$B = \{v_1, \ldots, v_n\}$ base , B' base, f tl $\qquad$ Im A = Cols A

$C(E,B) = \left((e_1)_B \mid \cdots \mid (e_n)_B \right)$ $\qquad$ $[f]_{BB'} = \left(f(v_1)_{B'} \mid \cdots \mid f(v_n)_{B'} \right)$

Mono: iny $(\text{Nu}f = \{0\})$ | Epi: sobre $\qquad$ $[f]_{EE} = C(B,E) \, [f]_{BB} \, C(B,E)$

tl: $f: V \to W$ $\quad$ $\dim V = \dim \text{Im} f + \dim \text{Nu} f$ $\qquad$ A sdp $\Rightarrow$ $^{-1}$) sdp

Cholesky: SDP $\quad A = LL^t$ $(l_{ii} > 0)$ $\qquad$ SDP: $\quad x^t A x > 0$ ó $\det \, ^{-1}\!\rfloor > 0$

A dp $\Rightarrow A^t$ dp ; A sdp $\Rightarrow A$ inversible, A sdp $\Rightarrow A^t A$ sdp, A sdp $\Rightarrow A$ tiene LU

G. Sm. $\quad a = v_1$, $\quad b = v_2 - \underbrace{\dfrac{\langle a, v_2 \rangle}{\|a\|_2^2} \cdot a}_{\text{Proj}_a (v_2)}$, $\quad c = v_3 - \underbrace{\dfrac{\langle a, v_3 \rangle}{\|a\|_2^2} \cdot a}_{\text{Proj}_a (v_3)} - \underbrace{\dfrac{\langle b, v_3 \rangle}{\|b\|_2^2} \cdot b}_{\text{Proj}_b (v_3)}$

Householder: $H = I - 2 u u^t$ $\quad$ con $\quad u = \dfrac{v - \omega}{\|v - \omega\|}$ $\quad$ con $\|v\|_2 = \|\omega\|_2$ y $\|u\| = 1$

$\qquad$ $Hv = \omega$ y $H\omega = v$: Reflex. wrt plano ortog. a u

Proyectores: $f \circ f = f$, $[f]_B^2 = [f]_B$, $\text{Nu}f \oplus \text{Im}f = V$ $\quad$ $v \in \text{Im}f \Rightarrow f(v) = v$

Proy. Ortog: $[P_s]_{EE} = \sum v_i v_i^t$ $(v_i \in \text{BON de } S)$ $\quad$ $\text{Nu}f = \text{Im}f^{\perp}$ $\begin{smallmatrix}\text{Complemento}\\\text{ortog.}\end{smallmatrix}$

$A \cdot v = \lambda v$ $\qquad$ λ^k es avd de A^k con avec. v $\qquad$ tr $A = \sum \lambda_i$

$\chi_A(\lambda) = \det(\lambda I - A)$ $\qquad$ $A^k = C \cdot D^k \cdot C$ $\qquad$ $\det A = \Pi \lambda_i$

$\text{Nu}(\lambda I - A)$ $\qquad$ B base de avecs $\Rightarrow [f]_{BB} = \begin{bmatrix} \lambda_1 & & 0 \\ & \ddots & \\ 0 & & \lambda_n \end{bmatrix}$

$\det A^t = \det A$ $\qquad$ λ avd de $A^t \Rightarrow \lambda$ avd de A $\qquad$ $\|\alpha X\| = |\alpha| \|X\|$

$\det \alpha A = \alpha^n \det A$ $\qquad$ λ avd de $A^{-1} \Rightarrow \frac{1}{\lambda}$ avd de A $\qquad$ $\|x + y\| \le \|x\| + \|y\|$

$\det AB = \det A \det B$ $\qquad$ λ avd de $A \Rightarrow 2\lambda$ avd de $2A$

$\det A^{-1} = \dfrac{1}{\det A}$ $\qquad$ $\langle x, ay + bz \rangle = a \langle x, y \rangle + b \langle x, z \rangle$

$(AB^t)^t = BA^t$ $\qquad$ $(AB^{-1})^{-1} = BA^{-1}$