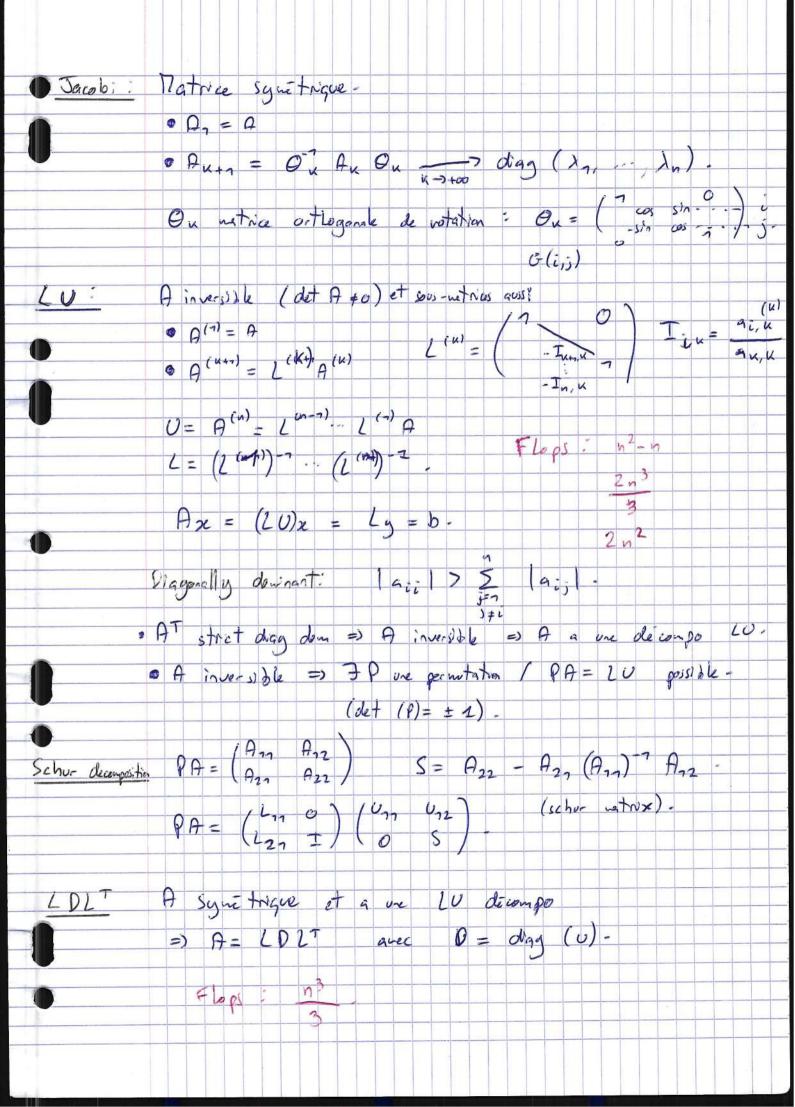
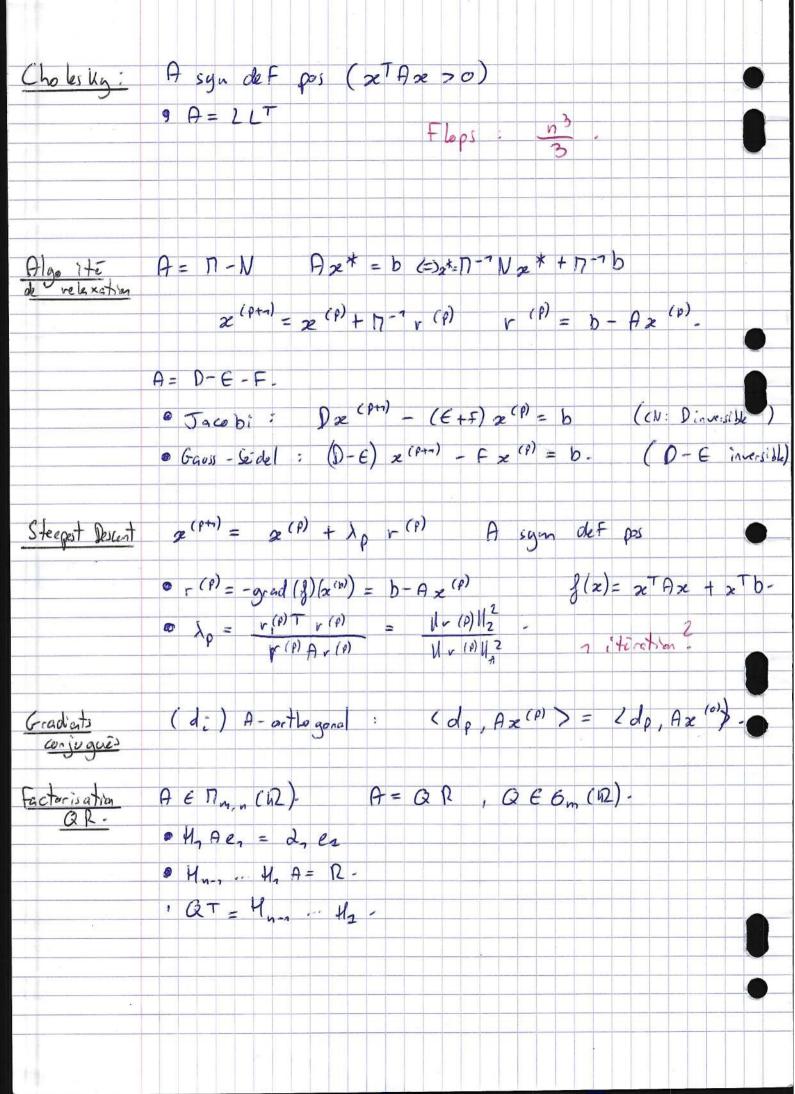
Calcul Selenti Figure SUD: A = UZUT UE Gm(IR) ∑ ∈ 17m, (12) VEBn (A) 50 = TA: VP de ATA. @ ATA squetrique sen def pos ● up de ATA positives ou nolles a Ver (9TA) = Ver (A) O In (ATA) = In (AT) O ATA inversible ( ) vg (A) = n -Pseudo-inverse! A+ = V E+UT • AA+A = A • (AT) += (A+)T. · A+AA+=A+ · (AA+) = AA+ · (A+A)T = A+A  $(P): \underset{z \in \mathbb{R}^n}{\text{win}} f(z) = \frac{7}{2} \mathbb{N} A_z - b \mathbb{N}_z^2$ Vf (a) = AT (Az -b) H f(x) = ATA: sew de & pos => f convexe ser 12 =) wings = points ortiques. Atb est solution de (P)e m = n = v => A+ = A-2 · m = r , m > n => A + = (ATA)-7 AT • m=r m < n = ) A = A T (A AT) -2

Avec un observations: Estimation & (n, ge) = 6 Viegre =) GTz= b Con clarche win & (20) = 7 47x-61/2 =) z = A+b. Approximation: A E Mm, m (12), vg (4)= v - $A = \sum_{i=1}^{5} \sigma_i v_i v_i T$   $A = \sum_{i=1}^{5} \sigma_i v_i v_i T$   $0 VA - A_1 V_2 = \sigma_{11}$ (P): in f 11A-x11 . Au solution de (P). XETTAL (12) Conditionneunt K(A) = MAN MA-711 (A inversible, MAN = Sup MAXII) · K(2A)= K(A) 0 K(A) 2 1 · K2 (A) = MAM2 MA-7 1/2 = 07 on · W2 (A)= 1 (=) A= 2U U € 6n(R)-Perturbations: 2/Aze = b- y= 2+12-• b: y tel que Ay = b + bb.  $\frac{11000}{000} \le k(4) \frac{11000}{000}$  $\phi A : (A + \Delta A)g = b - \frac{1125211}{112411} + \frac{112411}{112411}$ S: K(a) MOAN &1: NORN & K(a) NAN 7- K(4) MAN Backwad Error Ber = MAR-5 N2 NAMUZU+11611 Power nethod o Traver in coople (1, v) · Retirer le couple des couples à trouver.





Move Lalder	$\forall v \in \mathbb{R} \setminus \{e\}$ , $H_v = I - \frac{2}{\sqrt{1}v} \cup \sqrt{1}$
he tace	
U	O M, T = MU
	€ H <sub>0</sub> -1= H <sub>0</sub> T
	· Mu v = v et Mu x = x x x 1 v
	● Vx ≠0, 3 5 ≠0, 3 v € 12 1/503 / Yv 2 = -5 e2
	$\sigma = s'gn(z_1) \forall z \forall v = z + \sigma e_1.$
0	
	Flops: 4 n3
Given	$G(n, y) = 1 \cdot 2 \cdot 0 \cdot 0$
rotation	$G(7, 4) = \begin{pmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{pmatrix}$ = $\begin{cases} 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \end{cases}$ = $\begin{cases} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{cases}$ = $\begin{cases} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 &$