# Homework #7

Due next Wed

1. Express $A^{-1}$, $A^2$ and all powers of A as a linear combination of A and I, find $e^{tA}$:

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

2. Express $A^{-1}$, $A^2$ and all powers of A as a linear combination of A and I, find $e^{tA}$:

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

3. Express all powers of A as a linear combination of $A^2$, A and I, find $e^{tA}$:

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