March 05, 2020

6.1 Adding and Subtracting Rational Expressions - Day2 -

Just like Adding/Subtracting Fractions.....

We better remember how to do this!!!

Ex. $\frac{6}{16} - \frac{1}{10}$

$\frac{10}{10}\cdot\frac{3}{8} - \frac{1}{10}\cdot\frac{8}{8}$

$\frac{30}{80} - \frac{8}{80}$

$\frac{22}{80} \rightsquigarrow \boxed{\frac{11}{40}}$

STEPS to ANY problem!

1. Factor and state restrictions.
2. Simplify each fraction if you can.
3. Get a common denominator.
4. Add/Subtract the numerators.
5. Simplify again if you can.

Problem 2 **Adding Rational Expressions**

What is the sum of the two rational expressions in simplest form? State any restrictions on the variable.

$\frac{y}{y}\cdot\frac{5}{4xy} + \frac{3}{y^2}\cdot\frac{4x}{4x}$

$\frac{5y}{4xy^2} + \frac{12x}{4xy^2}$

$\boxed{\frac{5y+12x}{4xy^2}}$

$x, y \neq 0$

Problem 2 Adding Rational Expressions

What is the sum of the two rational expressions in simplest form? State any restrictions on the variable. $\frac{x}{x-1} + \frac{2x-1}{x^2-3x+2}$

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

$x \neq 1, 2$

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

$= \frac{x^2-1}{(x-2)(x-1)}$ Factor! $= \frac{(x+1)(x-1)}{(x-2)(x-1)}$

$= \boxed{\frac{x+1}{x-2}}$

Problem 3 Subtracting Rational Expressions

What is the difference of the two rational expressions in simplest form? State any restrictions on the variable.

$\frac{x-1}{x+5} - \frac{x+3}{x^2+6x+5}$

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

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

$= \boxed{\frac{x^2-x-4}{(x+1)(x+5)}}$

$x \neq -1, -5$