

Math 10B, Quiz 11

1. (9 points) Use Gaussian elimination to reduce the augmented matrix below to one in which the coefficient matrix is upper triangular.

$$\left[\begin{array}{ccc|c} 2 & 4 & 6 & 1 \\ -2 & -2 & -1 & 0 \\ 3 & 12 & 16 & 0 \end{array} \right]$$

2. (2 points) If A and B are the matrices shown below, then AB is defined.

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

True False

3. (2 points) The matrix B in the previous question is invertible.

True False

4. (2 points) For the matrices C and D shown below, D is the inverse of C .

$$C = \begin{bmatrix} 3 & 0 & 2 \\ 2 & 0 & -2 \\ 0 & 1 & 1 \end{bmatrix} \quad D = \begin{bmatrix} 2 & 2 & 0 \\ -2 & 3 & 10 \\ 2 & -3 & 0 \end{bmatrix}$$

True False