Math 100 **Quiz 4** Fall 21

Instructions: Please answer the following legibly, logically, and **show all work**. No credit will be given for unjustified or unclear work. When you are finished, please scan your work (or take pictures) and submit via the Assignments link on Canvas.

1. Consider a 4×4 Identity matrix, call it I_4. And let A be an invertible 4×4 matrix.
   (a) Find det I_4.
   (b) Use (a) to find det AA^{-1}.
   (c) Use (b) to show that det $A^{-1} = \dfrac{1}{\det A}$.

2. Use determinants (any method) to find out if matrix A is invertible, and if it is, find A^{-1}.
$$A = \begin{bmatrix} 2 & 3 & 0 \\ 1 & 3 & 4 \\ 1 & 2 & 1 \end{bmatrix}$$

3. Compute det B^5, where $B = \begin{bmatrix} 1 & 0 & 1 \\ 1 & 1 & 2 \\ 1 & 2 & 1 \end{bmatrix}$