Eigenvalues (iv)

$$Y(t) = k_1 \begin{bmatrix} 1 \\ 0 \end{bmatrix} + k_2 e^t \begin{bmatrix} 2 \\ 1 \end{bmatrix}$$

Second Order Linear Equations (b)

$$y(t) = 2e^{-2t} \cos(4t) - e^{-2t} \sin(4t)$$

Forced Harmonic... (a)

$$y(t) = k_1 e^{-4t} + k_2 e^{-2t} + \frac{1}{3} e^{-t}$$

Forced Harmonic... (c)

$$y(t) = -\frac{1}{34} e^{-4t} + \frac{1}{10} e^{-2t} + \frac{1}{85} (7 \sin t - 6 \cos t)$$