Name _____ Date _____

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

1. $3x - y + z = -1$

$3x + 2y - 5z = -16$

$3x + 3y + 2z = 6$

2. $4x + 3y - 5z = -9$

$6x + 6y - 3z = 6$

$3x - 3y + 4z = 19$

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

$5x + 3y - z = 15$

$-x + 2y + 3z = 10$

$3x - 4y + 3z = 8$

$$\boxed{\;\times\quad \begin{aligned} -15x - 9y - 3z &= 45 \\ 3x - 4y + 3z &= 8 \\ \hline -12 - 13y &= 53 \end{aligned}\;}$$

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

4. $x - y - z = 5$

$4x - 4y - 4z = 15$

$3x - y - 4z = -2$

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

$x + y + 3z = 5$

$3y + 6z = 12$

In Exercises 6 and 7, solve the system of linear equations using the substitution method.

6. $2x - y = 6$

$4x - 3y - 2z = 14$

$-x + 2y - 3z = 12$

7. $6x + 3y - 9z = 10$

$-2x - y + 3z = 3$

$x - 2y - z = 1$

8. Your friend claims that she has a bag of 30 coins containing nickels, dimes, and quarters. The total value of the 30 coins is $3. There are twice as many nickels as there are dimes. Is your friend correct? Explain your reasoning.

9. Each equation in this system represents a line.

$x - 2y - 3 = 0$

$2x + y + 1 = 0$

$3x + 4y + 5 = 0$

a. Solve the system of linear equations using either the elimination method or the substitution method.

b. Do the lines intersect at a point? Explain.