



Déjà Vu, It's Algebra 2!

Lesson 22

Rational Expressions: Addition/Subtraction & Complex Fractions

Recall how to combine rational numbers:

$$\frac{3}{2} + \frac{7}{3} - \frac{1}{6}$$

The same process applies when adding or subtracting rational expressions.

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

Example:

$$\frac{2x}{3x+1} + \frac{5}{x} - \frac{x+4}{x^2-x}$$

Example:

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

A complex (compound) fraction is a fraction, containing another fraction in its numerator, denominator, or both. In general, an expression with a complex fraction is NOT in simplified form.

Example:

$$\frac{1 + \frac{2}{x}}{5x - 2}$$

Example:

Simplify $\frac{\frac{3-x}{x-4}}{x-2}$

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

Example:

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

Déjà RE-Vu

Suppose your average speed driving to San Antonio is 60 mph, but because of traffic, you only

average 40 mph on the return trip. What is your **average speed** for the entire trip?



References:

<http://home.earthlink.net/~flieds/images/roadtrip.gif>

<http://stephen.geek.nz/images/70MPH.gif>