

Practice

1. For each linear system, the value of one variable in the solution is given.

Find the value of the other variable.

a) $-x + 2y = 1$ ①

$3x + 3y = -12$ ②

Given: $y = -1$

Substitute $y = \underline{\hspace{2cm}}$ in equation ①.

$$-x + 2y = 1$$

$$-x + 2(\underline{\hspace{2cm}}) = 1$$

$$x = \underline{\hspace{2cm}}$$

b) $-3x + y = 17$ ①

$2x + y = -8$ ②

Given: $x = -5$

Substitute $x = \underline{\hspace{2cm}}$ in equation ②.

$$2x + y = -8$$

$$y = \underline{\hspace{2cm}}$$

2. Solve this linear system.

$y = x + 6$ ①

$3x - 2y = -13$ ②

Substitute $y = x + 6$ in equation ②.

$$3x - 2y = -13$$
 ②

$$3x - 2(\underline{\hspace{2cm}}) = -13$$

$$x = \underline{\hspace{2cm}}$$

To find the value of y when $x = \underline{\hspace{2cm}}$, substitute in equation ①.

$y = x + 6$ ①

$y = \underline{\hspace{2cm}} + 6$

$y = \underline{\hspace{2cm}}$

The solution is: $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$

Verify the solution. In each equation, substitute: $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$

$y = x + 6$

$3x - 2y = -13$

For each equation, L.S. $\underline{\hspace{2cm}}$ R.S.

So, the solution of the linear system is $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$.

3. Solve this linear system.

$$3x + 2y = 25 \quad \textcircled{1}$$

$$x - 2y = -5 \quad \textcircled{2}$$

So, solve equation $\textcircled{2}$ for x .

$$x - 2y = -5 \quad \textcircled{2}$$

$$x = \underline{\hspace{2cm}}$$

Substitute $x = \underline{\hspace{2cm}}$ in equation

$$3x + 2y = 25$$

$$3(\underline{\hspace{2cm}}) + 2y = 25$$

To find the value of x when $y = \underline{\hspace{2cm}}$, substitute in equation

$$x - 2y = -5 \quad \textcircled{2}$$

$$x - 2(\underline{\hspace{2cm}}) = -5$$

$$x = \underline{\hspace{2cm}}$$

The solution is: $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$

$$y = \underline{\hspace{2cm}}$$

Verify the solution.

In each equation, substitute: $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$

$$3x + 2y = 25$$

$$x - 2y = -5$$

For each equation, L.S. $\underline{\hspace{2cm}}$ R.S.

So, the solution of the linear system is $x = \underline{\hspace{2cm}}$ and $y = \underline{\hspace{2cm}}$.

4. a) Create a linear system to model this situation:

Michelle and Marty spend the afternoon at the local fair. Michelle rides the roller coaster 3 times and the super swing 5 times. She pays \$25. Marty rides the roller coaster 5 times and the super swing once. He pays \$27.

A linear system that models the situation is:

$$\underline{\hspace{2cm}} \quad \textcircled{1}$$

$$\underline{\hspace{2cm}} \quad \textcircled{2}$$

b) Solve this problem: What is the cost of each type of ride?

The solution is: $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Use the data in the problem to verify the solution.

A roller coaster ride costs $\underline{\hspace{2cm}}$ and a super swing ride costs $\underline{\hspace{2cm}}$.