



Examples 1–3 Use substitution to solve each system of equations.

1. $y = x + 5$
 $3x + y = 25$

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

3. $3x + y = 6$
 $4x + 2y = 8$

4. $2x + 3y = 4$
 $4x + 6y = 9$

5. $x - y = 1$
 $3x = 3y + 3$

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

Example 4

7. **GEOMETRY** The sum of the measures of angles X and Y is 180° . The measure of angle X is 24° greater than the measure of angle Y.

- Define the variables, and write equations for this situation.
- Find the measure of each angle.

Practice and Problem Solving

Extra Practice is on page R6.

Examples 1–3 Use substitution to solve each system of equations.

8. $y = 5x + 1$
 $4x + y = 10$

9. $y = 4x + 5$
 $2x + y = 17$

10. $y = 3x - 34$
 $y = 2x - 5$

11. $y = 3x - 2$
 $y = 2x - 5$

12. $2x + y = 3$
 $4x + 4y = 8$

13. $3x + 4y = -3$
 $x + 2y = -1$

14. $y = -3x + 4$
 $-6x - 2y = -8$

15. $-1 = 2x - y$
 $8x - 4y = -4$

16. $x = y - 1$
 $-x + y = -1$

17. $y = -4x + 11$
 $3x + y = 9$

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

19. $3x + y = -5$
 $6x + 2y = 10$

20. $5x - y = 5$
 $-x + 3y = 13$

21. $2x + y = 4$
 $-2x + y = -4$

22. $-5x + 4y = 20$
 $10x - 8y = -40$

Example 4

23. **ECONOMICS** In 2000, the demand for nurses was 2,000,000, while the supply was only 1,890,000. The projected demand for nurses in 2020 is 2,810,414, while the supply is only projected to be 2,001,998.

- Define the variables, and write equations to represent these situations.
- Use substitution to determine during which year the supply of nurses was equal to the demand.

24. **CCSS REASONING** The table shows the approximate number of tourists in two areas of the world during a recent year and the average rates of change in tourism.

Destination	Number of Tourists	Average Rates of Change in Tourists (millions per year)
South America and the Caribbean	40.3 million	increase of 0.8
Middle East	17.0 million	increase of 1.8

- Define the variables, and write an equation for each region's tourism rate.
- If the trends continue, in how many years would you expect the number of tourists in the regions to be equal?

