Name _____ **Date** _____

Solving 3x3 Systems of Eq. and Gaussian Elim. Homework

Solve the following systems by substitution:

1. $\begin{cases} x + 2y + 3z = 6 \\ y + 2z = 0 \\ z = 2 \end{cases}$

2. $\begin{cases} 2l + 2w + h = 72 \\ l = 3w \\ h = 2w \end{cases}$

Solve the following systems by elimination:

3. $\begin{cases} x - y + z = -1 \\ x + y + 3z = -3 \\ 2x - y + 2z = 0 \end{cases}$

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

Use the following word problem to write the system of equations. Do Not Solve!

5. A change machine contains nickels, dimes, and quarters. There are 75 coins in the machine, and the value of the coins is $7.25. There are 5 times as many nickels as dimes. Find the number of coins of each type in the machine.

Use Gaussian elimination to transform the following systems into triangular form.

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

7. $\begin{cases} x - 3y + 2z = 11 \\ -x + 4y + 3z = 5 \\ 2x - 2y - 4z = 2 \end{cases}$