Valores e vectores próprios - Diagonalização - $\Lambda = S^{-1}AS$

A	Polonómio característico	Valores próprios	Vectores próprios	$\dim E(\lambda)$	Diagonalizável ?	Λ (Forma diagonal)	S (Diagonalizante)
1 $\begin{bmatrix} 2 & 1 & 1 \\ 2 & 3 & 4 \\ -1 & -1 & -2 \end{bmatrix}$	$-(\lambda+1)(\lambda-1)(\lambda-3)$	$\lambda_1 = -1$ $\lambda_2 = 1$ $\lambda_3 = 3$	$u_1 = (0,1,-1)$ $u_2 = (1,-1,0)$ $u_3 = (2,3,-1)$	1 1 1	Sim	$\begin{bmatrix} -1 & & \\ & 1 & \\ & & 3 \end{bmatrix}$	$\begin{bmatrix} 0 & 1 & 2 \\ 1 & -1 & 3 \\ -1 & 0 & -1 \end{bmatrix}$
2 $\begin{bmatrix} 2 & 1 & 1 \\ 2 & 3 & 2 \\ 3 & 3 & 4 \end{bmatrix}$	$-(\lambda-1)^2(\lambda-7)$	$\lambda_1 = \lambda_2 = 1$ $\lambda_3 = 7$	$u_1 = (1,0,-1)$ $u_2 = (0,1,-1)$ $u_3 = (1,2,3)$	2 1	Sim	$\begin{bmatrix} 1 & & \\ & 1 & \\ & & 7 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \\ -1 & -1 & 3 \end{bmatrix}$
3 $\begin{bmatrix} 2 & -1 & 1 \\ 0 & 3 & -1 \\ 2 & 1 & 3 \end{bmatrix}$	$-(\lambda-2)^2(\lambda-4)$	$\lambda_1 = \lambda_2 = 2$ $\lambda_3 = 4$	$u_1 = (1,-1,-1)$ $u_3 = (-1,1,-1)$	1 1	Não		
4 $\begin{bmatrix} 4 & 1 & -1 \\ 0 & 3 & 1 \\ 2 & 1 & 5 \end{bmatrix}$	$-(\lambda-4)^3$	$\lambda_1 = \lambda_2 = \lambda_3 = 4$	$u_1 = (1,-1,-1)$	1	Não		