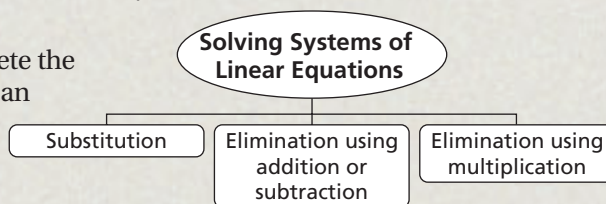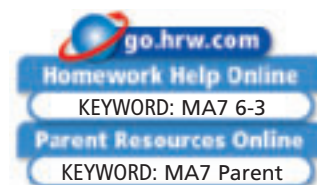## THINK AND DISCUSS

1. Explain how multiplying the second equation in a system by -1 and eliminating by adding is the same as elimination by subtraction. Give an example of a system for which this applies.

2. Explain why it does not matter which variable you solve for first when solving a system by elimination.

3. **GET ORGANIZED** Copy and complete the graphic organizer. In each box, write an example of a system of equations that you could solve using the given method.

Solving Systems of Linear Equations

- Substitution
- Elimination using addition or subtraction
- Elimination using multiplication

Exercises

GUIDED PRACTICE

Solve each system by elimination.

SEE EXAMPLE 1
p. 398

1. $\begin{cases} -x + y = 5 \\ x - 5y = -9 \end{cases}$

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

3. $\begin{cases} 2x + 5y = -24 \\ 3x - 5y = 14 \end{cases}$

SEE EXAMPLE 2
p. 398

4. $\begin{cases} x - 10y = 60 \\ x + 14y = 12 \end{cases}$

5. $\begin{cases} 5x + y = 0 \\ 5x + 2y = 30 \end{cases}$

6. $\begin{cases} -5x + 7y = 11 \\ -5x + 3y = 19 \end{cases}$

SEE EXAMPLE 3
p. 399

7. $\begin{cases} 2x + 3y = 12 \\ 5x - y = 13 \end{cases}$

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

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

SEE EXAMPLE 4
p. 400

10. **Consumer Economics** Each family in a neighborhood is contributing $20 worth of food to the neighborhood picnic. The Harlin family is bringing 12 packages of buns. The hamburger buns cost $2.00 per package. The hot-dog buns cost $1.50 per package. How many packages of each type of bun did they buy?

PRACTICE AND PROBLEM SOLVING

Independent Practice	
For Exercises	See Example
11–13	1
14–16	2
17–19	3
20	4

Extra Practice
Skills Practice p. S14
Application Practice p. S33

Solve each system by elimination.

11. $\begin{cases} -x + y = -1 \\ 2x - y = 0 \end{cases}$

12. $\begin{cases} -2x + y = -20 \\ 2x + y = 48 \end{cases}$

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

14. $\begin{cases} x - y = 4 \\ x - 2y = 10 \end{cases}$

15. $\begin{cases} x + 2y = 5 \\ 3x + 2y = 17 \end{cases}$

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

17. $\begin{cases} x - y = -3 \\ 5x + 3y = 1 \end{cases}$

18. $\begin{cases} 9x - 3y = 3 \\ 3x + 8y = -17 \end{cases}$

19. $\begin{cases} 5x + 2y = -1 \\ 3x + 7y = 11 \end{cases}$

20. **Multi-Step** Mrs. Gonzalez bought centerpieces to put on each table at a graduation party. She spent $31.50. There are 8 tables each requiring either a candle or vase. Candles cost $3 and vases cost $4.25. How many of each type did she buy?