

## Solving Systems with Three Variables

Name \_\_\_\_\_

Solve each of the following systems.

$$1. \begin{cases} y = -5 \\ x + y + z = 1 \\ x - y - 5z = 5 \end{cases}$$

$$2. \begin{cases} z = 2 \\ x - y + z = 2 \\ x + y - 3z = 0 \end{cases}$$

$$3. \begin{cases} x + 1 = 0 \\ 2x + y + z = 5 \\ 3x - y + z = 2 \end{cases}$$

$$4. \begin{cases} y - 3 = 0 \\ x - 2y - z = -1 \\ 2x + y + z = 4 \end{cases}$$

$$5. \begin{cases} -3y = z \\ 3x + z = 3 \\ 2x - y + z = 0 \end{cases}$$

$$6. \begin{cases} 2x = y \\ 3x - y = -1 \\ x + 2y + z = -5 \end{cases}$$

$$7. \begin{cases} y - z = 0 \\ y + 4z = 15 \\ x + y + z = 9 \end{cases}$$

$$8. \begin{cases} x + z = 0 \\ 2x + z = -4 \\ 2x + y - z = -12 \end{cases}$$

$$9. \begin{cases} 5x + y + 2z = 10 \\ 2x + 2y + z = 0 \\ 2x + 3y = -7 \end{cases}$$

$$10. \begin{cases} y + 4z = -1 \\ 2x - y = 1 \\ x - y + z = 4 \end{cases}$$

$$11. \begin{cases} x + 3y + z = 3 \\ 2x + 5y - 2z = -4 \\ x + 6y + 2z = 0 \end{cases}$$

$$12. \begin{cases} x - 3y = 4 \\ x + z = 12 \\ x - y - z = 1 \end{cases}$$

$$13. \begin{cases} x + y + z = -2 \\ 2x - y + z = -1 \\ x - 4y + z = 3 \end{cases}$$

$$14. \begin{cases} 4x - y + z = 6 \\ x + y - z = -1 \\ -x - 2y + z = -2 \end{cases}$$

$$15. \begin{cases} 5x - y - 2z = 1 \\ -3x + 2y + 3z = 2 \\ x - 2y - z = -10 \end{cases}$$

$$16. \begin{cases} 2x - y + z = 5 \\ x - y + z = 1 \\ x + y + 3z = 7 \end{cases}$$

Solve each of the following systems.

1. 
$$\begin{cases} y = -5 \\ x + y + z = 1 \\ x - y - 5z = 5 \end{cases}$$

 $(5, -5, 1)$ 

2. 
$$\begin{cases} z = 2 \\ x - y + z = 2 \\ x + y - 3z = 0 \end{cases}$$

 $(3, 3, 2)$ 

3. 
$$\begin{cases} x + 1 = 0 \\ 2x + y + z = 5 \\ 3x - y + z = 2 \end{cases}$$

 $(-1, 1, 6)$ 

4. 
$$\begin{cases} y - 3 = 0 \\ x - 2y - z = -1 \\ 2x + y + z = 4 \end{cases}$$

 $(2, 3, -3)$ 

5. 
$$\begin{cases} -3y = z \\ 3x + z = 3 \\ 2x - y + z = 0 \end{cases}$$

 $(2, 1, -3)$ 

6. 
$$\begin{cases} 2x = y \\ 3x - y = -1 \\ x + 2y + z = -5 \end{cases}$$

 $(-1, -2, 0)$ 

7. 
$$\begin{cases} y - z = 0 \\ y + 4z = 15 \\ x + y + z = 9 \end{cases}$$

 $(3, 3, 3)$ 

8. 
$$\begin{cases} x + z = 0 \\ 2x + z = -4 \\ 2x + y - z = -12 \end{cases}$$

 $(-4, 0, 4)$ 

9. 
$$\begin{cases} 5x + y + 2z = 10 \\ 2x + 2y + z = 0 \\ 2x + 3y = -7 \end{cases}$$

 $(1, -3, 4)$ 

10. 
$$\begin{cases} y + 4z = -1 \\ 2x - y = 1 \\ x - y + z = 4 \end{cases}$$

 $(-2, -5, 1)$ 

11. 
$$\begin{cases} x + 3y + z = 3 \\ 2x + 5y - 2z = -4 \\ x + 6y + 2z = 0 \end{cases}$$

 $(6, -2, 3)$ 

12. 
$$\begin{cases} x - 3y = 4 \\ x + z = 12 \\ x - y - z = 1 \end{cases}$$

 $(7, 1, 5)$ 

13. 
$$\begin{cases} x + y + z = -2 \\ 2x - y + z = -1 \\ x - 4y + z = 3 \end{cases}$$

 $(-1, -1, 0)$ 

14. 
$$\begin{cases} 4x - y + z = 6 \\ x + y - z = -1 \\ -x - 2y + z = -2 \end{cases}$$

 $(1, 3, 5)$ 

15. 
$$\begin{cases} 5x - y - 2z = 1 \\ -3x + 2y + 3z = 2 \\ x - 2y - z = -10 \end{cases}$$

 $(0, 7, -4)$ 

16. 
$$\begin{cases} 2x - y + z = 5 \\ x - y + z = 1 \\ x + y + 3z = 7 \end{cases}$$

 $(4, 3, 0)$