

**8-6****Practice**

Form G

**Solving Rational Equations****Solve each equation. Check each solution.**

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

3.  $-\frac{4}{x+1} = \frac{5}{3x+1}$

5.  $\frac{3x}{4} = \frac{5x+1}{3}$

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

9.  $\frac{2y}{5} + \frac{2}{6} = \frac{y}{2} - \frac{1}{6}$

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

**Use a graphing calculator to solve each equation. Check each solution.**

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

15.  $\frac{4}{x+3} = \frac{10}{2x-1}$

17.  $\frac{3y}{5} + \frac{1}{2} = \frac{y}{10}$

19.  $\frac{2}{3} + \frac{3x-1}{6} = \frac{5}{2}$

21.  $\frac{1}{x} - \frac{2}{x+3} = 0$

**Solve each equation for the given variable.**

23.  $\frac{1}{f} = \frac{1}{d_i} = \frac{1}{d_o}; d_o$

25.  $m = \frac{y_2 - y_1}{x_2 - x_1}; x_1$

27.  $\frac{S - 2wh}{2w + 2h} = \ell; S$

**Solving Rational Equations**

29. A fountain has two drainage valves. With the first valve open, the fountain drains completely in 4 h. With only the second valve open, the fountain drains completely in 5.25 h. About how many hours will the fountain take to drain with both valves open? Round your answer to the nearest tenth.

31. **Error Analysis** Describe and correct the error made in solving the equation.

$$\begin{aligned}
 & \frac{2x-1}{x+3} = \frac{x^2+7x+5}{x+3} \\
 (x+3) \left( \frac{2x-1}{x+3} \right) &= \left( \frac{x^2+7x+5}{x+3} \right) (x+3) \\
 2x-1 &= x^2+7x+5 \\
 x^2+5x+6 &= 0 \\
 (x+2)(x+3) &= 0 \\
 x &= -2 \text{ or } x = -3
 \end{aligned}$$