

Adding and Subtracting Rational Expressions:

- I can find the lowest common denominator (LCD) of a monomial
- I can find the LCD with a polynomial using factoring.
- I can add and subtract rational expressions by creating a LCD.
- I can simplify complex fractions using LCD's

**Find the LCM of each monomial expression.**

1)  $12c, 6c^2d$

2)  $18a^3bc^2, 24b^2c^2$

**Find the LCM of each polynomial expression.**

3)  $2x - 6, x - 3$

4)  $x^2 - 16, x - 4$

5)  $x^2 + 6x + 8, x^2 - x - 6$

6)  $x + 1, x - 1$

7)  $x^2 - 3x - 4, x + 1$

**Simplify each expression. (Like Denominators)**

8)  $\frac{x+5y}{24x} + \frac{x+6y}{24x}$

9)  $\frac{x+y}{6x^3} - \frac{2x}{6x^3}$

10)  $\frac{k-2}{k-1} + \frac{3k+5}{k-1}$

11)  $\frac{x+3}{x+16} - \frac{3x}{x+16}$

**Simplify each expression. (Unlike Denominators)**

12)  $\frac{3}{6b^2} + \frac{4a}{5a}$

13)  $\frac{a-5b}{2a} - \frac{6a}{2a^2b}$

14)  $\frac{4x}{5xy} - \frac{6x}{3xy^2}$

15)  $\frac{2x}{5y^2} - \frac{5x}{5}$

**Simplify each expression.**

16)  $\frac{p-1}{2p+6} - \frac{3}{2}$

17)  $\frac{3}{2n} - \frac{4}{2n+4}$

18)  $\frac{4n}{3n} + \frac{6}{3n^2 - 9n}$

19)  $\frac{6}{m+4} + \frac{2m}{m-2}$

20)  $\frac{7}{3n-9} + \frac{n+4}{n^2-9}$

21)  $\frac{4x}{x^2+9x+18} + \frac{5}{x+6}$

22)  $\frac{8}{y-3} + \frac{2y-5}{y^2-12y+27}$

23)  $\frac{4}{3x+6} - \frac{x+1}{x^2-4}$

**SIMPLIFYING COMPLEX FRACTIONS**

A complex fraction is a fraction that contains a fraction in its \_\_\_\_\_.

**Method 1:** If necessary, simplify the numerator and denominator by \_\_\_\_\_. Then divide the numerator by the denominator.

**Method 2:** Multiply the numerator and the denominator by the \_\_\_\_\_ of every fraction in the numerator and denominator. Then simplify.

Simplify each expression. (Complex Fractions)

24)  $\frac{\frac{4}{x}}{\frac{3}{4} + \frac{x^2}{16}}$

25)  $\frac{\frac{2}{u^2}}{\frac{2}{3} - \frac{9}{2}}$

26)  $\frac{\frac{3}{m-3} + \frac{3}{2}}{\frac{m-3}{4}}$

27)  $\frac{\frac{4}{x+5} - \frac{25}{2x+10}}{\frac{3}{5} - \frac{6}{25}}$