Quiz 5

1. Find the solution in terms of a convolution integral

$$y'' + 4y = g(t)$$
$$y(0) = 3, \qquad y'(0) = -1$$

2. Transform into a system of first-order differential equations

$$ty'' + ty' + (t^2 - 0.25)y = 0$$

3. Find the eigenvalues and eigenvector of

$$\begin{bmatrix} 3 & -1 \\ 4 & -2 \end{bmatrix}$$