Math 274 Homework **Name:** _____

Sections: 9.5,9.6 Point Values in boxes.

Due: 6 June 2018

1. [2] Find a fundamental matrix for

$$\mathbf{x}' = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix} \mathbf{x}.$$

2. [3] Find the solution to the initial value problem

$$\mathbf{x}' = \begin{bmatrix} 1 & 2 \\ 0 & 3 \end{bmatrix} \mathbf{x}, \qquad \mathbf{x}(0) = \begin{bmatrix} 1 \\ -1 \end{bmatrix}.$$

3. [2] Find a fundamental matrix for

$$\mathbf{x}' = \begin{bmatrix} 0 & -2 \\ 2 & 0 \end{bmatrix} \mathbf{x}.$$

4. [3] Find the solution to the initial value problem

$$\mathbf{x}' = \begin{bmatrix} 0 & 1 \\ -2 & -2 \end{bmatrix} \mathbf{x}, \qquad \mathbf{x}(0) = \begin{bmatrix} -3 \\ 5 \end{bmatrix}.$$