

# 11-5 Practice

## Solving Rational Equations

Form K

Solve each equation. Check your solutions. If there is no solution, write *no solution*.

1.  $\frac{3}{3+a} + 5 = \frac{8}{3+a}$

2.  $\frac{6}{x-4} - 2 = \frac{8}{x-4}$

3.  $\frac{7}{h-5} + \frac{1}{2} = \frac{6}{h-5}$

4.  $\frac{9}{f+9} + 4 = \frac{f}{f+9}$

5.  $\frac{8}{x+1} - 10 = \frac{4}{x} - 10$

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

7.  $\frac{5}{z-2} = \frac{3}{2+z}$

8.  $\frac{t}{t+1} = \frac{4}{t+1}$

9. It takes Frank about 45 minutes to mow a yard and Paul about 38 minutes to mow a yard. How much time does it take them to mow a yard together?

10. Sam can wash 8 cars in 1 hour. Shelly can wash 6 cars in 1 hour. How much time does it take them to wash 70 cars if they work together?

Solve each equation. Check your solutions. If there is no solution, write *no solution*.

11.  $\frac{1}{v} = \frac{2}{v^2} + \frac{1}{9}$  □

12.  $\frac{1}{n-1} + \frac{n}{n+3} = \frac{4}{n^2 + 2n - 3}$

13.  $1 + \frac{4}{3k+12} = \frac{2k}{k+4}$

14.  $\frac{2x}{3x^2 - 4x - 4} + \frac{3+x}{2x-4} = \frac{-x}{3x+2}$

# 11-5 Practice (Continued)

## Solving Rational Equations

From K

15. It takes Jeremy 4 hours to clean an auditorium, Cheryl 5 hours, and Gerald 8 hours. If all three of them work together, how long will it take them to clean the auditorium?
16. Shannon and Bruce are library workers. It takes Shannon 75 minutes to shelve a cart of books. It takes Bruce  $3x$  min to shelve a cart of books.  
If they work on shelving a cart of books together, it will take them 30 min to complete it.
- Write an equation for this problem.
  - Solve for  $x$ .
  - How long does it take Bruce to shelve a cart of books?
17. **Error Analysis** A student solved the rational equation  $\frac{9x}{x(x+3)} - \frac{12x}{6x} = 6\left(\frac{1}{2}\right)$  and found  $x = 1.2$ . What was her mistake?
18. **Open-Ended** Write a rational equation that has  $x = 2$  as a solution.

Solve each equation. Check your solutions.

19.  $\frac{2}{t-1} = \frac{3}{t+1}$

20.  $\frac{1}{x^2-25} - \frac{3}{x+5} = \frac{5}{x-5}$