1. Solve the system \[ \frac{dx}{dt} = x - 3y \]
   \[ \frac{dy}{dt} = 3x + 7y \]

2. Given that \( \lambda = 4 + 3i \) is an eigenvalue of \( A = \begin{pmatrix} 4 & -3 \\ 3 & 4 \end{pmatrix} \), find the general solution of \( X' = AX \).