

9-6

## Skills Practice

## Solving Rational Equations and Inequalities

Solve each equation or inequality. Check your solutions.

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

2.  $2 = \frac{4}{n} + \frac{1}{3}$   $\frac{12}{5}$

3.  $\frac{9}{3x} = \frac{-6}{2}$  -1

4.  $3 - z = \frac{2}{z}$  1, 2

5.  $\frac{2}{d+1} = \frac{1}{d-2}$  5

6.  $\frac{s-3}{5} = \frac{8}{s}$  -5, 8

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

8.  $-\frac{12}{y} = y - 7$  3, 4

9.  $\frac{x-2}{x+4} = \frac{x+1}{x+10}$  8

10.  $\frac{3}{k} - \frac{4}{3k} > 0$   $k > 0$

11.  $2 - \frac{3}{v} < \frac{5}{v}$   $0 < v < 4$

12.  $n + \frac{3}{n} < \frac{12}{n}$   $n < -3$  or  $0 < n < 3$

13.  $\frac{1}{2m} - \frac{3}{m} < -\frac{5}{2}$   $0 < m < 1$

14.  $\frac{1}{2x} < \frac{2}{x} - 1$   $0 < x < \frac{3}{2}$

15.  $\frac{15}{x} + \frac{9x-7}{x+2} = 9$  3

16.  $\frac{3b-2}{b+1} = 4 - \frac{b+2}{b-1}$  4

17.  $2 = \frac{5}{2q} + \frac{2q}{q+1}$  -5

18.  $8 - \frac{4}{z} = \frac{8z-8}{z+2}$   $\frac{2}{5}$

19.  $\frac{1}{n+3} + \frac{5}{n^2-9} = \frac{2}{n-3}$  -4

20.  $\frac{1}{w+2} + \frac{1}{w-2} = \frac{4}{w^2-4}$   $\emptyset$

21.  $\frac{x-8}{2x+2} + \frac{x}{2x+2} = \frac{2x-3}{x+1}$   $\emptyset$

22.  $\frac{12s+19}{s^2+7s+12} - \frac{3}{s+3} = \frac{5}{s+4}$  2

23.  $\frac{2e}{e^2-4} + \frac{1}{e-2} = \frac{2}{e+2}$  -6

24.  $\frac{8}{t^2-9} + \frac{4}{t+3} = \frac{2}{t-3}$  5