

## In This Chapter, You Have Learned

- To recognize a system of equations
- To write a system of equations
- To find the solution of a system of equations by graphing
- To solve a system of equations by addition or subtraction
- To solve systems of equations using two steps—multiplication and addition or multiplication and subtraction
- To solve a system by substituting to eliminate one variable

## Words You Know

From the lists of “Words to Learn,” choose the word or phrase that best completes each statement.

1. Two or more equations using the same variables are a(n) \_\_\_\_\_.
2. \_\_\_\_\_ is the set of numbers that makes a system of equations true.
3. The three ways of solving a system of equations are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

## More Practice

Write *yes* for a system of equations; otherwise write *no*.

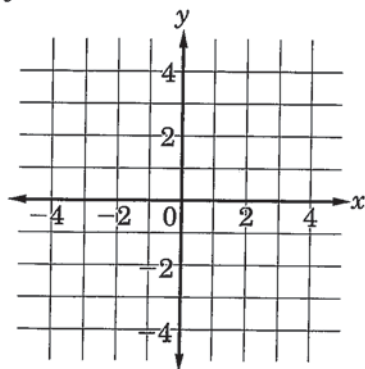
- |                                       |  |
|---------------------------------------|--|
| 4. $6a - b = 7$<br>$a + b = 14$ _____ | 5. $8x = 4y + 6$<br>$2x - y = 1$ _____ |
|---------------------------------------|--|

Tell whether  $(x = 4, y = -1)$  is a solution of these systems of equations.

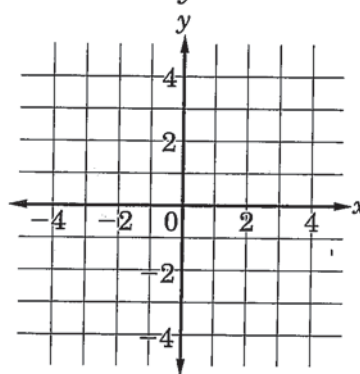
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|---------------------------------------|---|
| 6. $x - y = 5$<br>$2x + y = 10$ _____ | 7. $3x - y = 13$<br>$-2x - 3y = -5$ _____ |
|---------------------------------------|---|

Solve each system of equations by graphing.

8.  $4x + y = 11$   
 $y = x + 1$



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



Solve each system of equations, using addition or subtraction.

10.  $4y = 5x + 5$   
 $y = 5x - 5$

11.  $6y = 2x + 7$   
 $5y = -2x + 15$

Solve each system of equations, using the multiplication method.

12.  $6x - 5y = 1$   
 $4x - 3y = 3$

13.  $9y = x - 12$   
 $-2y = 3x + 14$

Solve each system of equations, using the substitution method.

14.  $x + y = 20$   
 $3x - 2y = 20$

15.  $3y = -x + 5$   
 $2y = -5x - 4$

## Problems You Can Solve

Write a system of equations for each. Then solve.

16. Three times a number  $x$  minus 4 equals another number,  $y$ . The sum of the numbers is 12. Find the numbers.
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17. Six marigold plants and two packages of zinnia seeds cost \$14. Two marigold plants and six packages of zinnia seeds cost \$10. Find the price of a plant and of a package of seeds.
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18. Nathaniel found some quarters and dimes in the sofa that were worth \$3. The quarters were worth \$2 more than the dimes. How many quarters did he find?
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19. Nigel has 18 CDs more than Robin. Together they have 48 CDs. How many CDs does each have?
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20. **For Your Portfolio** Determine the rate at which you perform a certain activity. For example, find the rate at which you read, bike, skate, type, travel to school, or commute to your job. Write an equation for the rate, and graph the equation. Then determine how you could improve that rate by changing one of the variables, such as the length of time you do the activity. Write another equation and graph it. Compare the graphs.
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