

9-1

Practice

Adding and Subtracting Rational Expressions

Find the least common multiple of each pair of polynomials.

1. $3x(x + 2)$ and $6x(2x - 3)$

2. $2x^2 - 8x + 8$ and $3x^2 + 27x - 30$

3. $4x^2 + 12x + 9$ and $4x^2 - 9$

4. $2x^2 - 18$ and $5x^3 + 30x^2 + 45x$

Simplify each sum or difference. State any restrictions on the variables.

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

6. $\frac{6y - 4}{y^2 - 5} + \frac{3y + 1}{y^2 - 5}$

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

8. $\frac{12}{xy^3} - \frac{9}{xy^3}$

9. $-\frac{2}{n + 4} - \frac{n^2}{n^2 - 16}$

10. $\frac{3}{8x^3y^3} - \frac{1}{4xy}$

11. $\frac{6}{5x^2y} + \frac{5}{10xy^2}$

12. $\frac{x + 2}{x^2 + 4x + 4} + \frac{2}{x + 2}$

13. $\frac{4}{x^2 - 25} + \frac{6}{x^2 + 6x + 5}$

14. $\frac{y}{4y + 8} - \frac{1}{y^2 + 2y}$

Simplify each complex fraction.

15. $\frac{\frac{2}{x}}{\frac{3}{y}}$

16. $\frac{1 + \frac{2}{3}}{\frac{4}{9}}$

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

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

19. $\frac{\frac{x+3}{x-3}}{\frac{x^2-9}{3x-9}}$

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