

# Chapter 4

## Review Worksheet

Name \_\_\_\_\_

Period \_\_\_\_\_

**Directions:** Write the polynomial equation of least degree for each set of roots given.

1.  $-3, 1, 0$

2.  $2 \pm 3i, 4$

**Directions:** Find the discriminant of each equation and describe the nature of the roots of the equation. Then solve each equation by using the quadratic formula.

3.  $x^2 + 8x - 2 = 0$

4.  $x^2 - 2x + 7 = 0$

**Directions:** Find the zeros of the following functions. Show all work.

5.  $f(x) = x^3 - x^2 - 34x - 56$

6.  $f(x) = 2x^3 - 11x^2 + 12x + 9$

7.  $f(x) = x^4 - 13x^2 + 36$

8.  $f(x) = x^4 + x^3 - 9x^2 + 17x - 8$

**Directions:** Solve each equation. Show your work.

9.  $\sqrt{x+2} = x+1$

10.  $x+1 - 2\sqrt{x+4} = 0$

11.  $8\sqrt{x+7} - x^3 - 21 = 0$

12.  $\sqrt{x} + \sqrt{2x} = 4$

**Directions:** Solve each equation. Show your work.

13.  $\frac{x-1}{x+2} = 3$

14.  $\frac{3x}{x+5} + \frac{1}{x-2} = \frac{7}{x^2 + 3x - 10}$

15.  $\frac{1}{x} - \frac{2}{x-3} = 4$

16.  $\frac{2}{x+1} - 1 < \frac{1}{6}$