1. Identify the property of real numbers being demonstrated (i.e. “associative property of addition”).
   (a) Commutative Property of Multiplication
   (b) Associative Property of Multiplication
   (c) Distributive Property
   (d) Multiplicative Identity

2. In each case, indicate if the statement is true or false.
   (a) False
   (b) True
   (c) False
   (d) True

3. Perform the following operations on polynomials, simplifying completely.
   (a) $x^3 - x^2 - 3x$
   (b) $4x^3 + x - 6$
   (c) $8x^2 + 14x - 15$
   (d) $2x^3 + 2x^2 + 2x + 2$
   (e) $-x^2 - x + 7$
   (f) $2x^3 - 4x + 8$

4. Factor the following polynomials completely.
   (a) $(x - 4)(x - 4) = (x - 4)^2$
   (b) $4x(x + 2)(x - 2)$
   (c) $(x - 3)(x + 3)(x + 2)$
   (d) $(a + 2)(a - 2)(a + 1)(a - 1)$

5. Perform the indicated operation on rational expressions, simplifying completely.
   (a) $\frac{(x+5)}{(x-3)(x+1)}$
   (b) $\frac{(2x+1)}{(x-3)(x+2)}$
   (c) $\frac{1}{a(x+h)}$
   (d) $\frac{x-1}{2(x+5)}$

6. Simplify the following, eliminating any negative exponents.
   (a) $\frac{1}{9}$
   (b) $a^5b^3$
   (c) $\frac{3^3}{p^7}$
   (d) $\frac{y^4}{x^2}$

7. Convert from decimal to scientific notation, or from scientific to decimal, as appropriate.
   (a) $7.2 \times 10^9$
   (b) $5.1 \times 10^{-7}$
   (c) $0.00000003$
   (d) $25,000,000$

8. Simplify completely, rationalizing the denominator when appropriate.
   (a) $\frac{-3x\sqrt{5x}}{x}$
   (b) $\frac{3\sqrt{2}}{x}$
   (c) $2 + \sqrt{2}$
   (d) $\frac{\sqrt{x+\pi} + \sqrt{\pi}}{x}$

9. Solve each of the following equations (story problems may be found in section 2.1 and in the chapter 2 review section).
   (a) $x = 2$
   (b) $x = -\frac{1}{3}$
   (c) $w = \frac{62}{59}$
10. Solve each of the following systems of linear equations.
   
a. \( x = 4, y = 1 \)

11. Solve each of the following inequalities, expressing your answer in interval notation.
   
   (a) \((2, \infty)\)
   (b) \((-\infty, 11]\)
   (c) \(\left(\frac{5}{2}, \frac{11}{2}\right]\)

12. Simplify or solve, expressing your answer in interval notation when appropriate.
   
   (a) \(x \in \{3, -3\}\)
   (b) \(x \in \{3, \frac{1}{2}\}\)
   (c) \([0, 10]\)
   (d) \([-\infty, -3] \cup [9, \infty)\)