

**6-5 Skills Practice****Elimination Using Multiplication**

Use elimination to solve each system of equations.

1.  $x + y = -9$

$5x - 2y = 32$

2.  $3x + 2y = -9$

$x - y = -13$

3.  $2x + 5y = 3$

$-x + 3y = -7$

4.  $2x + y = 3$

$-4x - 4y = -8$

5.  $4x - 2y = -14$

$3x - y = -8$

6.  $2x + y = 0$

$5x + 3y = 2$

7.  $5x + 3y = -10$

$3x + 5y = -6$

8.  $2x + 3y = 14$

$3x - 4y = 4$

9.  $2x - 3y = 21$

$5x - 2y = 25$

10.  $3x + 2y = -26$

$4x - 5y = -4$

11.  $3x - 6y = -3$

$2x + 4y = 30$

13. Two times a number plus three times another number equals 13. The sum of the two numbers is 7. What are the numbers?

**6-5 Skills Practice****Applying Systems of Linear Equations**

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

1.  $5x + 3y = 16$

$3x - 5y = -4$

2.  $3x - 5y = 7$

$2x + 5y = 13$

3.  $y = 3x - 24$

$5x - y = 8$

4.  $-11x - 10y = 17$

$5x - 7y = 50$

5.  $4x + y = 24$

$5x - y = 12$

6.  $6x - y = -145$

$x = 4 - 2y$

- 7. VEGETABLE STAND** A roadside vegetable stand sells pumpkins for \$5 each and squashes for \$3 each. One day they sold 6 more squash than pumpkins, and their sales totaled \$98. Write and solve a system of equations to find how many pumpkins and squash they sold?

**6-6 Skills Practice****Organizing Data Using Matrices**

State the dimensions of each matrix. Then identify the position of the circled element in each matrix.

1.  $\begin{bmatrix} 0 & 3 \\ -4 & 1 \\ 2 & 7 \end{bmatrix}$

3.  $\begin{bmatrix} -1 & 4 \\ 6 & 0 \\ -2 & 7 \\ 1 & 2 \end{bmatrix}$

4.  $\begin{bmatrix} 2 & -3 & 1 & 0 \\ 4 & 1 & -2 & 9 \\ 10 & 5 & 0 & -1 \\ 3 & 8 & -7 & 3 \end{bmatrix}$

Perform the indicated matrix operations. If the matrix does not exist, write *impossible*.

5.  $\begin{bmatrix} 5 & -1 \\ 4 & -2 \end{bmatrix} + \begin{bmatrix} 0 & 2 \\ -3 & 2 \end{bmatrix}$

7.  $\begin{bmatrix} 9 & 1 \\ -3 & 7 \\ 0 & -2 \\ 1 & 2 \end{bmatrix} + \begin{bmatrix} 2 \\ 0 \\ 1 \\ -4 \end{bmatrix}$

9.  $3 \begin{bmatrix} 1 & -2 & 0 \\ 4 & 1 & 5 \end{bmatrix}$

11.  $5 \begin{bmatrix} 1 & -4 \\ 0 & 3 \end{bmatrix}$

13. **WEATHER** The temperatures observed on different days in different cities are shown in the table at the right.

- a. Write a matrix to organize the temperatures.

City	Monday	Tuesday	Wednesday	Thursday	Friday
Las Vegas	94°F	99°F	101°F	98°F	89°F
Phoenix	92°F	86°F	99°F	104°F	101°F

b. What are the dimensions of the matrix?

c. Which day and location had the highest temperature? lowest temperature?

**6-7 Skills Practice****Using Matrices to Solve Systems of Equations**

Write an augmented matrix for each system of equations.

1.  $\begin{cases} 8x - y = 1 \\ x + 2y = -4 \end{cases}$

2.  $\begin{cases} 5x - 2y = 12 \\ 2x + y = 8 \end{cases}$

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

4.  $\begin{cases} -3x + 4y = 22 \\ 2x - 3y = 6 \end{cases}$

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

6.  $\begin{cases} 2x - 2y = 6 \\ 3x = 12 \end{cases}$

7.  $\begin{cases} -x + 5y = 0 \\ 3x + 2y = 12 \end{cases}$

8.  $\begin{cases} x - 10y = -16 \\ 3x + 2y = 6 \end{cases}$

9.  $\begin{cases} 2x = 6 \\ x + 4y = 11 \end{cases}$

Use an augmented matrix to solve each system of equations.

10.  $\begin{cases} 2x - y = -2 \\ 3x + y = 17 \end{cases}$

11.  $\begin{cases} x + 4y = 19 \\ -3x - 2y = -7 \end{cases}$

12.  $\begin{cases} 2x - y = 7 \\ -x + 3y = -11 \end{cases}$