

Simplify

$$\frac{x^2}{x^2} = 1$$

$$\frac{\cancel{x}}{\cancel{x}} \cdot \frac{\cancel{x}}{\cancel{x}} \cdot \boxed{\frac{x}{3}}$$

Factored Form $\frac{(2m-5)(\cancel{m+6})}{(\cancel{m+6})(3m+1)}$

$$\frac{(2m-5)}{(3m+1)}$$

Simplest form

1. Factor $\frac{x^2 + 6x + 9}{x^2 - 9} = \frac{(x+3)(\cancel{x+3})}{(x-3)(\cancel{x+3})}$

2. Simplify

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

2 Terms

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

$$\frac{x^2}{\cancel{x}} \cdot \boxed{x} \cdot \frac{4x}{\cancel{x}} = \boxed{4}$$

$$\frac{x(\cancel{x+4})}{2(\cancel{x+4})} = \frac{x}{2}$$

1. common multiple/GCF
2. divide
3. rewrite

Adding and Subtracting Rational Expressions (fraction)

Ex 1:

1. Same Denominators

$$\frac{5}{14x} + \frac{3}{14x} = \frac{8}{14x} = \frac{4}{7x}$$

2. Add/subtract numerators

3. Denominator stays the same

4. Simplify

Ex 2:

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

$$= \frac{2x+4-8x-2}{-3x^2+x} = \frac{-6x+2}{-3x^2+x} \cdot \frac{2(-3x+1)}{2(-3x+1)}$$

$$= \frac{2(-3x+1)}{x(-3x+1)}$$

$$= \frac{2}{x}$$