Name _____ Class _____ Date _____

4-4 B Practice

Systems with Three Variables

Solve each system by elimination. Check your answers.

1. $\begin{cases} x + 5y + 5z = -10 \\ x + y + z = 2 \\ x + 2y + 3z = -3 \end{cases}$

2. $\begin{cases} x - y - z = 0 \\ x - 2y - 2z = 3 \\ -2x + 2y - z = 3 \end{cases}$

3. $\begin{cases} 3x + y + z = 6 \\ 3x - 2y + 2z = 14 \\ 3x + 3y - 3z = -6 \end{cases}$

4. $\begin{cases} x + y + z = -2 \\ 2x + 2y - 3z = 11 \\ 3x - y + z = 4 \end{cases}$

5. $\begin{cases} x - 5y + z = 3 \\ x + 2y - 2z = -12 \\ 2x + 2z = 6 \end{cases}$

6. $\begin{cases} 2x + 3z = 2 \\ 3x + 6y = 6 \\ x - 2z = 8 \end{cases}$

Solve each system by substitution. Check your answers.

7. $\begin{cases} 14x - 3y + 5z = -15 \\ 3x + 2y - 6z = 10 \\ 7x - y + 4z = -5 \end{cases}$

8. $\begin{cases} 5x - 3y + 2z = 39 \\ 4x + 4y - 3z = 34 \\ 3x - 2y + 6z = 14 \end{cases}$

9. $\begin{cases} x + y + z = 6 \\ 2x - y + 2z = 6 \\ -x + y + 3z = 10 \end{cases}$

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

11. $\begin{cases} 2x - 3y + z = 4 \\ -2x + 3y - z = -4 \\ 6x - 9y + 3z = 12 \end{cases}$

12. $\begin{cases} x + y - z = 1 \\ x + 2z = 3 \\ 2x + 2y = 4 \end{cases}$

13. You have 17 coins in pennies, nickels, and dimes in your pocket. The value of the coins is $0.47. There are four times the number of pennies as nickels. How many of each type of coin do you have?

14. For a party, you are cooking a large amount of stew that has meat, potatoes, and carrots. The meat costs $6 per pound, the potatoes cost $3 per pound, and the carrots cost $1 per pound. You spend $48.50 on 13.5 pounds of food. You buy twice as many carrots as potatoes.

a. Write a system of three equations that represent how much food you bought.

b. How much of each ingredient did you buy?