Adding and Subtracting Rational Expressions

Same Denominators

$$\frac{2}{15}+\frac{7}{15}$$

Step 1: Add or subtract the numerators and write as one fraction.
Step 2: Factor numerator and denominator completely.
Step 3: Cancel common factors.

1. Add or subtract the rational expressions.

a) $\frac{5}{6x}+\frac{11}{6x}$

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

c) $\frac{x^2}{x+3}+\frac{3x}{x+3}$

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

e) $\frac{x^2-4x}{x^2-9}-\frac{3x-12}{x^2-9}$

<u>Different Denominators</u>

$\frac{2}{7}-\frac{3}{8}$

Step 1: Find the LCD and multiply each fraction by what is missing in the LCD.
Step 2: Add or subtract the numerators and write as one fraction.
Step 3: Factor numerator and denominator completely.
Step 4: Cancel common factors.

2. Add or subtract the rational expressions.

a) $\frac{2}{x}+\frac{3}{5x}$

b) $\frac{5}{a}+\frac{3}{a+1}$

c) $\frac{2y}{y+3}+\frac{y-1}{y-4}$

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

e) $\frac{2}{x-5}-\frac{5x-3}{x^2+x-30}$