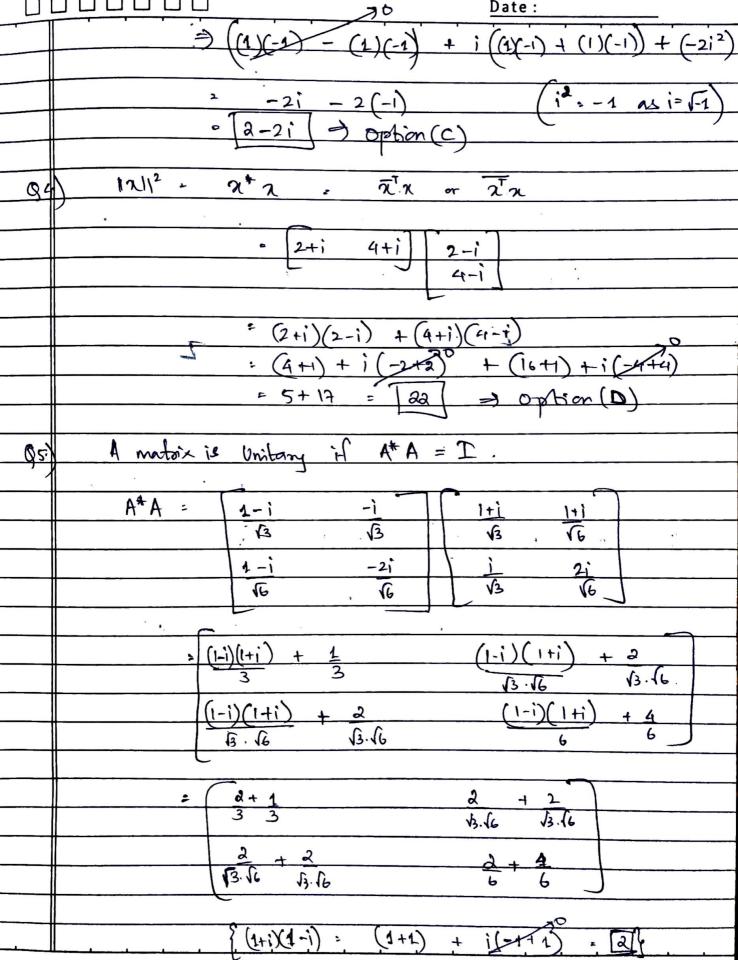
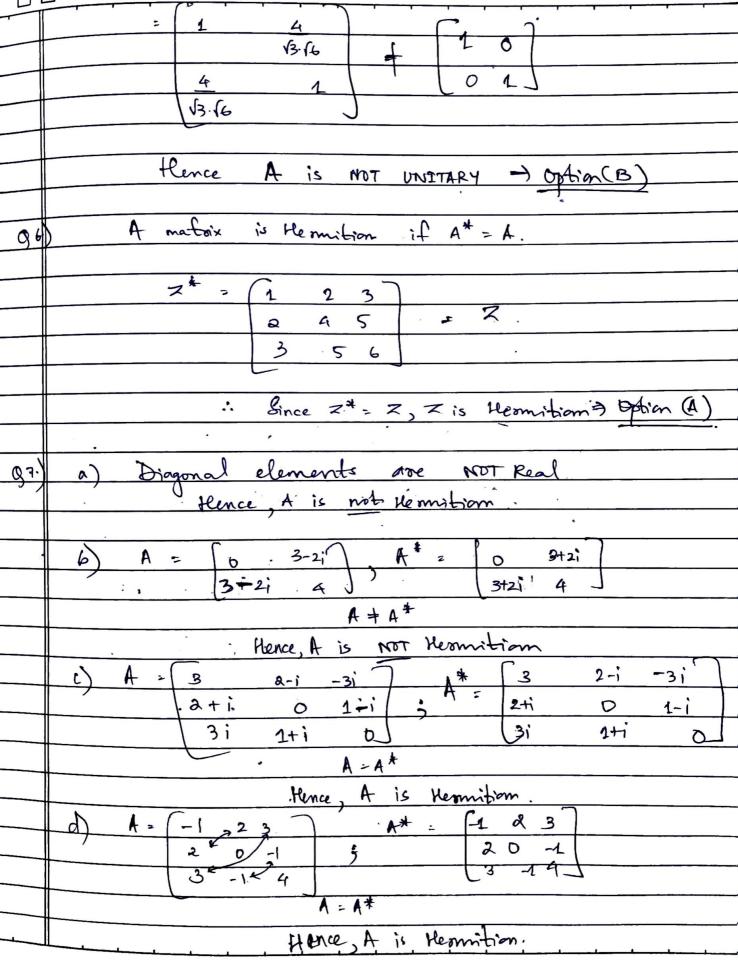
91.) Complex conjugate of (a+ib) = (a-ib) & vice versa Applying to every term of given matrix:

