Chapter 1
Solve for x.

1. $|3x - 1| = 5$ 2. $x^2 - 3x = -8$ 3. $1 - \dfrac{3}{x + 5} = \dfrac{15}{x^2 + 5x}$

4. $\sqrt{2x + 3} = 1 - x$

5. You want to buy a rectangular rug for a room that is 13 ft. x 17 ft. You need to leave a uniform strip of floor around the rug. You can afford to buy 140 sq. ft. of carpeting. What are the dimensions will the rug have?

6. Solve. $\dfrac{3}{x - 4} - 3 \geq 0$ Write your answer in interval notation and draw a number line.

Chapter 2
7. Write the equation for the line through (1, -4) perpendicular to $4x - 2y = 7$

8. $f(x) = x^2 - 2x + 4$ and $g(x) = 2x - 1$. Find $(f \circ g)(x)$

9. Identify the y coordinate of the

   vertex of $y = x^2 + 6x + 6$

10. Divide $\dfrac{x^3 - 1}{x + 2}$

Chapter 3

11. Write an equation for a rational function
a vert. asympt. of y = 2 and a horiz. asymp of x = 0.

It has an x-int. of $-\dfrac{3}{2}$ and a y-int of $-\dfrac{3}{2}$.

12. R varies jointly as f and the square root of
   H. R = 0.00077 when h = 3 and f = 1.

   Find R when h = 4 and f = 2.

Chapter 4

13. Use the appropriate formula to find
the future value of $3986 invested for
8 years at 3% interest compounded quarterly.

14. Given $\log_a 2 = 0.4307$ and $\log_a 3 = 0.6826$,
   find the value of $\log_a 24$.