1. Solve the following initial value problem:

$$\bar{x}' = \begin{bmatrix} 1 & 6 \\ 4 & 3 \end{bmatrix} \bar{x} \text{ with } \bar{x}(0) = \begin{bmatrix} 1 \\ 0 \end{bmatrix}.$$

2. Solve the following initial value problem:

$$\bar{x}' = \begin{bmatrix} 2 & -1 \\ 1 & 4 \end{bmatrix} \bar{x} \text{ with } \bar{x}(0) = \begin{bmatrix} 1 \\ 0 \end{bmatrix}.$$

3. Find the general solution to the following differential equation:

$$\bar{x}' = \begin{bmatrix} 2 & 1 \\ -5 & 2 \end{bmatrix} \bar{x}$$