

Adding and Subtracting Rational Expressions

 Guide Notes

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Addition of fraction depends on the kinds of denominator the fraction have.

1. To add two fractions with the same denominator, use $\frac{a}{b} + \frac{b}{c} = \frac{a+b}{c}$.

2. To add two fraction with different denominators, use $\frac{a}{b} + \frac{c}{d} = \frac{ad+bc}{bd}$.

Least Common Denominator

The **least common denominator**, or simply LCD, of a set fraction is the least common multiple of the denominators of the given fractions.

Sample Problem 1: Add or subtract the following rational expressions with the same denominator.

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

2. $\frac{5}{24x} - \frac{7}{24x}$

3. $\frac{5x+7}{2x+2} - \frac{3x-1}{2x+2}$

4. $\frac{3x+17}{x+5} + \frac{x+7}{x+5}$

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Sample Problem 2: Add or subtract the rational expressions with different denominator.

5. $\frac{7}{6xy^2} + \frac{2}{15x^2y}$

6. $\frac{5}{v+4} - \frac{4}{v-5}$

7. $\frac{3y}{y+1} + \frac{2y}{y-1}$

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