

Instructions: Clearly answer each of the questions below. Remember to check the back side. Show your work and any formulas you employ. Simplify all answers as far as possible.

- A linear system with atleast one solution is called ... consistent
- True or False. The reduced row echelon form of the augmented matrix for a linear system of equations always has the same solution set as the original equations. True
- Answer each of the following with the letter for the augmented matrix that best matches the given description. Use each matrix only once. Some won't be used at all.

$$A = \begin{bmatrix} 2 & 0 & -7 & 8 \\ -7 & 3 & 6 & -6 \\ -2 & 8 & 8 & 5 \end{bmatrix}, \quad B = \begin{bmatrix} -7 & -2 & 2 & 0 \\ -5 & -1 & 2 & 4 \\ 9 & -7 & 0 & 1 \\ 3 & 1 & -4 & 5 \end{bmatrix}, \quad C = \begin{bmatrix} -7 & -2 & 2 & 0 \\ -5 & -1 & 0 & 0 \\ 9 & 0 & 0 & 0 \end{bmatrix}$$

$$D = \begin{bmatrix} -2 & 0 & 0 & 2 & 2 & 4 \\ 0 & 3 & 0 & 7 & 1 & 9 \\ 0 & 0 & 9 & 4 & 3 & 8 \end{bmatrix}, \quad E = \begin{bmatrix} 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & -7 \\ 1 & 0 & 0 & -2 \end{bmatrix}, \quad F = \begin{bmatrix} 0 & 4 & 0 & 4 \\ -3 & 9 & 0 & -7 \\ 0 & 0 & 5 & 4 \end{bmatrix}$$

$$G = \begin{bmatrix} 1 & 4 & 0 & 3 & 4 & -8 \\ 0 & 0 & 1 & -1 & 3 & 4 \\ 0 & 0 & 0 & 0 & 1 & -3 \end{bmatrix}, \quad H = \begin{bmatrix} 5 & 0 & 1 & 0 & 7 & -4 \\ -8 & -1 & 3 & 0 & 0 & -7 \\ -9 & 2 & 7 & 0 & -6 & 5 \end{bmatrix}, \quad J = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & -7 \\ 0 & 0 & 1 & -2 \end{bmatrix}$$

$$K = \begin{bmatrix} 1 & 0 & 0 & 2 \\ 2 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}, \quad L = \begin{bmatrix} -2 & 0 & -7 \\ 3 & -9 & 8 \end{bmatrix}$$

- An inconsistent linear system. K
- A matrix in reduced row echelon form. J
- A matrix that is not in row echelon form, but can be transformed to reduced row echelon form by switching 2 rows. E
- A matrix that is not in reduced row echelon form, but can be made so by dividing rows by constants. D
- A linear system where there are more equations than there are unknowns. B
- A matrix in row echelon form but not reduced row echelon form. G