CHAPTER

Systems of Linear Equations

Lesson 5.1  Introduction to Systems of Linear Equations

Solve each system of linear equations by making tables of values.
Each variable $x$ is a positive integer less than 6.

1. $x + 3y = 6$
   $2x - 3y = 3$

2. $2x - y = 1$
   $2x + 3y = 13$

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

4. $x + 3y = -4$
   $x + y = 2$

5. $2x + y = 10$
   $2x - y = 6$

6. $x - y = -2$
   $3x + y = 6$

7. $2y - x = 8$
   $2x - y = -1$

8. $3x + 4y = 15$
   $3x = y$
Solve by making a table of values. The values $x$ and $y$ are integers.

9. Jolene takes $x$ minutes to fold a paper airplane and $y$ minutes to fold a paper star. On a particular day, she folded 5 paper airplanes and 4 paper stars in 64 minutes. The following day, she folded 3 paper airplanes and 8 paper stars in 72 minutes. The related system of linear equations is:

$$5x + 4y = 64$$
$$3x + 8y = 72$$

Solve the system of linear equations. Then find the time taken to fold a paper airplane and a paper star.

10. Janice is $2x$ years old and Jennifer is $3y$ years old. Janice is 3 times older than Jennifer. Two years later, their combined age will be 28 years. The related system of linear equations is:

$$2x = 9y$$
$$2x + 3y = 24$$

Solve the system of linear equations. Then find the present age of Janice and Jennifer.

11. Jack is training for a biathlon event. On one training day, he walked for 2 hours and cycled for an hour, covering 18 miles in the morning. In the afternoon, he walked for 2 hours and cycled for 3 hours, covering 42 miles. The related system of linear equations where $x$ miles per hour is his walking speed and $y$ miles per hour is his cycling speed, is:

$$2x + y = 18$$
$$2x + 3y = 42$$

Solve the system of linear equations by making tables of values. Then find the difference between Jack’s walking speed and cycling speed.