Solve each system of equations.

1. $-4x + y = -5$
   $2x + y = 7$

2. $x + y = -8$
   $-3x + 2y = 9$

3. $3x + 2y = 18$
   $y = 6x - 6$

4. $-6x + 3y = 33$
   $-4x + y = 16$

5. $-7x + 6y = 42$
   $3x + 4y = 28$

6. $2y = 5x - 1$
   $x + y = -1$

Solve each system of inequalities by graphing.

7. $y \geq x - 3$
   $y \geq -x + 1$

8. $x + 2y \geq 7$
   $3x - 4y < 12$

9. $3x + y < -5$
   $2x - 4y \geq 6$

10. $2x + y \geq 7$
    $3y \leq 4x + 1$

Graph each system of inequalities. Name the coordinates of the vertices of the feasible region. Find the maximum and the minimum values of the given function.

11. $5 \geq y \geq -3$
    $4x + y \leq 5$
    $-2x + y \leq 5$
    $f(x, y) = 4x - 3y$

12. $x \geq -10$
    $1 \geq y \geq -6$
    $3x + 4y \leq -8$
    $2y \geq x - 10$
    $f(x, y) = 2x + y$

13. **MULTIPLE CHOICE** Which statement best describes the graphs of the two equations?

$$16x - 2y = 24$$
$$12x = 3y - 36$$

   A The lines are parallel.

   B The lines are the same.

   C The lines intersect in only one point.

   D The lines intersect in more than one point, but are not the same.

Solve each system of equations.

14. $x + y + z = -1$
    $2x + 4y + z = 1$
    $x + 2y - 3z = -3$

15. $x + z = 7$
    $2y - z = -3$
    $-x - 3y + 2z = 11$

16. **MULTIPLE CHOICE** Carla, Meiko, and Kayla went shopping to get ready for college. Their purchases and total amounts spent are shown in the table below.

Person	Shirts	Pants	Shoes	Total Spent
Carla	3	4	2	$149.79
Meiko	5	3	3	$183.19
Kayla	6	5	1	$181.14

Assume that all of the shirts were the same price, all of the pants were the same price, and all of the shoes were the same price. What was the price of each item?

   F shirt, $12.95; pants, $15.99; shoes, $23.49

   G shirt, $15.99; pants, $12.95; shoes, $23.49

   H shirt, $15.99; pants, $23.49; shoes, $12.95

   J shirt, $23.49; pants, $15.99; shoes, $12.95

MANUFACTURING For Exercises 17–19, use the following information.
A sporting goods manufacturer makes a $5 profit on soccer balls and a $4 profit on volleyballs. Cutting requires 2 hours to make 75 soccer balls and 3 hours to make 60 volleyballs. Sewing needs 3 hours to make 75 soccer balls and 2 hours to make 60 volleyballs. The cutting department has 500 hours available, and the sewing department has 450 hours available.

17. How many soccer balls and volleyballs should be made to maximize the company's profit?

18. What is the maximum profit the company can make from these two products?

19. What would the maximum profit be if Cutting and Sewing got new equipment that allowed them to produce soccer balls at the same rate, but allowed Cutting to produce 75 volleyballs in 3 hours and Sewing to make 75 volleyballs in 2 hours?