NAME _____ DATE _____

Module 10 Solving Systems of Linear Equations and Inequalities
Lesson 2 Solving Systems of Linear Equations by Elimination

independent practice

Use elimination to find the solution to each system of equations.

1. $\begin{cases} x - y = 7 \\ x + y = 1 \end{cases}$

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

3. $\begin{cases} x - 2y = -13 \\ 5x + 2y = 1 \end{cases}$

4. $\begin{cases} 5x - 4y = 0 \\ 3x + y = 17 \end{cases}$

5. $\begin{cases} y = 3x + 20 \\ y = -3x + 12 \end{cases}$

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

7. $\begin{cases} 9y = 7x - 43 \\ 9y = 7x + 54 \end{cases}$

8. $\begin{cases} 3w - 2z = -7 \\ 2w + 7z = -63 \end{cases}$

9. $\begin{cases} 7y = 21x - 49 \\ y = 3x - 7 \end{cases}$

Write a system of equations, and solve the system using elimination.

10. The sum of two numbers is equal to 45. Their difference is 23. Find the numbers.

11. The sum of two consecutive integers is 97. Half the first plus three times the second is 171. Find the integers.

12. Carnations cost $23.75 per dozen, and roses cost $69.95 per dozen. The florist sold a combination of 12 dozen flowers on Saturday and took in $608.40. How many dozens of each kind of flower did the florist sell?

13. World series tickets are $35 for bleacher seats and $165 for stadium seats. 235,957 people attended the first game, and $16,094,505 was the total for ticket sales. How many people sat in the bleacher seats for the first game?

14. When Sarah was born, her mother was 23. In three more years, Sarah's mother will be twice Sarah's age now. How old are they now?

15. Kevin is six years older than his twin sisters. The sum of the three children's ages is the same as their 42-year-old dad's age. How old are the children?

16. The perimeter of a rectangle is 20 feet. The length is one foot more than twice the width. What are the dimensions of the rectangle?

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17. One of the acute angles in a right triangle is 10 degrees more than the other. Find the two angle measures.

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Journal

1. When using the elimination method, how do you know when there is no solution to the system of equations? Infinitely many solutions?

2. Is it possible for a dependent system to be inconsistent? Why or why not?

3. Do you prefer solving systems by graphing or elimination? Explain.

4. When is it necessary to multiply ***each*** equation by a different number?

5. Shane said to solve this system $\begin{cases} x + y = 7 \\ 12x - 3y = 15 \end{cases}$ the first step would be to multiply the top equation by 3, then add the two equations. Jacob said the first step is to multiply the top equation by –12, then add. Josh says they are both correct. Who is correct, and why?

Cumulative Review

Solve each equation.

1. $3x + 2 = 17$ _____

2. $2 - 5y = 32$ _____

3. $w - 3w + 7 = 3$ _____

4. $57 = 3t$ _____

5. $M + 5M = 3M - 21$ _____

6. $n - 37 + 2(n + 1) = -35$ _____

7. $3c^2 = 75$ _____

8. $40 = v^2 - 9$ _____

9. $|x| + 9 = 15$ _____

10. $12 - |h| = 12$ _____