

Find the LCD for each (but do not actually add or subtract.)

1. $\frac{1}{2} + \frac{1}{3} + \frac{1}{6}$

2. $\frac{1}{a} + \frac{1}{b} + \frac{1}{ab}$

3. $\frac{1}{x} + \frac{1}{2x} + \frac{1}{3}$

4. $\frac{1}{x} + \frac{3}{2x} + \frac{5}{x+4}$

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

6. $\frac{1}{x} - \frac{1}{x^2-4} + \frac{1}{x^2-6x+8}$

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

8. $\frac{1}{2x} + \frac{1}{4} + \frac{1}{2x+4}$

Simplify:

9.

$$\frac{3x^2yz}{4yz^2} \cdot \frac{5xy^2z}{x^4y}$$

10.

$$\frac{3x^2-15x}{3x} \cdot \frac{2x^2-10x}{x^2-10x+25}$$

11.

$$\frac{x^2}{x^2-1} \div \frac{3x^2-x}{3x^2-4x+1}$$

12.

$$\frac{16x}{4x-8} \div \frac{x^2}{x^2-4} \cdot \frac{x+6}{8}$$

Add or subtract, then simplify:

13.

$$\frac{3x}{x^2 + 3x - 10} - \frac{2}{x + 5}$$

14.

$$\frac{x + 1}{3x - 9} + \frac{5}{x^2 - 5x + 6}$$

15.

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

16.

$$\frac{\frac{1}{2} + \frac{2}{x - 6}}{\frac{3x - 6}{x^2 - 12x + 36}}$$

Solve:

17.

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

18.

$$\frac{4}{x + 4} - \frac{1}{x - 2} = \frac{12}{x^2 + 2x - 8}$$