5-2 Adding and Subtracting Rational Expressions Notes

When adding or subtracting fractions, you must have a _____.

To find a _____ , you must find the _____

Follow these steps to find a common denominator:

1. _____ each denominator in the problem
2. Here is what to do with each "broken down" denominator:
   - Monomial denominators – write the factor that's written the greatest number of times
   - Binomial denominators – write repeated factors once, write different factors automatically
   - Denominators of complex fractions – multiply all terms by LCM of the denominators

Example 1: Find the LCM of each set of polynomials.

a. $12ab^2$ and $6a^2b$	b. $18x^2y^3z$ and $24x^3y$	c. $x^2 + x - 12$ and $x + 4$	d. $x^2 + 5x + 6$ and $x^2 + 3x$

Example 2: Add or subtract each set of rational expressions. Simplify answers completely.

a. $\frac{2x}{15y^2} + \frac{y}{10xy}$	b. $\frac{x}{x^2-x-20} + \frac{2}{x+4}$

c. $\frac{x}{x^2-4} - \frac{2}{3x+6}$

d. $\frac{x+12}{4x-16} - \frac{x+4}{2x-8}$

e. $\frac{3}{3x+6} + 2$

f. $\frac{x-3}{2x-6} - \frac{x-6}{2x}$

g. $\frac{\frac{a}{b} - \frac{b}{a}}{\frac{1}{b} + \frac{1}{a}}$

h. $\frac{\frac{3}{x} - \frac{1}{2}}{\frac{1}{3} - \frac{2}{x}}$