Simplify without a calculator. Leave your answer as an improper fraction in reduce form.

One way to do this problem is shown below. There are other ways to get the same answer.

$$\frac{336}{48} \cdot \frac{248}{279}$$

36 and 48 can be reduced by the common factor of 12

$$\frac{24}{27}$$
8

24 and 27 can be reduced by the common factor of 3

4 and 8 can be reduced by the common factor of 4

$$\frac{3}{14} \cdot \frac{8^2}{9_3} = \sqrt{\frac{2}{3}}$$

3 and 9 can be reduced by the common factor of 3

Simplify without a calculator. Leave your answer as an improper fraction in reduce form.

you can first factor the denominators to see what they already have in common

> This shows that the LCD will by 4 • 6 • 7

3.

$$\frac{7}{24} + \frac{11}{28} = \frac{7}{4.6}$$

you can then multiply each fraction by the "missing" factor of the Common Denominator

$$= \frac{7}{7} \cdot \frac{1}{4 \cdot 6} + \frac{11}{4 \cdot 7} \cdot \frac{6}{6}$$

$$= \frac{49}{168} + \frac{66}{168}$$

Simplify without a calculator. Leave your answer as an improper fraction in reduce form.

Instead of dividing by 35/64 you multiply by its reciprocal so that you can cross cancel before you multiply.



32 and 64 can be reduced by the common factor of 32

15 and 35 can be reduced by dividing by the common factor of 5

Solve. Leave your answer as an improper fraction if necessary

$$24\left(\frac{\frac{7}{8} + \frac{11x}{24} - \frac{x}{12}\right) = \frac{5}{6}$$

$$21 + 11x - 2x = 20$$

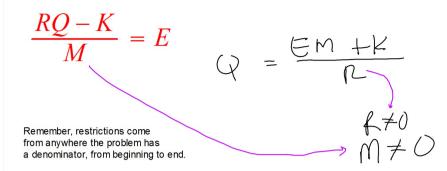
$$21 + 9x = 20$$

$$-21 - 2L$$

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

$$\frac{7}{9}$$

5. Solve for Q. State restrictions on the variables.



7. Simplify this rational expression by factoring both numerator and denominator and canceling common factors. State restrictions on the variable.

$$\frac{8x^{5} - 72x^{3}}{10x^{3} - 20x^{2} - 150x} = \frac{8x^{3}(x^{2} - 9)}{10x(x^{2} - 2x - 15)} = \frac{8x^{3}(x + 3)(x - 3)}{10x(x + 3)(x - 5)}$$

$$\frac{4x^{2}(x - 3)}{5(x - 5)}$$

6. Simplify. Bel

Below are two methods for simplifying this compound fraction.

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

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

Rational Expressions:

The ratio of two polynomials.

A rational expression is in its simplest form when:

The denominator and numerator have no common factors.

Simplify: State restrictions on the variable.

$$\frac{8x^2 + 16x}{x^2 + 7x + 10}$$

$$\frac{8x^2 + 16x}{x^2 + 7x + 10} = \frac{8x(x+2)}{(x+5)(x+2)} = \boxed{\frac{8x}{x+5}}$$

This is NOT a Rational Function, why?

$$\frac{\sqrt{x^2 - 5x + 3}}{2x - 9}$$

The numerator is not a polynomial, therefore, this is not a rational function.