

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

$$\chi_A(\lambda) = |A - \lambda I|$$

$$\lambda = 1, 0, 0$$

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

$$\chi_A(\lambda) = (\lambda - 1)\lambda^2$$

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

$$\neq m | \chi$$

$$\chi_B(\lambda) = (\lambda - 1)\lambda^2$$