Name _____ Date _____ Class _____

LESSON 8-2

# Practice B

## *Multiplying and Dividing Rational Expressions*

**Simplify. Identify any *x*-values for which the expression is undefined.**

**1.** $\frac{x^2 + 3x + 2}{x^2 - 3x - 4}$

**2.** $\frac{4x^6}{2x^4}$

**3.** $\frac{x^2 - x^3}{2x^2 - 5x + 3}$

**4.** $\frac{x^3 + x^2 - 20x}{x^2 - 16}$

**5.** $\frac{3x^2 - 9x - 12}{6x^2 + 9x + 3}$

**6.** $\frac{9 - 3x}{15 - 2x - x^2}$

**Multiply. Assume all expressions are defined.**

**7.** $\frac{4x + 16}{2x + 6} \cdot \frac{x^2 + 2x - 3}{x + 4}$

**8.** $\frac{x + 3}{x - 1} \cdot \frac{x^2 - 2x + 1}{x^2 + 5x + 6}$

**Divide. Assume all expressions are defined.**

**9.** $\frac{5x^6}{x^2y} \div \frac{10x^2}{y}$

**10.** $\frac{x^2 - 2x - 8}{x^2 - 2x - 15} \div \frac{2x^2 - 8x}{2x^2 - 10x}$

**Solve. Check your solution.**

**11.** $\frac{x^2 + x - 12}{x - 3} = 15$

**12.** $\frac{2x^2 + 8x - 10}{2x^2 + 14x + 20} = 4$

**Solve.**

**13.** The distance, $d$, traveled by a car undergoing constant acceleration, $a$, for a time, $t$, is given by $d = v_0 t + \frac{1}{2}at^2$, where $v_0$ is the initial velocity of the car. Two cars are side by side with the same initial velocity. One car accelerates, $a = A$, and the other car does not accelerate, $a = 0$. Write an expression for the ratio of the distance traveled by the accelerating car to the distance traveled by the nonaccelerating car as a function of time.