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Math 2250-4
Quiz 4
September 27, 2013

1a) Consider the following system of equations

$$\begin{aligned} 2x - 3y - z &= 0 \\ -2x + y &= 2 \\ -x + y + z &= 2 \end{aligned}$$

Exhibit the augmented matrix corresponding to this system, compute its reduced row echelon form, and find the solution set to the system.

(5 points)

1b) Consider other linear systems $A\,\underline{\boldsymbol{x}} = \underline{\boldsymbol{b}}$ that have the same coefficient matrix A as in part **1a**. What can you say about the solution sets to those systems, even if you are not told what the vector $\underline{\boldsymbol{b}}$ is? Explain

(2 points)

2) Consider the two matrices

$$A := \begin{bmatrix} 2 & -3 & -1 \\ -2 & 1 & 0 \\ -1 & 1 & 1 \end{bmatrix}, \quad B := \begin{bmatrix} 2 & -2 & 0 \\ -3 & 0 & 4 \end{bmatrix}.$$

Only one of the two products AB, BA is defined. Which is it and why? Then compute that product matrix.

(3 points)