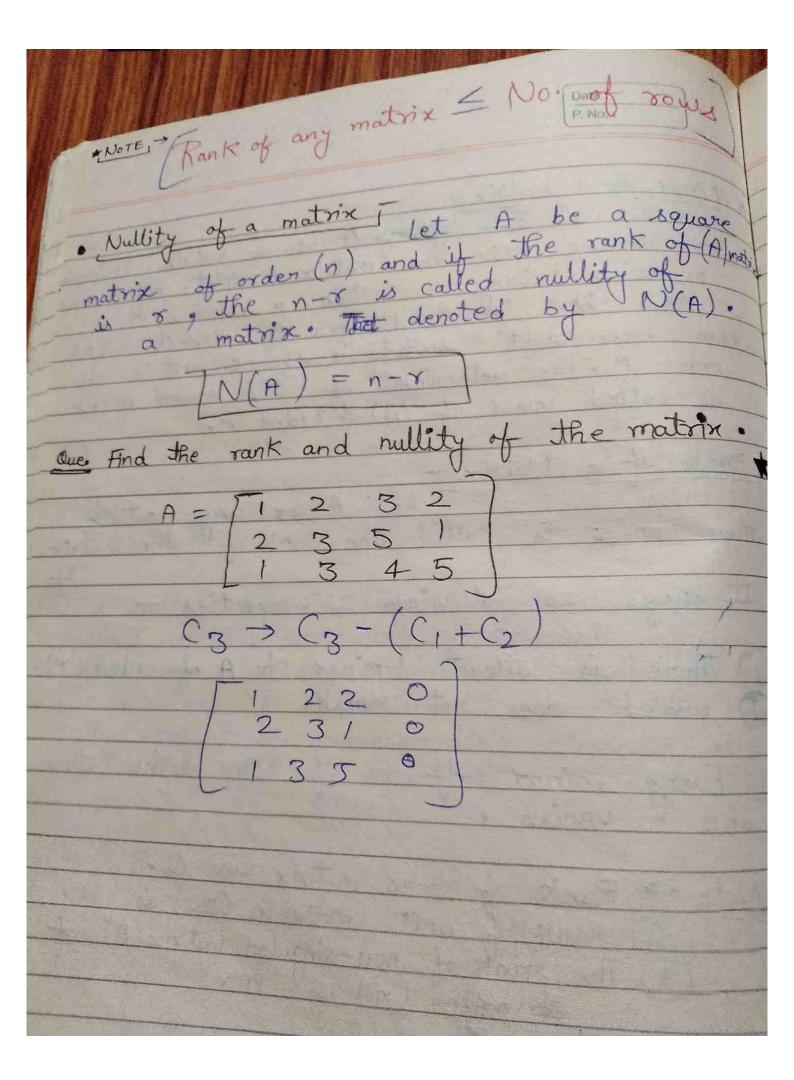
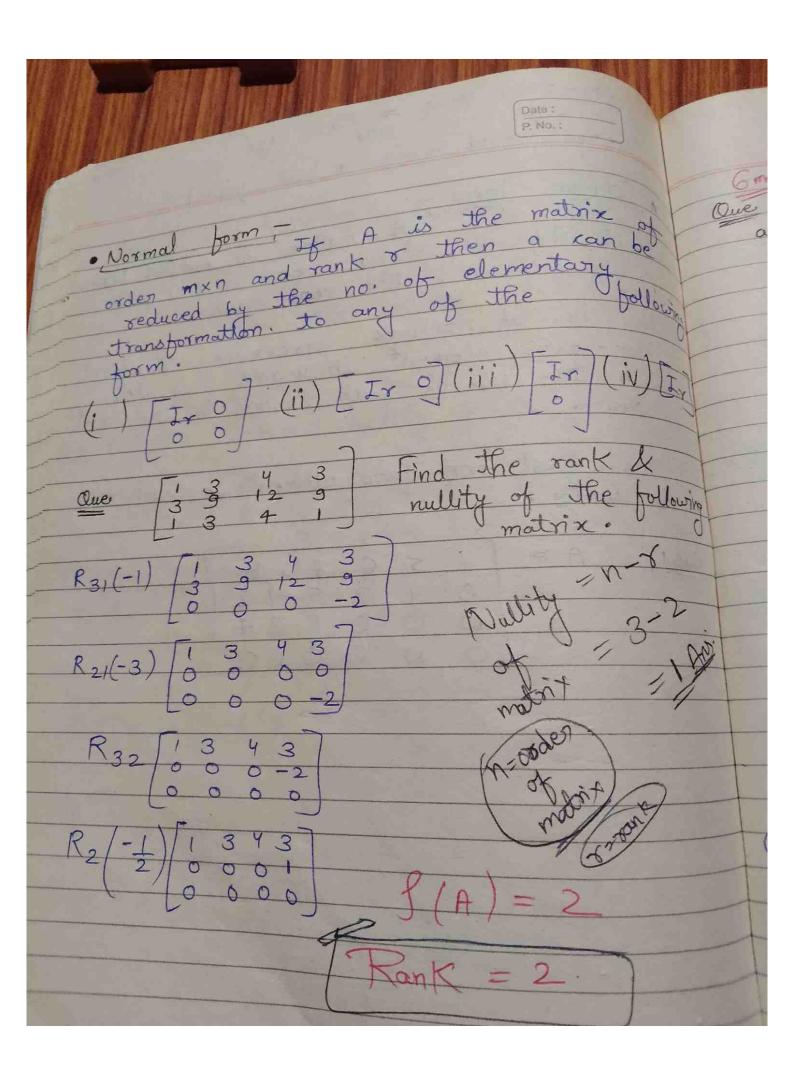


Minor of a matrix
het and be a matrix rectangular

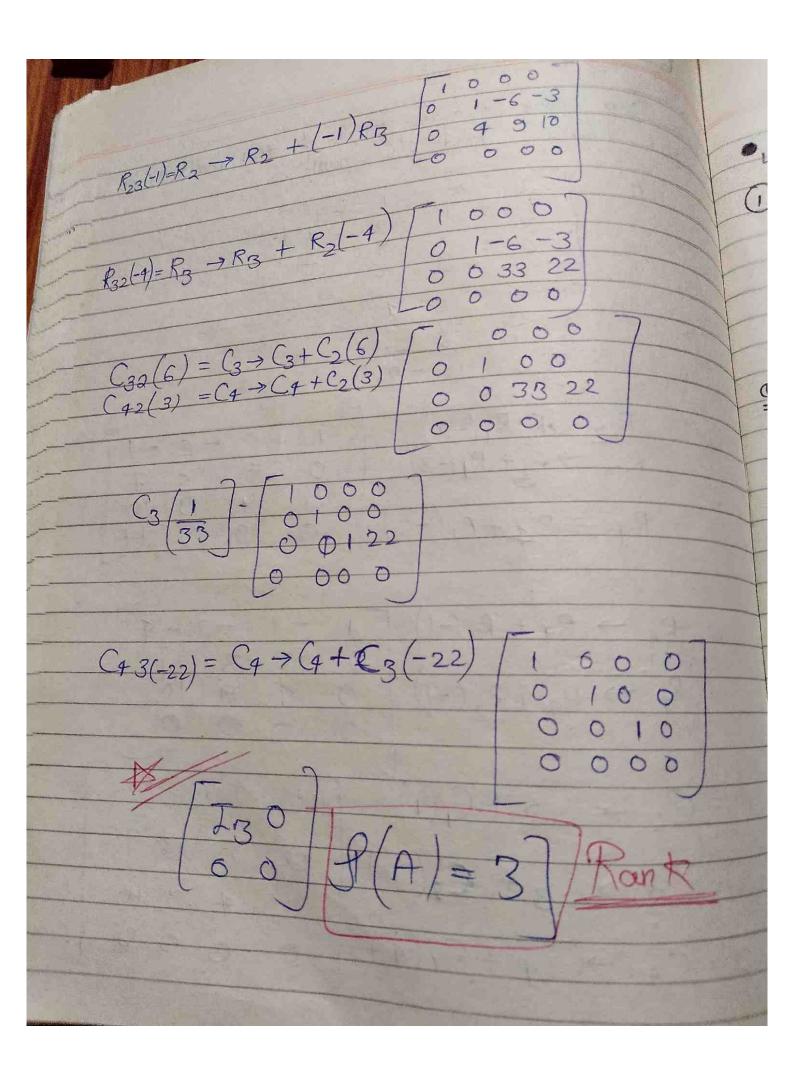
or square from this matrix A delete all colomns or rows leaving a certain p columns & p rows how if P>1, then the elements which have been left consitute a