

Ex 03. On pose $A = \begin{pmatrix} 1 & a & b \\ 0 & 1 & c \\ 0 & 0 & d \end{pmatrix}$.

A est diag. str

$$P(\lambda) = (1-\lambda)(d-\lambda)$$

$$Q(\lambda) = (1-\lambda)(\lambda-d)$$

i.e. $Q(A) = (A - I_3)(A - dI_3) = 0$

$$\begin{pmatrix} 0 & a & b \\ 0 & 0 & c \\ 0 & 0 & d \end{pmatrix} \begin{pmatrix} 1-d & a & b \\ 0 & 1-d & c \\ 0 & 0 & 0 \end{pmatrix} = 0$$

$$\Rightarrow \begin{pmatrix} 0 & a(1-d) & ac \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{pmatrix} = 0_3$$

$$\Rightarrow \begin{cases} a(1-d) = 0 \\ ac = 0 \end{cases}$$

$$\Rightarrow \boxed{\begin{matrix} (a=0) \text{ ou bien} \\ (c=0 \text{ et } d=1) \end{matrix}}$$