

What you will learn about:
Rational Expressions

Simplifying Rational
Expressions

Simplify each expression

$$\frac{-36x^3}{42x^2}$$

$$\frac{-\cancel{36} \cancel{x^3}}{\cancel{42} \cancel{x^2}}$$

$$\frac{-6x}{7}$$

$$\frac{16r^2}{16r^3}$$

$$\frac{1}{\cancel{16} r}$$

$$\frac{1}{r}$$

$$-\frac{70n^2}{28n} = -\frac{10}{4} = -\frac{5n}{2}$$

$$\frac{2r-4}{r-2}$$

$$\frac{\cancel{2}(\cancel{r-2})}{\cancel{r-2}}$$

$$\frac{2}{1}$$

$$\frac{45}{10a-10}$$

$$\frac{45}{10(a-1)}$$

$$\frac{9}{2(a-1)}$$

$$\frac{x-4}{3x^2-12x}$$

$$\frac{\cancel{x-4}}{3x(\cancel{x-4})} = \frac{1}{3x}$$

$$\frac{15a-3}{24}$$

$$\frac{3(5a-1)}{24}$$

$$\frac{5a-1}{8}$$

$$\frac{v-5}{v^2-10v+25}$$

$$\frac{\cancel{v-5}}{(\cancel{v-5})(v-5)}$$

$$\frac{1}{v-5}$$

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

$$\frac{\cancel{x+6}}{(\cancel{x+6})(x-1)}$$

$$\frac{1}{x-1}$$

$$\frac{(v-10)(v+3)}{v^2-7v-30}$$

$$\frac{\cancel{(v+3)}(v-10)}{\cancel{(v+3)}(v-8)}$$

$$\frac{v-10}{v-8}$$

$$\frac{(x+6)(x+2)}{x^2+8x+12}$$

$$\frac{\cancel{(x+6)}(x+2)}{\cancel{(x+6)}(x-3)}$$

$$\frac{x+2}{x-3}$$

$$\frac{b^2+3b-28}{b^2-49}$$

$$\frac{(\cancel{b+7})(b-4)}{(\cancel{b-7})(\cancel{b+7})}$$

$$\frac{b-4}{b-7}$$

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

$$\frac{6a^3+42a^2}{2a^2+26a+84}$$

$$\frac{6a^2(a+7)}{2(a^2+13a+42)}$$

$$\frac{6a^2(a+7)}{2(a+6)(a+7)}$$

$$\frac{6a^2}{2(a+6)} = \frac{3a^2}{a+6}$$

$$\frac{9x^2+81x}{x^3+8x^2-9x}$$

$$\frac{9x(x+9)}{x(x+9)(x-1)}$$

$$\frac{9}{x-1}$$

$$\frac{x^3-x^2-42x}{2x^2-20x+42}$$

$$\frac{x(x^2-x-42)}{2(x^2-10x+21)}$$

$$\frac{x(x-7)(x+6)}{2(x-7)(x-3)}$$

$$\frac{x(x+6)}{2(x-3)}$$

$$\frac{x^2+2x-80}{2x^3-24x^2+64x}$$

$$\frac{(x+10)(x-8)}{2x(x^2-12x+32)}$$

$$\frac{(x+10)(x-8)}{2x(x-8)(x-4)}$$

$$\frac{x+10}{2x(x-4)}$$

Adding/Subtracting Rational Functions

Simply each expression

$$\frac{u-v}{8v} + \frac{6u-3v}{8v}$$

$$\frac{m-3n}{6m^3n} - \frac{m+3n}{6m^3n}$$

$$\frac{5}{a^2+3a+2} + \frac{5a+1}{a^2+3a+2}$$

$$\frac{x+2}{2x^2+13x+20} - \frac{x+3}{2x^2+13x+20}$$