21001, Section 01, Linear Algebra and applications
HW 10 (YES!!! THE LAST ONE!!), DUE Wednesday, December 8
Instructor: Prof. Artem Zvavitch
GOOD LUCK!!!

Problem 1. *Fin the transition matrix from basis B to basis B' if*

$$B = \{(1,0,0),(0,1,0),(0,0,1)\}$$

and

$$B' = \{(2,4,-6),(1,-4,-6),(1,2,-1)\}.$$

Problem 2. *Find eigenvalues and corresponding eigenvectors of*
a)

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

b)

$$B = \begin{bmatrix} 6 & -3 & 2 \\ -2 & 1 & 2 \\ 0 & 0 & -3 \end{bmatrix}.$$

Problem 3. *Is it true that matrices A and B from Problem 2 are similar?*

Problem 4. *Please, check if matrices A and B from Problem 2 are diagonalizable. If yes, please, find a corresponding diagonal matrix.*