Section 7.2 Systems of Linear Equations in Two Variables

Course Number

Instructor

Date

Objective: In this lesson you learned how to solve a system of equations by elimination and how to use systems of equations to model and solve real-life problems.

Important Vocabulary Define each term or concept.

Method of elimination

Equivalent systems

Consistent system

Inconsistent system

I. The Method of Elimination (Pages 485–486)

What you should learn
How to use the method of elimination to solve systems of linear equations in two variables

List the steps necessary for solving a system of two linear equations in x and y using the method of elimination.

The operations that can be performed on a system of linear equations to produce an equivalent system are:

(1)

(2)

(3)

Example 1: Describe a strategy for solving the system of linear equations using the method of elimination.

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

Example 2: Solve the system of linear equations using the method of elimination.

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

II. Graphical Interpretation of Two-Variable Systems

(Pages 487–489)

What you should learn
How to graphically interpret the number of solutions of a system of linear equations in two variables

If a system of linear equations has two different solutions, it must have _____ solutions.

For a system of two linear equations in two variables, list the possible number of solutions the system can have and give a graphical interpretation of the solutions.

If a false statement such as 9 = 0 is obtained while solving a system of linear equations using the method of elimination, then the system has _____.

If a statement that is true for all values of the variables, such as 0 = 0, is obtained while solving a system of linear equations using the method of elimination, then the system has _____.

Example 3: Is the following system consistent or inconsistent? How many solutions does the system have?

$$\begin{cases} x - 3y = 2 \\ -4x + 12y = 8 \end{cases}$$

III. Applications of Two-Variable Linear Systems

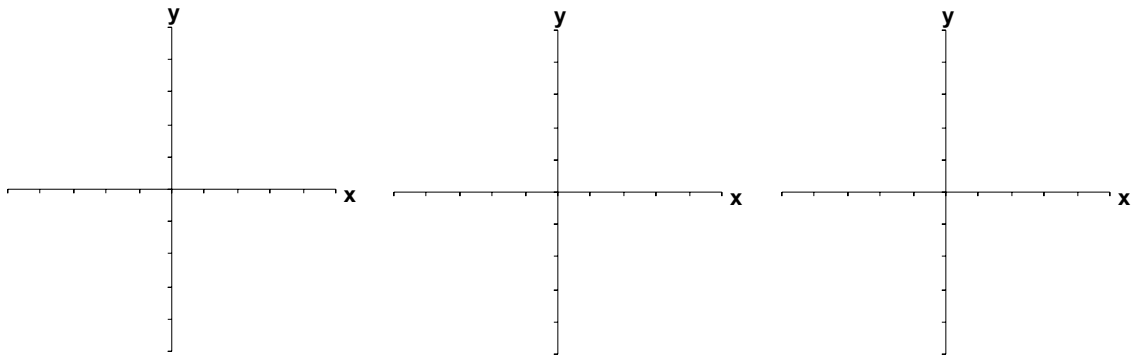
(Page 490)

What you should learn
How to use systems of linear equations in two variables to model and solve real-life problems

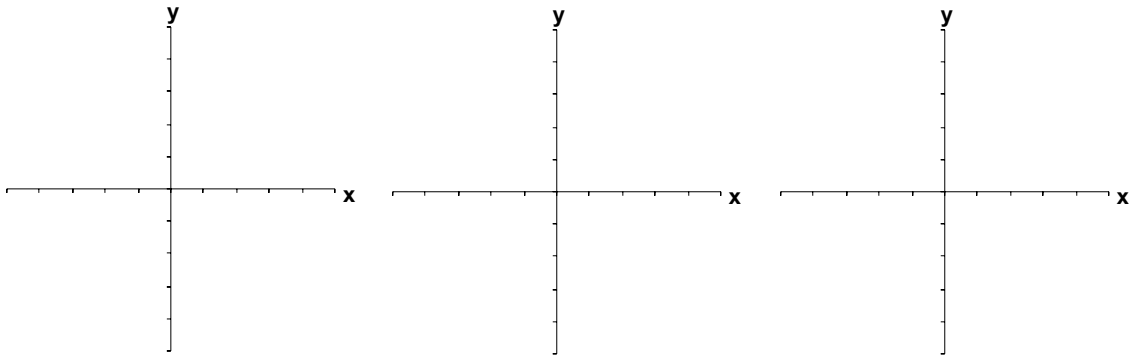
When may a system of linear equations be an appropriate mathematical model for solving a real-life application?

Give an example of a real-life application that could be solved with a system of linear equations.

Additional notes



Additional notes



Homework Assignment

Page(s)

Exercises