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MA 265 Quiz 2

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Problem 2.1. Given the system of linear equations

$$\begin{aligned} x - 2x_2 + x_3 - x_4 &= 3 \\ x_1 + x_2 + x_3 - x_4 &= 1 \\ x_1 + x_3 - x_4 &= 2 \end{aligned} \tag{2.1}$$

find its matrix representation and the reduced row-echelon form of that matrix.

Problem 2.2. Given the matrix

$$A := \begin{bmatrix} 1 & 2 & -1 \\ 2 & 5 & -1 \\ -1 & -4 & 0 \end{bmatrix} \tag{2.2}$$

and the vector $\mathbf{b} := \begin{bmatrix} -3 \\ -4 \\ 2 \end{bmatrix}$, find the vector $\mathbf{x}$ such that $A\mathbf{x} = \mathbf{b}$ by finding A^{-1}: