Assignment #13 ***Math 290*** ***Name:***

1. Determine the general solution to the system $\overrightarrow{x(t)} = A_{n\times n}\overrightarrow{x(t)}$

a) $A = \begin{bmatrix} 1 & -2 \\ 5 & -5 \end{bmatrix}$

b) $A = \begin{bmatrix} -1 & 2 \\ -2 & -1 \end{bmatrix}$

c) $A = \begin{bmatrix} 0 & -3 & 1 \\ -2 & -1 & 1 \\ 0 & 0 & 2 \end{bmatrix}$

d) $A = \begin{bmatrix} 2 & -1 & 3 \\ 2 & -1 & 3 \\ 2 & -1 & 3 \end{bmatrix}$

2. Solve the following IVP of $\overrightarrow{x(t)} = A_{n\times n}\overrightarrow{x(t)}$

a) $A = \begin{bmatrix} -1 & 4 \\ 3 & -3 \end{bmatrix}; \overrightarrow{x(0)} = \begin{bmatrix} 3 \\ 0 \end{bmatrix}$

b) $A = \begin{bmatrix} 2 & -1 & 3 \\ 3 & 1 & 0 \\ 2 & -1 & 3 \end{bmatrix}; \overrightarrow{x(0)} = \begin{bmatrix} -4 \\ 4 \\ 4 \end{bmatrix}$