QUIZ 6 - MTH 163 - 10 points

Name:_____Date:__

Instructions: Solve the following. Remember to show all work in order to receive full credit.

1. Write the matrix in reduced row-echelon form.

$$\begin{bmatrix} 4 & 8 & 16 \\ 3 & -1 & 2 \\ -2 & 10 & 12 \end{bmatrix}$$

2. Perform the matrix operations. If it is not possible, explain why.

a. $\quad -2 \begin{bmatrix} 1 & 2 \\ 5 & -4 \\ 6 & 0 \end{bmatrix} + 4 \begin{bmatrix} 7 & 1 \\ 1 & 2 \\ 1 & 4 \end{bmatrix}$

b. $\quad \begin{bmatrix} 1 & 3 \\ 2 & -1 \\ 6 & 0 \end{bmatrix} * \begin{bmatrix} 6 & -4 & 8 \\ 0 & 0 & 3 \end{bmatrix}$

3. Find the inverse of the matrices (if they exist).

a. $\begin{bmatrix} 3 & -10 \\ 4 & 2 \end{bmatrix}$

b. $\begin{bmatrix} 1 & 4 & 6 \\ 2 & -3 & 1 \\ -1 & 18 & 16 \end{bmatrix}$

4. Reduce the augmented matrix and solve the system of equations.

$$\begin{cases} 3x + 6z = 0 \\ -2x + y = 5 \\ y + 2z = 3 \end{cases}$$

5. Solve the system of equations using the inverse of the coefficient matrix.

$$\begin{cases} x - 3y - 2z = 8 \\ -2x + 7y + 3z = -19 \\ x - y - 3z = 3 \end{cases}$$

- REMEMBER after QUIZ # 6 there will be an exam in the TESTING CENTER

- EXAM # 3 will include concepts from Quizzes # 5 and # 6