

Rational Expressions - Simplify

Algorithm

1. factor the numerator and denominator
2. divide out common factors

Example Simplify $\frac{x^2+7x+12}{x^2-9}$

$$1. \quad \frac{(x+4)(x+3)}{(x+3)(x-3)}$$

$$2. \quad \frac{(x+4)\cancel{(x+3)}}{\cancel{(x+3)}(x-3)} = \frac{x+4}{x-3}$$

Simplify the following rational expressions.

$$1. \quad \frac{x^2 - 4}{x^2 + 5x + 6}$$

$$2. \quad \frac{x^2 + 7x + 12}{x^2 + 9x + 20}$$

$$3. \quad \frac{x^2 + 11x + 10}{x^2 - 3x - 4}$$

$$4. \quad \frac{x^2 + 4x - 12}{x^2 - 8x + 12}$$

$$5. \quad \frac{2x^2 + x - 3}{2x^2 + 7x + 6}$$

$$6. \quad \frac{4x^2 + 3x - 1}{x^2 - 1}$$

$$7. \quad \frac{6x^2 - 5x - 6}{10x^2 - 13x - 3}$$