

Name:

Quiz 1

10 May 2006

Write the best answer to each question in the box provided. Show your work.

1. Use Gaussian elimination to solve the linear system. If the system is inconsistent, then say so.

$$\begin{aligned}x_1 + 2x_2 + x_3 &= 3 \\3x_1 - x_2 - 3x_3 &= -1 \\2x_1 + 3x_2 + x_3 &= 4\end{aligned}$$

2. Multiply the two matrices together. If it is not possible to multiply the matrices together, say so.

$$\begin{bmatrix} 3 & 1 & 4 \\ 1 & 0 & 2 \\ 2 & 1 & -1 \end{bmatrix} \begin{bmatrix} 3 & 2 \\ 1 & -1 \\ -2 & 2 \end{bmatrix}$$

3. Let A^{-1} and B^{-1} be the following matrices. Compute $(AB)^{-1}$ and $((AB)^{-1})^T$.

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

$(AB)^{-1} =$

$((AB)^{-1})^T =$