

Adding and Subtracting Rational Expressions—Part 2

When adding or subtracting fractions that have **different** denominators, one must find the least common denominator (**LCD**) before adding or subtracting the fractions.

Process to find the LCD:

1. Factor each denominator.
2. Write down **one** of every kind of factor.
3. Raise each factor to its highest power.

Find the LCD:

$$\frac{5}{a^2b^3c} - \frac{7}{ab^4c^5d}$$

$$\frac{5}{6x^3y} + \frac{7}{4x^2y^5}$$

Perform the indicated operations and reduce to lowest terms:

1. $\frac{5}{x^3} - \frac{1}{8x}$

2. $\frac{3}{x-1} + \frac{6}{x+4}$

1. Find the LCD
2. Re-write each fraction with the LCD
3. Collect like terms of numerators
4. Reduce, if possible.

3. $\frac{3x+1}{x+3} - \frac{x-4}{3x-4}$

4. $\frac{2x-7}{x^2+3x-4} + \frac{x+31}{x^2-x-20}$

5. $\frac{3x-2}{2x^2-9x+10} - \frac{x+6}{x^2-6x+8}$