MAT 239 (Differential Equations), Prof. Swift
The Swift Method for Complex Conjugate Eigenvalues

Use the Swift method to solve the IVP $\dfrac{d\mathbf{x}}{dt} = \begin{bmatrix} 3 & -13 \\ 5 & 1 \end{bmatrix} \mathbf{x}, \quad \mathbf{x}(0) = \begin{bmatrix} 3 \\ -10 \end{bmatrix}.$

Note: Paul does this the hard way in example 3 of his notes on complex eigenvalues.