

Elementary Row Operations:

- 1) Interchange 2 rows
- 2) Multiply a Row by a Constant
- 3) Add Rows

Name _____

Advanced Algebra

Unit 6: Assignment #15

Elementary Row Operations on 3 by 3 Day #1

Translate the following 3 by 3 systems of equations into a Matrix and perform elementary row operations to solve the system.

Your Goal is to get the following:

$$\begin{bmatrix} 1 & \# & \# \\ 0 & \# & \# \\ 0 & 0 & \# \end{bmatrix}$$

$$1) \begin{cases} x + 3y + z = 3 \\ x + 5y + 5z = 1 \\ 2x + 6y + 3z = 8 \end{cases}$$

$$2) \begin{cases} 3x + 6y + 6z = 3 \\ x + 3y + 10z = -10 \\ x + 2y + 5z = -11 \end{cases}$$

$$3) \begin{cases} y - 5z = 15 \\ x + 2y - z = 7 \\ -3x - y + 2z = 10 \end{cases}$$

$$4) \begin{cases} 2x - 10y + 3z = -20 \\ x - 3y + 7z = 0 \\ x - 5y + z = -10 \end{cases}$$

$$5) \begin{cases} 2x + 4y + 5z = 5 \\ x + 3y + 3z = 2 \\ 2x + 4y + 4z = 2 \end{cases}$$

$$6) \begin{cases} x - y + 3z = 6 \\ x - 2y = 5 \\ 2x - 2y + 5z = 9 \end{cases}$$

$$7) \begin{cases} x + 2z = 4 \\ x + y + z = 6 \\ 3x + 3y + 4z = 28 \end{cases}$$

$$8) \begin{cases} -2x - 2y - 15z = 0 \\ x + 2y + 2z = 18 \\ 3x + 3y + 22z = 2 \end{cases}$$