square matrix of enoted order P. The determinant of this square matrix is called minor of (A) of order P. * Rank of a Matrix - Let A be any matrix estant then no. or is called the rank of the matrix. it obeys to following 2 proporties -There is atteast 1 minor of A of order (8). which does not vanish. (2) Every minor of A of order higher than are vanish. # Note of Rank of zero matrix is 0. (2) Rank of unit matrix (In) is n. 3) The rank of non-singular matrix (A) of cooler (n) is n. Sonce (A) +0. 4) The rank of matrix (A) is denoted by symbol S(A).

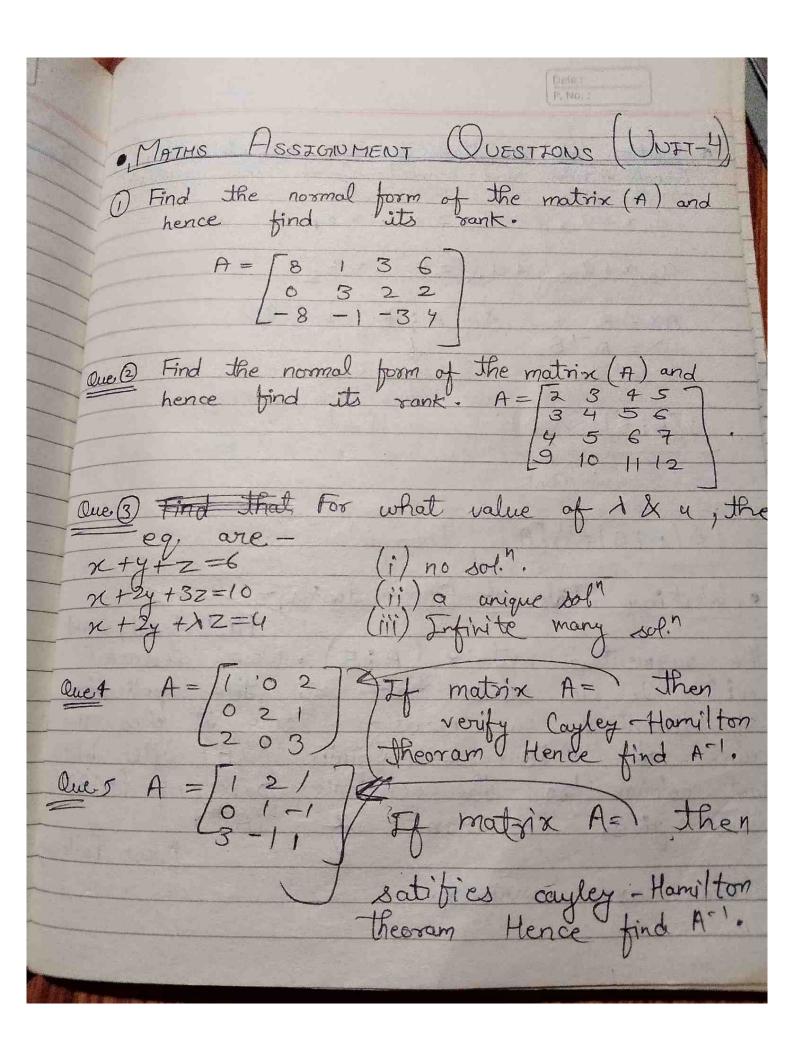


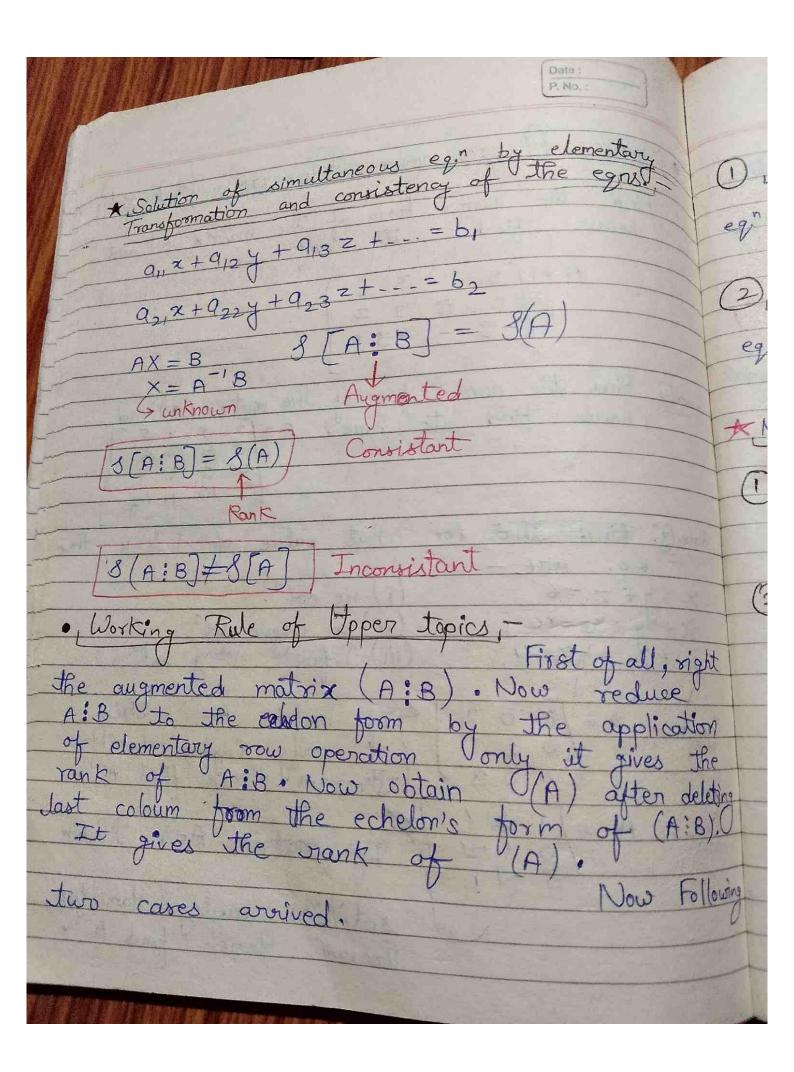
Non-zero rows = Rank hogi Mark "IMP" Toma Ka best form DA matrix is called Echelon form. If all the non-zero nows, if The no. of zeroes preceeding the first than the no. of such zeroes in the next 570W . The first non-zero element in each row 6 708 Que 11

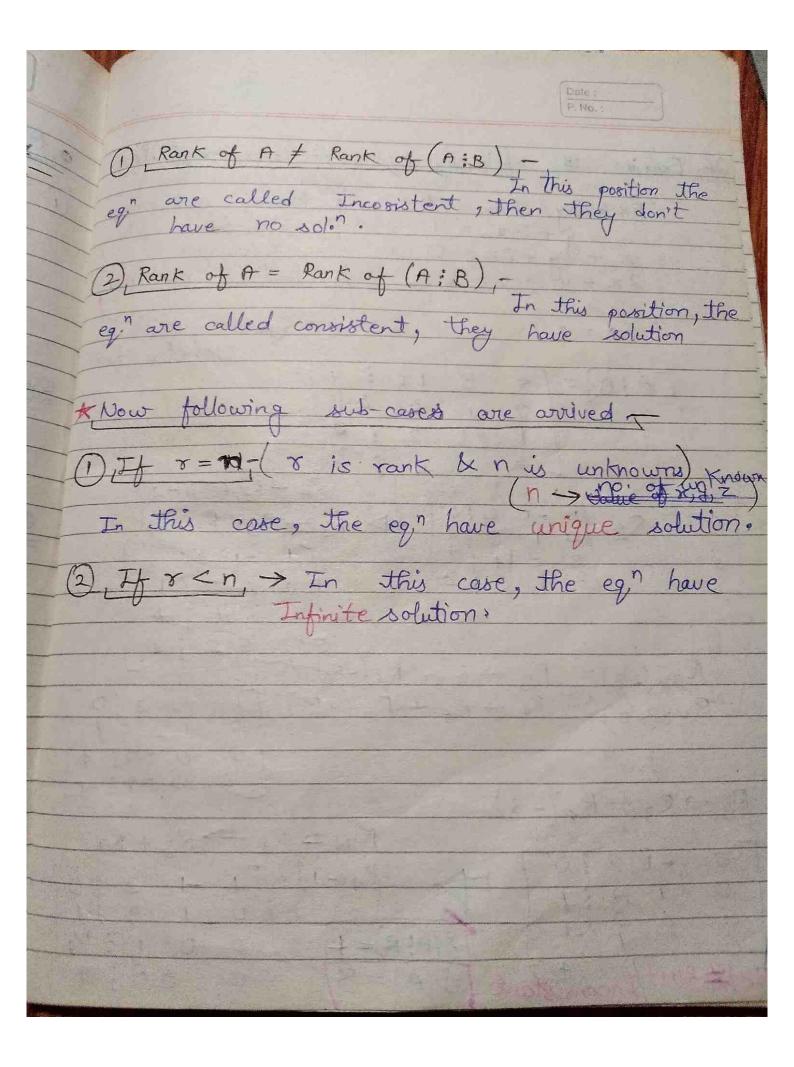


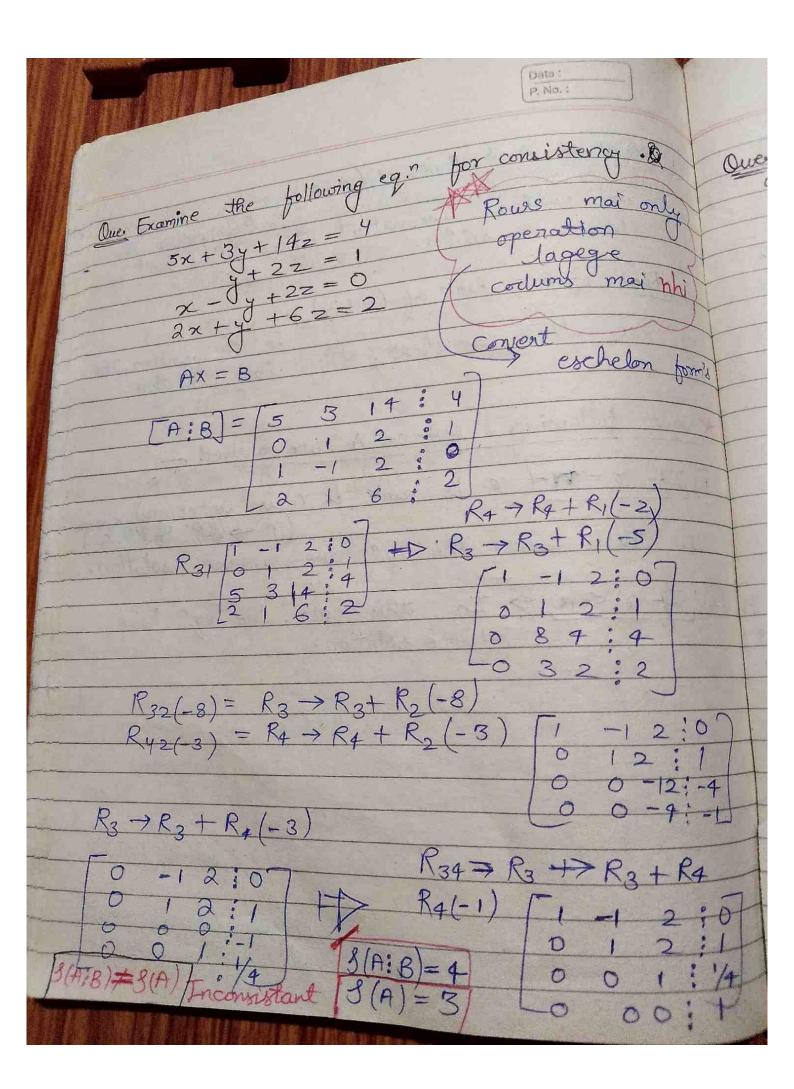
