

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 $X' = AX$.