

**2.3 Addition and Subtraction of
Rational Expressions**

Name _____

Perform the indicated operation and simplify.

1. $\frac{2x-7}{3} + \frac{4}{3}$

2. $\frac{3x}{10} + \frac{2x}{10}$

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

4. $\frac{4x-14}{x-6} + \frac{x-16}{x-6}$

5. $\frac{3x-10}{x^2-x} + \frac{4x+3}{x^2-x}$

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

Answers: 1. $\frac{2x-3}{3}$; 3. 2; 5. $\frac{7}{x}$

Perform the indicated operation and simplify.

7. $\frac{4x+7}{6} - \frac{1}{6}$

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

9. $\frac{4x-5}{3y} - \frac{x+4}{3y}$

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

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

12. $\frac{3x-7}{x^2-9} + \frac{x-1}{9-x^2}$

Answers: 7. $\frac{2x+3}{3}$; 9. $\frac{x-3}{y}$; 11. $-\frac{7}{x^2-4}$

Find the least common multiple of each set of expressions.

13. $\text{LCM}(9, 15, 5) =$

14. $\text{LCM}(27, 35, 63) =$

15. $\text{LCM}(12x^2y, 4xy) =$

16. $\text{LCM}(15ab^2, 3ab) =$

17. $\text{LCM}(5y - 15, y^2 - 6y + 9) =$

18. $\text{LCM}(8x + 16, x^2 + 10x + 16) =$

Answers: **13.** 45; **15.** $12x^2y$; **17.** $5(y-3)^2$

Perform the indicated operation and simplify.

19. $\frac{2}{x} + \frac{3}{y}$

20. $\frac{5}{12x^2} - \frac{3}{8xy^2}$

21. $\frac{x+1}{x-1} - 1$

22. $2 - \frac{x-1}{x+1}$

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

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

Answers: 19. $\frac{2y+3x}{xy}$; 21. $\frac{2}{x-1}$; 23. $\frac{-3x+22}{(x+2)(x-5)}$

Perform the indicated operation and simplify.

25.

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

26.

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

27.

$$\frac{x+1}{x^2 + 5x - 14} - \frac{x+3}{x^2 + 8x + 7}$$

28.

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

Answers: 25. $\frac{7x-15}{(x-3)^2}$; 27. $\frac{1}{(x-2)(x+1)}$