

7.4**Extra Practice**

In Exercises 1–4, find the sum or difference.

1. $\frac{1}{x-1} - \frac{5}{x-1}$

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

3. $\frac{6x}{x+4} + \frac{24}{x+4}$

4. $\frac{2x^2}{x-7} - \frac{14x}{x-7}$

In Exercises 5–7, find the least common multiple of the expressions.

5. $9x^3, 3x^2 - 21x$

6. $x + 5, 2x^2 + 11x + 5$

7. $x^2 + 5x + 6, x^2 - 3x - 18$

In Exercises 8–13, find the sum or difference.

8. $\frac{3}{2x} + \frac{11}{5x}$

9. $\frac{15}{x-2} + \frac{3}{x+8}$

10. $\frac{3}{x^2 + 5x - 24} - \frac{10}{x-3}$

11. $\frac{3x}{2x+1} + \frac{10}{2x^2 - 5x - 3}$

12. $\frac{x}{x-7} - \frac{2}{x+1} - \frac{8x}{x^2 - 6x - 7}$

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

In Exercises 14 and 15, simplify the complex fraction.

14. $\frac{\frac{x}{10} - 3}{5 + \frac{1}{x}}$

15. $\frac{\frac{12}{x^2 - 7x - 44}}{\frac{2}{x-11} + \frac{1}{x+4}}$

16. Find the value of b that completes the equation.

$$\frac{x-60}{(x+5)(x-8)} = \frac{b}{(x+5)} - \frac{4}{(x-8)}$$

7.5

Extra Practice

In Exercises 1–4, solve the equation by cross multiplying. Check your solution(s).

$$1. \frac{2}{x+8} = \frac{5}{2x-7} \quad 2. \frac{x}{x+1} = \frac{-4}{x} \quad 3. \frac{x+1}{x-3} = \frac{x+2}{x-6} \quad 4. \frac{-2}{x-3} = \frac{x+9}{x+21}$$

In Exercises 5–12, solve the equation by using the LCD. Check your solution(s).

$$5. \frac{4}{7} - \frac{1}{x} = 6$$

$$6. \frac{3}{x+1} + \frac{4}{x+2} = \frac{15}{x+2}$$

$$7. \frac{12}{x+4} - \frac{7}{x} = \frac{22}{x^2+4x}$$

$$8. 3 - \frac{18}{x-1} = \frac{12}{x}$$

$$9. \frac{2}{x-5} + \frac{3}{x} = \frac{10}{x^2-5x}$$

$$10. \frac{x+6}{x-4} - \frac{30}{x^2-5x+4} = \frac{3}{x-1}$$

$$11. \frac{x}{x-5} + \frac{2}{x+2} = \frac{11}{x^2-3x-10}$$

$$12. \frac{x-2}{x-4} - \frac{2}{x-1} = \frac{12}{x^2-5x+4}$$

13. You can complete yard work at your friend's home in 5 hours. Working together, you and your friend can complete the yard work in 3 hours.

- a. Let t be the time (in hours) your friend takes to complete the yard work when working alone. Complete the table.
(Hint: (Work done) = (Work rate) \times (Time))

	Work rate	Time	Work done
You	$\frac{1 \text{ yard}}{5 \text{ hours}}$	3 hours	
Friend		3 hours	

- b. Explain what the sum of the expressions represents in the last column. Write and solve an equation to find how long it takes your friend to complete the yard work working alone.

14. The function $c = \frac{0.1x + 270}{x}$ represents the average cost (in dollars) of printing x invitations on a printer. Find how many invitations you must print for the average cost per invitation to fall to \$1 by (i) solving an equation, and (ii) using the inverse of the function.