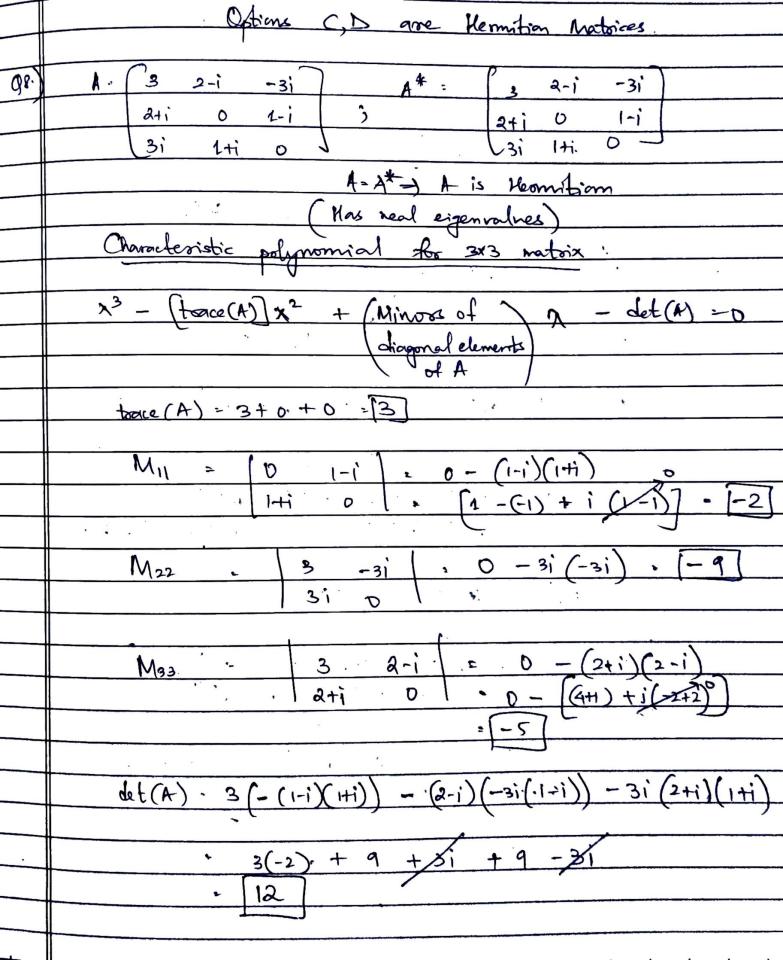
Complex conjugate of 1-1; = 1+1;

Complex conjugate of 1-3; = 1+3;

Complex conjugate of 6+4; = 6-4; Complex conjugate of 35-2i = 35+2i · Complex conjugate moderix = 1+i 1+3i 6-41 35+21 =) optim(B) Q2: A = 3+ai 5-i $\overline{A}^{T} > \overline{A}^{T} = 3+2i$ 1-4i sption(D) $5-i \quad 3+2i$ Inner product of xly = xiy = xty 7.y = x+y Kemember, (a+ib)(c+id) - (ac-bd) + i (ad+bc)







Moreovery the values into eq. (1) we get

$$A^{3} - 3\lambda^{2} + (-2 - 9 - 5) \lambda = (12) > 0$$
 $\lambda^{3} - 3\lambda^{2} - 16\lambda - 12 > 0$

Coldions are $\begin{bmatrix} 6 & 1 & -1 \\ 5 & -1 & -2 \end{bmatrix}$

Eigenvalues are $-1 & 6 & -1 \\ 1 + 1 & 1 - 1 \end{bmatrix}$

for a matrix by the Unitary, $A^{4}A = 1$
 $A^{4}A = k \begin{bmatrix} 1 - i & 1 + i \\ 1 + i & 1 - i \end{bmatrix}$
 $k^{2} \begin{bmatrix} (1 - i)(3 + i) \\ (1 + i) \end{bmatrix} + (4 + i)(1 - i) \begin{bmatrix} (1 - i)(4 + i)(1 - i) \\ (1 + i)(1 - i) \end{bmatrix} + (4 - i)(1 - i)(1 + i)$
 $k^{2} \begin{bmatrix} (1 - i)(3 + i) \\ (4 + i)(1 - i) \end{bmatrix} + i(3 + i)(1 - i)(1 - i)(1 + i)$
 $k^{2} \begin{bmatrix} (1 - i)(1 + i) \\ (2 + i)(1 - i)(1 + i) \end{bmatrix} + i(3 + i)(1 - i)(1 - i)(1 + i)$
 $k^{2} \begin{bmatrix} (1 - i)(1 + i) \\ (2 + i)(1 - i)(1 + i) \end{bmatrix} + i(3 + i)(1 - i)(1 - i)(1 - i)$
 $k^{2} \begin{bmatrix} (1 - i)(1 - i) \\ (1 - i)(1 - i) \end{bmatrix} + i(3 + i)(3 + i)(3$

$$\frac{d_{1} + (i+i) n_{2} - 0}{(1-i)^{2}_{1} + 2n_{2} - 0}$$

$$\frac{(4-i)n_{1} + 2n_{2} + 0}{(4-i)n_{1} + 2n_{2} + 0}$$

$$\frac{(4-i)n_{1} + 2n_{2} + 0}{(4-i)^{2}_{1} + (-1)^{2}_{$$

