MAT 211: Linear Algebra
Problem Set 5

Stony Brook University   Fall 2021
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Problem 1. (5+5 points) Compute the inverses of the following matrices:

$$\begin{bmatrix} 3 & 5 & 0 \\ 1 & 2 & 0 \\ 0 & 0 & 1 \end{bmatrix},$$

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

Problem 2. (5 points) Using Problem 1, find the 3×3 matrix X such that

$$\begin{bmatrix} 3 & 5 & 0 \\ 1 & 2 & 0 \\ 0 & 0 & 1 \end{bmatrix} X \begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 1 \\ 0 & 3 & 2 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 4 \\ 0 & 1 & 0 \\ 2 & 0 & 1 \end{bmatrix}.$$

Due Date: Thursday, Oct 21.