



6.1 Reducing Rational Expressions

Need To Know



- Review reducing fraction
- Review polynomial factoring methods
- Idea of rational expressions w/ restrictions
- How to reduce rational expressions



Review Reducing Fraction

Reduce $18/24$

1. By shortcut

2. Show all steps

How to Reduce

1. _____

2. _____

Review Factoring Polynomials

- A. Check for GCF on all factoring (Always do first!)
- B. Look at the Number of Terms
2. Two Terms – Formulas
 - $x^2 - y^2 = (x + y)(x - y)$
 - $x^2 + y^2$ is prime
 3. Three Terms
 - Guess, check, and revise
 - Formulas: $x^2 + 2xy + y^2 = (x + y)^2$
 $x^2 - 2xy + y^2 = (x - y)^2$
 4. Four Terms
 - By Grouping
- C. Always Factor Completely

Idea of Rational Expressions

A rational expression is a fancy word for a polynomial fraction.

$$\frac{4}{5}$$

$$\frac{4}{x}$$

$$\frac{x}{x-3}$$

$$\frac{x+1}{x^2+x-2}$$

x	$\frac{4}{x}$
-2	
0	
1	
3	

x	$\frac{x}{x-3}$
-2	
0	
1	
3	

x	$\frac{x+1}{x^2+x-2}$
-2	
0	
1	
3	



Rational Expressions

Rational expression, algebraic fractions and fractional expressions all mean the same.

We must be careful _____, so we sometimes have to put restrictions on x.

$$\frac{x+5}{x-3}$$

$$\frac{6}{x^2 + x - 6}$$



Reducing Rational Expressions

Reduce to lowest terms

$$\frac{45x^2y^3}{9x^5y}$$

$$\frac{4x-12}{6x}$$

How to Reduce

- 1.
- 2.



Reducing Rational Expressions

Reduce to lowest terms

$$\frac{5a+15}{10a^2-90}$$

How to Reduce

- 1.
- 2.



Reducing Rational Expressions

Reduce to lowest terms

$$\frac{x^2-4}{x^2-2x-8}$$

How to Reduce

1. Factor
2. Divide common factors



Reducing Rational Expressions

Reduce to lowest terms

$$\frac{x-3}{3-x}$$

$$\frac{7a^2 - 7b^2}{3b^2 - 3a^2}$$

How to Reduce

1. Factor
2. Divide common factors

