

Practice 4-8**Augmented Matrices and Systems**

Write a system of equations for each augmented matrix.

1.
$$\left[\begin{array}{cc|c} 4 & -2 & 3 \\ 6 & 11 & 9 \end{array} \right]$$

2.
$$\left[\begin{array}{cc|c} 12 & 6 & -4 \\ -1 & 0 & 2 \end{array} \right]$$

3.
$$\left[\begin{array}{ccc|c} -2 & 9 & -2 & 20 \\ 3 & -1 & 2 & 29 \\ 6 & 5 & 5 & -4 \end{array} \right]$$

Use Cramer's Rule to solve each system.

4.
$$\begin{cases} 2x + y = 1 \\ 3x - y = 9 \end{cases}$$

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

6.
$$\begin{cases} 3x + 5y = 1 \\ x + 6y = 9 \end{cases}$$

7.
$$\begin{cases} x + y + z = 1.28 \\ x - 3y + 2z = 1.26 \\ 3x + 2y + 4z = 4.06 \end{cases}$$

8.
$$\begin{cases} 2x + y - z = 0.75 \\ 3x + 3y + 2z = 4 \\ x - 5y + 3z = -2 \end{cases}$$

9.
$$\begin{cases} x + y - z = 6 \\ 3x - 9y + z = -2 \\ 0.2x - 0.3y + 0.71z = -1.12 \end{cases}$$

Write an augmented matrix for each system.

10.
$$\begin{cases} -3x + 4y = -8 \\ 2x - 8y = 16 \end{cases}$$

11.
$$\begin{cases} u + 3v = -30 \\ 4u + v = 1 \end{cases}$$

12.
$$\begin{cases} x - 4y + z = -9 \\ 3x + 2y - 3z = 9 \\ 4x + 2z = -4 \end{cases}$$

Use an augmented matrix to solve each system.

13.
$$\left[\begin{array}{ccc|c} x & y & z & 0 \\ 2x & -2y & 3z & 46 \\ 3x & 7y & 11z & 80 \end{array} \right]$$

14.
$$\left[\begin{array}{ccc|c} 3x & y & z & 18 \\ 4x & 2y & 3z & 12 \\ 7x & 8y & 5z & 9 \end{array} \right]$$

15.
$$\left[\begin{array}{ccc|c} 3x & 7y & 10z & 28 \\ 0.7x & -0.6y & 0.8z & 4.3 \\ 12x & -7y & -9z & 77 \end{array} \right]$$

16.
$$\begin{cases} x - 2y - 3z = 2 \\ 2x + y - 5z = 30 \\ 7x - 11y - z = -48 \end{cases}$$

17.
$$\begin{cases} x + y + z = 6.5 \\ 3x - 5y + 6z = -35 \\ 5x + 2y + 2z = 10 \end{cases}$$

18.
$$\begin{cases} -x + y - z = -2 \\ 3x + 2y + 0.5z = -1.5 \\ 21x + 19y - 2z = -45 \end{cases}$$

Use a graphing calculator to solve each system.

19.
$$\begin{cases} 4x - 2y + 3z = -2 \\ 2x + 2y + 5z = 16 \\ 8x - 5y - 2z = 4 \end{cases}$$

20.
$$\begin{cases} x + y + z = -1 \\ 3x + 5y + 4z = 2 \\ 3x + 6y + 5z = 0 \end{cases}$$

21.
$$\begin{cases} x + 3y - 2z = -3 \\ 2x + y - z = -6 \\ 3x - 2y + 4z = 8 \end{cases}$$