

## 6

## CHAPTER TEST

Solve the linear system by graphing. Check your solution.

1.  $3x - y = -6$   
 $x + y = 2$

2.  $-2x + y = 5$   
 $x + y = -1$

3.  $y = 4x + 4$   
 $3x + 2y = 12$

4.  $5x - 4y = 20$   
 $x + 2y = 4$

5.  $x + 3y = 9$   
 $2x - y = 4$

6.  $2x + 7y = 14$   
 $5x + 7y = -7$

Solve the linear system using substitution.

7.  $y = 5x - 7$   
 $-4x + y = -1$

8.  $x = y - 11$   
 $x - 3y = 1$

9.  $3x + y = -19$   
 $x - y = 7$

10.  $15x + y = 70$   
 $3x - 2y = -8$

11.  $3y + x = 17$   
 $x + y = 8$

12.  $0.5x + y = 9$   
 $1.6x + 0.2y = 13$

Solve the linear system using elimination.

13.  $8x + 3y = -9$   
 $-8x + y = 29$

14.  $x - 5y = -3$   
 $3x - 5y = 11$

15.  $4x + y = 17$   
 $7y = 4x - 9$

16.  $3x + 2y = -5$   
 $x - y = 10$

17.  $3y = x + 5$   
 $-3x + 8y = 8$

18.  $6x - 5y = 9$   
 $9x - 7y = 15$

Tell whether the linear system has *one solution*, *no solution*, or *infinitely many solutions*.

19.  $15x - 3y = 12$   
 $y = 5x - 4$

20.  $4x - y = -4$   
 $-8x + 2y = 2$

21.  $-12x + 3y = 18$   
 $4x + y = -6$

22.  $6x - 7y = 5$   
 $-12x + 14y = 10$

23.  $3x - 4y = 24$   
 $3x + 4y = 24$

24.  $10x - 2y = 14$   
 $15x - 3y = 21$


Graph the system of linear inequalities.

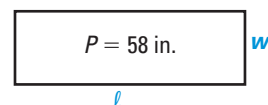
25.  $y < 2x + 2$   
 $y \geq -x - 1$

26.  $y \leq 3x - 2$   
 $y > x + 4$

27.  $y \leq 3$   
 $x > -1$   
 $y > 3x - 3$

28. **TRUCK RENTALS** Carrie and Dave each rent the same size moving truck for one day. They pay a fee of  $x$  dollars for the truck and  $y$  dollars per mile they drive. Carrie drives 150 miles and pays \$215. Dave drives 120 miles and pays \$176. Find the amount of the fee and the cost per mile.

29.  **GEOMETRY** The rectangle has a perimeter  $P$  of 58 inches. The length  $\ell$  is one more than 3 times the width  $w$ . Write and solve a system of linear equations to find the length and width of the rectangle.



30. **COMMUNITY SERVICE** A town committee has a budget of \$75 to spend on snacks for the volunteers participating in a clean-up day. The committee chairperson decides to purchase granola bars and at least 50 bottles of water. Granola bars cost \$.50 each, and bottles of water cost \$.75 each. Write and graph a system of linear inequalities for the number of bottles of water and the number of granola bars that can be purchased.