Chapter 4 Practice Test from the book

For Exercises 1–9, if a system has an infinite number of solutions, use set-builder notation to write the solution set. If a system has no solution, state this.

Solve by graphing.

1. $2x + y = 8,$
$\quad y - x = 2$

2. $2y - x = 7,$
$\quad 2x - 4y = 4$

Solve using the substitution method.

3. $x + 3y = -8,$
$\quad 4x - 3y = 23$

4. $2x + 4y = -6,$
$\quad y = 3x - 9$

5. $x = 5y - 10,$
$\quad 15y = 3x + 30$

Solve using the elimination method.

6. $3x - y = 7,$
$\quad x + y = 1$

7. $4y + 2x = 18,$
$\quad 3x + 6y = 26$

8. $4x - 6y = 3,$
$\quad 6x - 4y = -3$

9. $4x + 5y = 5,$
$\quad 6x + 7y = 7$

Solve.

10. *Perimeter of a Garden.* Hassam is designing a rectangular garden with a perimeter of 66 ft. The length of the garden is 1 ft longer than three times the width. Find the dimensions of the garden.
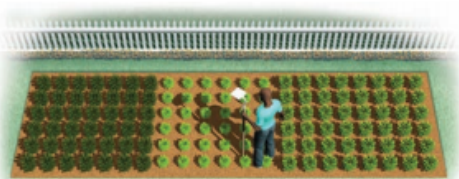
11. *Geometry.* Two angles are complementary. The sum of the measures of the first angle and half the second angle is 64°. Find the measures of the angles.
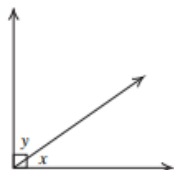
Complementary angles

12. In 2007, Nintendo Co. sold three times as many Wii game machines in Japan as Sony Corp. sold PlayStation 3 consoles. Together, they sold 4.84 million game machines in Japan. How many of each were sold?
Source: Bloomberg.com

13. *Books.* The Friends of the Greenfield Public Library charge $1.75 for used hardbacks and 75¢ for used paperbacks. Keith purchased a total of 23 books for $28.25. How many books of each type did he buy?

14. Pepperidge Farm® Goldfish is a snack food for which 40% of its calories come from fat. Rold Gold® Pretzels receive 9% of their calories from fat. How many grams of each would be needed to make 620 g of a snack mix for which 15% of the calories are from fat?

15. *Boating.* Kylie's motorboat took 3 hr to make a trip downstream on a river flowing at 5 mph. The return trip against the same current took 5 hr. Find the speed of the boat in still water.

16. *Coin Value.* A collection of quarters and nickels is worth $1.25. There are 13 coins in all. How many of each are there?

17. Solve graphically: $2x - 5 = 3x - 3$.

18. Determine any zeros of the function given by $f(x) = \frac{1}{2}x - 5$.

SYNTHESIS

Skip synthesis problems

Answers

Test: Chapter 4, p. 284

1. [4.1] $(2, 4)$ **2.** [4.1] No solution   **3.** [4.2] $\left(3, -\frac{11}{3}\right)$
4. [4.2] $\left(\frac{15}{7}, -\frac{18}{7}\right)$ **5.** [4.2] $\{(x, y)\,|\,x = 5y - 10\}$
6. [4.3] $(2, -1)$ **7.** [4.3] No solution   **8.** [4.3] $\left(-\frac{3}{2}, -\frac{3}{2}\right)$
9. [4.3] $(0, 1)$ **10.** [4.2] Length: 25 ft; width: 8 ft
11. [4.2] $38°, 52°$ **12.** [4.2] Wii game machines: 3.63 million;
PlayStation 3 consoles: 1.21 million   **13.** [4.4] Hardbacks: 11;
paperbacks: 12   **14.** [4.4] Pepperidge Farm Goldfish: 120 g; Rold
Gold Pretzels: 500 g   **15.** [4.4] 20 mph   **16.** [4.4] Nickels: 10;
quarters: 3   **17.** [4.5] -2 **18.** [4.5] 10   **19.** [4.2] $(2, 0)$
20. [4.3] $(12, -6)$ **21.** [4.4] 9 people
22. [3.8], [4.3] $m = 7, b = 10$