$B = \{v_1, \dots, v_n\}$ base, B' base, f tl $\mathrm{Im}\, A = \mathrm{Col}_s\, A$

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

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

tl: $f: V \to W$ $\dim V = \dim \mathrm{Im} f + \dim \mathrm{Nu} f$

A sdp $\Rightarrow$ ⅃ sdp

Cholesky: SDP $A = LL^t$ ($l_{ii} > 0$)   SDP: $x^t A x > 0$ ó det ⅃ > 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. $a = v_1$, $b = v_2 - \underbrace{\frac{\langle a, v_2 \rangle}{\|a\|_2^2} \cdot a}_{\mathrm{Proj}_a(v_2)}$, $c = v_3 - \underbrace{\frac{\langle a, v_3 \rangle}{\|a\|_2^2} \cdot a}_{\mathrm{Proj}_a(v_3)} - \underbrace{\frac{\langle b, v_3 \rangle}{\|b\|_2^2}\, b}_{\mathrm{Proj}_b(v_3)}$

Householder: $H = I - 2uu^t$ con $u = \frac{v - w}{\|v - w\|}$ con $\|v\|_2 = \|w\|_2$ y $\|u\| = 1$

$Hv = w$ y $Hw = v$: Reflex. wrt plano ortog. a u

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

Proy. Ortog: $[P_S]_{EE} = \sum v_i v_i^t$ ($v_i \in$ BON de S) $\mathrm{Nu} f = \mathrm{Im} f^{\perp}$ Complemento ortog.

$A \cdot v = \lambda v$ λ^k es aval de A^k con avec. v $\mathrm{tr}\, A = \sum \lambda_i$

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

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

$\det A^t = \det A$ λ aval de $A^t \Rightarrow \lambda$ aval de A $\|\alpha x\| = |\alpha|\,\|x\|$

$\det \alpha A = \alpha^n \det A$ λ aval de $A^{-1} \Rightarrow 1/\lambda$ aval de A $\|x + y\| \leq \|x\| + \|y\|$

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

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