

Name:

1. Find the exponential, e^{At} , of this matrix: $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ -2 & -2 & -2 \end{bmatrix}$. By the way, A is nilpotent.

2. Find the eigenvalues and eigenvectors of $A = \begin{bmatrix} 1 & 2 \\ 0 & -5 \end{bmatrix}$ and then write A as $A = TDT^{-1}$ (the diagonal transformation).