Name _____ Date _____

In Exercises 1 and 2, solve the system using the elimination method.

1. $x - 6y + 2z = 5$
   $2x - 3y + z = 4$
   $3x + 4y - z = -2$

2. $x + y - z = -2$
   $2x - y + z = 8$
   $-x + 2y + 2z = 10$

3. Describe and correct the error in the first step of solving the system of linear equations.

   $5x + 3y - z = 15$
   $-x + 2y + 3z = 10$
   $3x - 4y + 3z = 8$

   $$\boxed{\;\times\quad \begin{aligned} 5x + 3y - z &= 15 \\ \underline{-5x + 10y + 15z} &= 10 \\ 13y + 14z &= 25 \end{aligned}\;}$$

In Exercises 4 and 5, solve the system using the elimination method.

4. $x + 4y - 3z = 1$
   $3x + 12y - 9z = 8$
   $2x + 4y - 4z = -12$

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

6. Three bouquets of flowers are ordered at a florist. Three roses, 2 carnations, and 1 tulip cost $14, 6 roses, 2 carnations, and 6 tulips cost $38, and 1 rose, 12 carnations, and 1 tulip cost $18. How much does each item cost?

In Exercises 7 and 8, solve the system of linear equations using the substitution method.

7. $y = -3$
   $2x + y = 5$
   $x - 2y + z = 6$

8. $x - y = 5$
   $-x + 4y + 2z = 3$
   $-x + 3y - 5z = -6$

9. A triangle has a perimeter of 90 centimeters.

   a. Write and use a linear system to determine the lengths of sides ℓ, m, and n.

   b. Is the triangle a right triangle? Explain.

   $\ell = \frac{5}{4}m - n$
   n
   $m = 5n - 5$