

MAT 242 Written Homework #3

1.4, 1.5

Due: February 8

Solve the following problems, showing any necessary work. **(That means showing your row operations.)**

1. [1 point] Find all ordered pairs such that

$$\begin{bmatrix} x & -2 \\ y & -y \end{bmatrix} \cdot \begin{bmatrix} 0 & x \\ 2 & x \end{bmatrix} = \begin{bmatrix} -4 & 3 \\ 2x & 0 \end{bmatrix}$$

2. [1 point] Find the inverse of the matrix $\begin{bmatrix} 3 & 2 & -3 \\ -6 & -5 & 1 \\ 1 & 1 & 1 \end{bmatrix}$.

3. [1 point] Use your answer to problem (2) to find the solution to the system of linear equations below.

$$\begin{aligned} 3x + 2y - 3z &= -14 \\ -6x - 5y + z &= -40 \\ x + y + z &= 22 \end{aligned}$$