

## 7-4

## Skills Practice

*Elimination Using Multiplication*

Use elimination to solve each system of equations.

$$\begin{aligned} 1. \quad x + y &= -9 \\ 5x - 2y &= 32 \quad \mathbf{(2, -11)} \end{aligned}$$

$$\begin{aligned} 2. \quad 3x + 2y &= -9 \\ x - y &= -13 \quad \mathbf{(-7, 6)} \end{aligned}$$

$$\begin{aligned} 3. \quad 2x + 5y &= 3 \\ -x + 3y &= -7 \quad \mathbf{(4, -1)} \end{aligned}$$

$$\begin{aligned} 4. \quad 2x + y &= 3 \\ -4x - 4y &= -8 \quad \mathbf{(1, 1)} \end{aligned}$$

$$\begin{aligned} 5. \quad 4x - 2y &= -14 \\ 3x - y &= -8 \quad \mathbf{(-1, 5)} \end{aligned}$$

$$\begin{aligned} 6. \quad 2x + y &= 0 \\ 5x + 3y &= 2 \quad \mathbf{(-2, 4)} \end{aligned}$$

$$\begin{aligned} 7. \quad 5x + 3y &= -10 \\ 3x + 5y &= -6 \quad \mathbf{(-2, 0)} \end{aligned}$$

$$\begin{aligned} 8. \quad 2x + 3y &= 14 \\ 3x - 4y &= 4 \quad \mathbf{(4, 2)} \end{aligned}$$

$$\begin{aligned} 9. \quad 2x - 3y &= 21 \\ 5x - 2y &= 25 \quad \mathbf{(3, -5)} \end{aligned}$$

$$\begin{aligned} 10. \quad 3x + 2y &= -26 \\ 4x - 5y &= -4 \quad \mathbf{(-6, -4)} \end{aligned}$$

$$\begin{aligned} 11. \quad 3x - 6y &= -3 \\ 2x + 4y &= 30 \quad \mathbf{(7, 4)} \end{aligned}$$

$$\begin{aligned} 12. \quad 5x + 2y &= -3 \\ 3x + 3y &= 9 \quad \mathbf{(-3, 6)} \end{aligned}$$

13. Two times a number plus three times another number equals 13. The sum of the two numbers is 7. What are the numbers?  $\mathbf{8, -1}$

14. Four times a number minus twice another number is  $-16$ . The sum of the two numbers is  $-1$ . Find the numbers.  $\mathbf{-3, 2}$

Determine the best method to solve each system of equations. Then solve the system.

$$\begin{aligned} 15. \quad 2x + 3y &= 10 \quad \mathbf{\text{elimination } (\times)}; \\ 5x + 2y &= -8 \quad \mathbf{(-4, 6)} \end{aligned}$$

$$\begin{aligned} 16. \quad 8x - 7y &= 18 \quad \mathbf{\text{elimination } (+)}; \\ 3x + 7y &= 26 \quad \mathbf{(4, 2)} \end{aligned}$$

$$\begin{aligned} 17. \quad y &= 2x \quad \mathbf{\text{substitution}}; \\ 3x + 2y &= 35 \quad \mathbf{(5, 10)} \end{aligned}$$

$$\begin{aligned} 18. \quad 3x + y &= 6 \quad \mathbf{\text{elimination } (-)}; \\ 3x + y &= 3 \quad \mathbf{\text{no solution}} \end{aligned}$$

$$\begin{aligned} 19. \quad 3x - 4y &= 17 \quad \mathbf{\text{elimination } (\times)}; \\ 4x + 5y &= 2 \quad \mathbf{(3, -2)} \end{aligned}$$

$$\begin{aligned} 20. \quad y &= 3x + 1 \quad \mathbf{\text{substitution}}; \\ 3x - y &= -1 \quad \mathbf{\text{infinitely many solutions}} \end{aligned}$$