

Ex1: Simplify.

a. $\frac{3}{6+3}$

b. $\frac{3}{6(3)}$

Ex2: Simplify. State any restrictions.

a. $\frac{2x(x+1)}{(x+1)(x^2-4)}$

*First, FACTOR numerator & denominator!

*Then cross out LIKE FACTORS (not terms)!

b. $\frac{3a^3 - a^4}{2a^3 - 6a^2}$

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

d. $\frac{-27x^3y}{9x^4y}$

$$\text{e. } \frac{x^2 + 10x + 25}{x^2 + 9x + 20}$$

$$\text{f. } \frac{x - 2}{3x^2 - 4x - 4}$$

Multiplying/Dividing Rational Expressions

Example : Multiply and state any restrictions.

$$\text{a. } \frac{2a^2}{5b^2c} \bullet \frac{3bc^2}{48a^3}$$

$$\text{b. } \frac{2x^2 + 7x + 3}{x - 4} \bullet \frac{x^2 - 16}{x^2 + 8x + 15}$$

c. $\frac{a^2 - 4}{a^2 - 1} \cdot \frac{a + 1}{a^2 + 2a}$ d. $\frac{3x^2 + 5x - 2}{x - 5} \cdot \frac{x^2 - 25}{3x^2 - 7x + 2}$

Ex : Divide and simplify. State any restrictions.

a. $\frac{14c^2d}{9m^3n^2} \div \frac{35cd^3}{24mn}$

b. $\frac{x^2 + 2x - 8}{x^2 + 4x + 3} \div \frac{x - 2}{3x + 3}$

$$\text{c. } \frac{\frac{y+2}{y^2+5y}}{\frac{y(y-2)}{y^2-25}}$$