Algebra 2

Ch. 9 Handout 9.4

Rational Expressions

A rational expression is in **simplest form** when it numerator and denominator are polynomials that have no common divisors.

In simplest form	Not in simplest form
$\frac{x}{x-1}; \frac{2}{x^2+3}$	$\frac{x}{x^2}; \frac{\frac{1}{x}}{x+1}; \frac{2(x-3)}{3(x-3)}$

You can simplify some expressions by dividing out common factors.

Simplify each expression. State any restrictions on the variables.

1. $\dfrac{-27x^3y}{9x^4y} = \dfrac{-3}{x}$

$x \neq 0$; $y \neq 0$

Simplify each expression. State any restrictions on the variables.

2. $\dfrac{6-3x}{x^2-6x+8}$

$-3(-2+x)$

$= \dfrac{-3(x-2)}{(x-4)(x-2)} = \boxed{\dfrac{-3}{x-4}}$

$x \neq 4, 2$

Simplify each expression. State any restrictions on the variables.

3. $\dfrac{2x^2-3x-2}{x^2-5x+6} = \dfrac{(2x+1)(x-2)}{(x-2)(x-3)} = \dfrac{2x+1}{x-3}$

$x \neq 2, 3$

Simplify each expression. State any restrictions on the variables.

4. $\dfrac{x^2-6x-16}{x^2+5x+6} = \dfrac{(x-8)(x+2)}{(x+3)(x+2)} = \dfrac{x-8}{x+3}$

$x \neq -3, -2$

Assignment:

Day 1: pgs 511-513 1-6,19-21,23,25,33-35