

Name: _____ Hour: _____ Date: _____

NOTES: Section 8.4 – Multiply and Divide Rational Expressions

Goals: #1 - I can simplify rational expressions.

#2 - I can multiply rational expressions.

#3 - I can divide rational expressions.



Homework: Lesson 8.4 Worksheet

Notes:

A _____ expression is in _____

if its numerator and denominator have no common factors (other than 1).

To _____ rational expressions, first _____ the numerator and _____ the denominator. Then _____ out any common factors.

Example #1: Simplify the expression.

1. $\frac{x^2 - 2x - 15}{x^2 - 9}$

2. $\frac{4x^3}{8x^4 - 16x^2}$

You practice: Simplify the expression.

1. $\frac{x + 4}{x^2 - 16}$

2. $\frac{2x^2 + 10x}{3x^2 + 16x + 5}$

Name: _____ Hour: _____ Date: _____

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To _____ rational expressions, first _____ each numerator and denominator. Then, multiply _____ and multiply _____ and _____.

Example #2: Multiply the expressions. Simplify the result.

1. $\frac{3x - 3x^2}{x^2 + 4x - 5} \cdot \frac{x^2 + x - 20}{3x}$

2. $\frac{x + 2}{x^3 - 27} \cdot (x^2 + 3x + 9)$

You practice: Multiply the expressions. Simplify the result.

1. $\frac{2x^2 - 10x}{x^2 - 25} \cdot \frac{x + 3}{2x^2}$

2. $\frac{6x^2 - 18x}{x^2 + x - 6} \cdot \frac{x^2 - x - 2}{x^2 - 7x - 8}$

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To _____ rational expressions, change it to a _____ problem. Multiply by the _____ of the second rational expression. _____ each numerator and denominator. Then, multiply _____ and multiply _____ and _____.

Example #3: Divide the expressions. Simplify the result.

1. $\frac{7x}{2x-10} \div \frac{x^2-6x}{x^2-11x+30}$

2. $\frac{4x}{5x-20} \div \frac{x^2-2x}{x^2-6x+8}$

You practice: Divide the expressions. Simplify the result.

1. $\frac{3}{x+7} \div \frac{8x^2-8x}{x^2+6x-7}$

2. $\frac{2x^2+3x-5}{6x} \div (2x^2+5x)$