, 5 \}$$