

Feb. 28, 2018

Sect. 6-2

Simplifying Rational Expressions

Simplify

Mult.

Divide

Simplify

$$\frac{\overset{3}{\cancel{3}}}{\underset{\cdot}{\cancel{6}}_{\cdot 3}} = \frac{1}{2}$$

$$\frac{\overset{3}{\cancel{6}} \times \overset{3}{\cancel{5}} \overset{1}{\cancel{4}}}{\underset{\cdot}{\cancel{2}} \times \overset{2}{\cancel{4}} \underset{\cdot}{\cancel{4}}} = 3 \times 3 \underset{\cdot}{\cancel{4}}$$

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

$$\frac{\cancel{(x-3)}(x+4)}{(x-5)(x-3)\cancel{(x-3)}} = \frac{x+4}{(x-5)(x-3)}$$

$$\frac{x^2 + 10x + 25}{x^2 + 9x + 20}$$
$$\frac{(\cancel{x+5})(x+5)}{(\cancel{x+5})(x+4)} = \frac{x+5}{x+4}$$

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

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

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

$$\frac{6 - 3x}{x^2 - 6x + 8}$$

$$\frac{-3(\cancel{2-x})}{(x-4)(\cancel{x-2})}$$

$$\frac{-3}{x-4}$$

Mult.

$$\frac{2x^2 + 7x + 3}{x - 4} \cdot \frac{x^2 - 16}{x^2 + 8x + 15}$$

$$\frac{(2x + 1)\cancel{(x + 3)}}{\cancel{(x - 4)}} \cdot \frac{(x + 4)\cancel{(x - 4)}}{(x + 5)\cancel{(x + 3)}}$$

$$\frac{(2x + 1)(x + 4)}{(x + 5)}$$

$$\frac{a^2 - 4}{a^2 - 1} \cdot \frac{a + 1}{a^2 + 2a}$$

$$\frac{\cancel{(a+2)}(a-2)}{\cancel{(a+1)}(a-1)} \cdot \frac{\cancel{(a+1)}}{a\cancel{(a+2)}}$$

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

$$\begin{array}{ccc}
 & \text{Div} & \\
 \frac{1}{2} & : & \frac{3}{4} \\
 \cancel{\frac{1}{2}} & \cdot & \cancel{\frac{4}{3}}^2 \\
 & & \frac{2}{3}
 \end{array}$$

$$\frac{4}{6}$$

$$\frac{4-x}{(3x+2)(x-2)} \div \frac{5(x-4)}{(x-2)(7x-5)}$$

$$\frac{\cancel{4-x}}{(3x+2)\cancel{(x-2)}} \cdot \frac{\cancel{(x-2)}(7x-5)}{\cancel{-5(x-4)}}$$

$$\frac{(7x-5)}{-5(3x+2)}$$

$$\frac{a^2 + 2a - 15}{a^2 - 16} \div \frac{a+1}{3a-12}$$
$$\frac{(a+5)(a-3)}{(a+4)\cancel{(a-4)}} \cdot \frac{3\cancel{(a-4)}}{(a+1)}$$
$$\frac{3(a+5)(a-3)}{(a+4)(a+1)}$$