

Name:

1. Find the general solution to the following differential equation.

$$\mathbf{x}'(t) = \begin{pmatrix} 2 & 1 \\ 0 & 1 \end{pmatrix} \mathbf{x}(t) + \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

2. Let $A = \begin{pmatrix} 1 & -1 \\ 1 & -1 \end{pmatrix}$. Compute e^{At} .