1-6 Additional Practice

Linear Systems

Solve the following system of equations.

1. $\begin{cases} y = 7 - x \\ x + 3y = 7 \end{cases}$
(7, 0)

2. $\begin{cases} 4x + 3y = -16 \\ -x + y = 4 \end{cases}$
(−4, 0)

3. $\begin{cases} 2x - 4y = -4 \\ 3x - y = 4 \end{cases}$
(2, 2)

Solve the following system of equations.

4. $\begin{cases} 2x + 3y - z = 9 \\ -2x - y + 2z = 2 \\ x + y - 2z = 3 \end{cases}$
(−5, 6, −1)

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

6. $\begin{cases} -3x + 2y + 5z = -10 \\ -x - 2y + 3z = 6 \\ 2x - y - z = 8 \end{cases}$
(3, −3, 1)

Write the matrix for the system of equations.

7. $\begin{cases} 3x + y = -4 \\ -2x + 4y = 7 \end{cases}$
$\left[\begin{array}{cc|c} 3 & 1 & -4 \\ -2 & 4 & 7 \end{array}\right]$

8. $\begin{cases} 4x - y + 2z = 10 \\ 5x + 2y - 3z = 0 \\ x - 3y + z = 6 \end{cases}$
$\left[\begin{array}{ccc|c} 4 & -1 & 2 & 10 \\ 5 & 2 & -3 & 0 \\ 1 & -3 & 1 & 6 \end{array}\right]$

9. $\begin{cases} 3x - 2y + z = 6 \\ 4x - 6z = 6 \\ -3x - 4z = -10 \end{cases}$
$\left[\begin{array}{ccc|c} 3 & -2 & 1 & 6 \\ 4 & 0 & -6 & 6 \\ 0 & -3 & -4 & -10 \end{array}\right]$

10. Last year, a baseball team paid $20 per bat and $12 per glove, spending a total of $552. They bought 34 pieces of equipment. What are a system of equations and an augmented matrix that can represent this situation?

$\begin{cases} 20x + 12y = 552 \\ x + y = 34 \end{cases}$ $\left[\begin{array}{cc|c} 20 & 12 & 552 \\ 1 & 1 & 34 \end{array}\right]$

11. Write the system of equations for the matrix. $\left[\begin{array}{ccc|c} 2 & 5 & 0 & 13 \\ -3 & 1 & 2 & 6 \\ 4 & 0 & -3 & 5 \end{array}\right]$

$\begin{cases} 2x + 5y = 13 \\ -3x + y + 2z = 6 \\ 4x - 3z = 5 \end{cases}$