AM5801: Computational Lab
Assignment 0
Date: August 07, 2025

<div align="right">Ungraded</div>

1. (a) Write a Python function that computes the inverse of the given 2x2 matrix:

$$\begin{bmatrix} 4 & 7 \\ 2 & 6 \end{bmatrix}$$

Do not use any built-in inverse functions. Instead, use the formula for the inverse of the 2x2 matrix:

$$\text{For A} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{ad-bc} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix} \text{ if } ad - bc \neq 0$$

(b) Generalize your function to handle singular matrices as well.