

## Chapter 8 Prerequisite Skills

- What are the slope and  $y$ -intercept of each line?
  - $y = -3x + 4$
  - $y = \frac{2}{5}x - \frac{1}{3}$
  - $3x - 2y = 7$
  - $4.2 - 2y = 3.6x$
- Write the equation of each line, using the given information.
  - passing through  $(-3, 1)$  with slope,  $m = -2$
  - passing through  $(3, -4)$  and perpendicular to  $y = \frac{3}{2}x - 7$
- Write a system of linear equations to model each situation.
  - The sum of two numbers is 752 and their difference is 174.
  - The total number of adult and youth tickets for a play is 256. Adult tickets cost \$5 each, and youth tickets cost \$3 each. The total sales for one performance were \$767.
  - A newspaper box contains quarters and loonies. The total number of coins is 73. The total value of the coins is \$37.
  - The membership fee at one dance club is \$75 for the first year, plus \$15 per month. The fee at another dance club is \$35 per month.
- Predict the number of solutions for each system of linear equations. Explain how you made your prediction.
  - $y = 2x - 3$   
 $y = 2x + 1$
  - $y = 3x + 10$   
 $2y = 6x + 20$
  - $2x + 3y - 6 = 0$   
 $14x + 21y - 42 = 0$
  - $2x - y - 10 = 0$   
 $4x - y - 30 = 0$
- Solve each system of linear equations by graphing. Express answers to the nearest tenth.
  - $y = -2x - 6$   
 $y = 2x + 8$
  - $x - y = 1$   
 $5x - 4y = 12$
  - $y = \frac{2}{5}x - 7$   
 $y = -\frac{5}{8}x + 2$
  - $6x + 5y = -45$   
 $2x + 5y = 40$
- Solve each linear system by substitution.
  - $y = 3x - 1$   
 $x + y = 11$
  - $2 + y = 3x$   
 $6x - 5y = 8$
  - $0.1y = 0.3x - 1.5$   
 $x - 0.2y = 5.6$
  - $2x = 6y + 9$   
 $y - 2x = -4$
- Solve each linear system using the elimination method.
  - $x - y = 17$   
 $x + y = -9$
  - $\frac{y}{2} = 2x - 3$   
 $3x + 2y = \frac{9}{2}$
  - $3x + 2y = 10$   
 $2x - y = 4$
  - $x + 7 = y$   
 $2x + y = -8$

