

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$\det(A - \lambda I) = 0$$

$$\det \begin{pmatrix} 1-\lambda & 0 & 0 \\ 0 & 1-\lambda & 0 \\ 0 & 0 & -\lambda \end{pmatrix} = 0$$

$$= (1-\lambda)\lambda = 0$$

$$\rightarrow \begin{array}{l} \lambda_1 = 0 \\ \lambda_2 = 1 \end{array}$$