

NAME: _____ Score _____/10

Please **print** your name**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

1. A **matrix** is a rectangular array of numbers.
2. T **F** Matrix multiplication is commutative.
3. **T** F If two matrices have the same order, their sum is a matrix of that same order.
4. T **F** If two matrices have the same order, their product is a matrix of that same order.
5. T **F** Every square matrix has an inverse.
6. **T** F If a matrix has an inverse then it is a square matrix.
7. (2 pts) Write a matrix equation which is equivalent to the following system of equations

$$\begin{cases} 3x + 2y - 5z = 2 \\ -3x + 4y + 8z = 9 \\ 2x + 3y + 5z = -5 \end{cases}$$

$$\begin{bmatrix} 3 & 2 & -5 \\ -3 & 4 & 8 \\ 2 & 3 & 5 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 2 \\ 9 \\ -5 \end{bmatrix}$$

8. (2 pts) Solve the matrix equation $AX = C$. Assume A has an inverse **This has nothing to do with Question 7.**

$$\mathbf{X} = \mathbf{A}^{-1}\mathbf{C}$$