

This quiz has three problems worth 10 points.

1. The questions below concern the matrix $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 1 & 0 & 4 \end{bmatrix}$.

(a) (4 points) Use the Gauss-Jordan method to calculate A^{-1} . (That is, you are going to use the augmented matrix $[A \ I]$. There are not a lot of steps in this case!)

(b) (1 point) Do the necessary multiplication to demonstrate that your answer is correct.

(c) (3 points) From your work in part (a), you should be able to **immediately** determine the LU -factorization of A . Write that factorization below.

2. (2 points) Explain how you know that the matrix $B = \begin{bmatrix} 1 & 2 & 3 \\ -5 & 4 & 2 \\ 2 & 4 & 6 \end{bmatrix}$ cannot be invertible.