Algebra II **Section 8.2**
Auch **Date:**

Objectives

- Simplify rational expressions
- Multiply and divide rational expressions

Vocabulary

rational expressions

Example 1

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

a) $\frac{3x^7}{2x^4}$

b) $\frac{x^2-2x-3}{x^2+5x+4}$

Try it!

a) $\frac{16x^{11}}{8x^2}$

b) $\frac{x^2-3x+2}{x^2-5x+4}$

c) $\frac{6x^2+7x+2}{3x^2-4x-4}$

Example 2

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

a) $\dfrac{2x-x^2}{x^2-x-2}$

Try it!

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

a) $\dfrac{10x-2x^2}{x-5}$ **b)** $\dfrac{-x^2+3x}{2x^2-7x+3}$

Example 3

Multiply. Assume all expressions are defined

a) $\dfrac{2x^4y^5}{3x^2}\cdot\dfrac{15x^2}{8x^3y^2}$ **b)** $\dfrac{x+2}{3x+12}\cdot\dfrac{x+4}{x^2-4}$

Try it!

a) $\dfrac{x}{15}\cdot\dfrac{x^7}{2x}\cdot\dfrac{20}{x^4}$ **b)** $\dfrac{10x-40}{x^2-6x+8}\cdot\dfrac{x+3}{5x+15}$

Example 4

Divide. Assume all expressions are defined

a) $\dfrac{4x^3}{9x^2y} \div \dfrac{16}{9y^5}$

b) $\dfrac{x^5-4x^3}{x^2-x-2} \div \dfrac{x^5-x^4-2x^3}{x^2-1}$

Try it!

Divide. Assume all expressions are defined

a) $\dfrac{x^2}{4} \div \dfrac{x^4y}{12y^2}$

b) $\dfrac{2x^2-7x-4}{x^2-9} \div \dfrac{4x^2-1}{8x^2-28x+12}$

Example 5

Solve. Check your solution.

a) $\dfrac{x^2-9}{x+3}=7$

b) $\dfrac{x^2+3x-4}{x-1}=5$

Try it!

Solve. Check your solution.

a) $\dfrac{x^2+x-12}{x+4}=-7$

b) $\dfrac{4x^2-9}{2x+3}=5$

Homework:8.2 pg 580 #1-23 odd