

chpt 10  
#5)

Find the eigenvalues of the matrix

$$\begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & \omega + 1 + \frac{1}{\omega} \\ 0 & 1 & -\omega - 1 - \frac{1}{\omega} \end{bmatrix}$$

where  $\omega = e^{2\pi i/3}$

Answer.

$$\lambda = 1, \omega, \omega^2 (= \bar{\omega})$$