Convikes the find the normal form of the matrix (A) One Find the normal form of the matrix (A) and hence find its stank. $A = \begin{bmatrix} 2 & 3 & -1 & -1 \\ -1 & -2 & -4 \\ 3 & 3 & -2 \\ 3 & 0 & -7 \end{bmatrix}$ Results Results	
wing $R_{2} \rightarrow R_{2} + R_{1}(-2) \qquad [1 - 1 - 2 - 4]$ $R_{3} \rightarrow R_{3} + R_{1}(-3) \qquad 0 \qquad 5 \qquad 3 \qquad 7$ $R_{4} \rightarrow R_{4} + R_{1}(-6) \qquad 0 \qquad 9 \qquad 12 \qquad 17$	
$R_{4} \rightarrow R_{4} + R_{3}(-1) \begin{bmatrix} 1 & -1 & -2 & -4 \\ 0 & 5 & 3 & 7 \end{bmatrix}$ $R_{4} \rightarrow R_{4} + R_{2}(-1) \begin{bmatrix} 0 & 4 & 9 & 10 \\ 0 & 0 & 0 & 0 \end{bmatrix}$	
$C_{21}(1) = C_{2} \rightarrow C_{2} + C_{1}(1)$ $C_{21}(2) = C_{3} \rightarrow C_{3} + C_{4}(2)$ $C_{31}(2) = C_{3} \rightarrow C_{3} + C_{4}(2)$ $C_{41}(4) = C_{4} \rightarrow C_{4} + C_{1}(4)$ $C_{41}(4) = C_{4} \rightarrow C_{4} + C_{1}(4)$ $C_{41}(4) = C_{4} \rightarrow C_{4} + C_{1}(4)$	

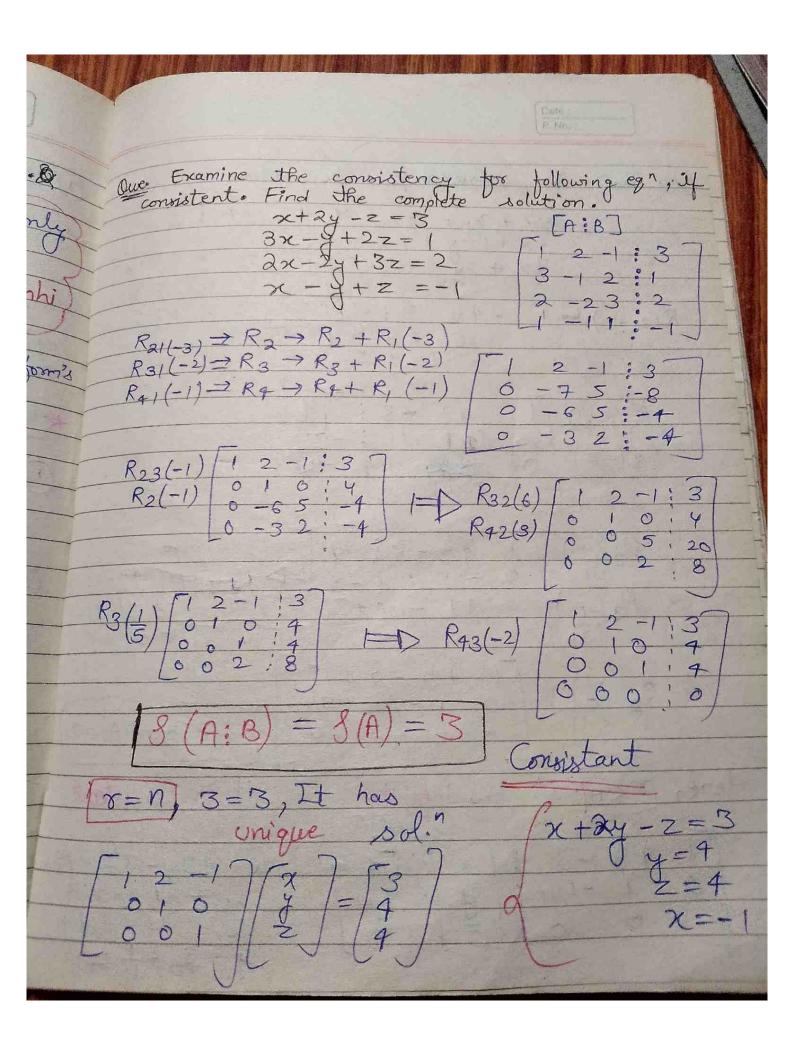


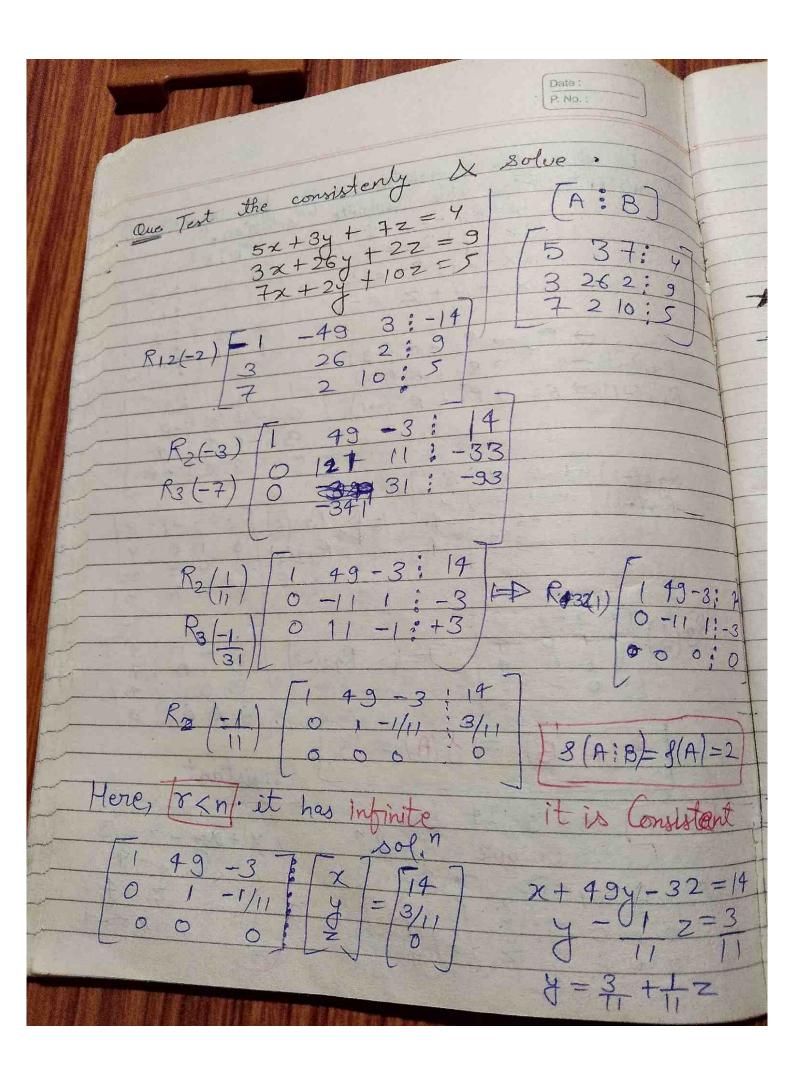


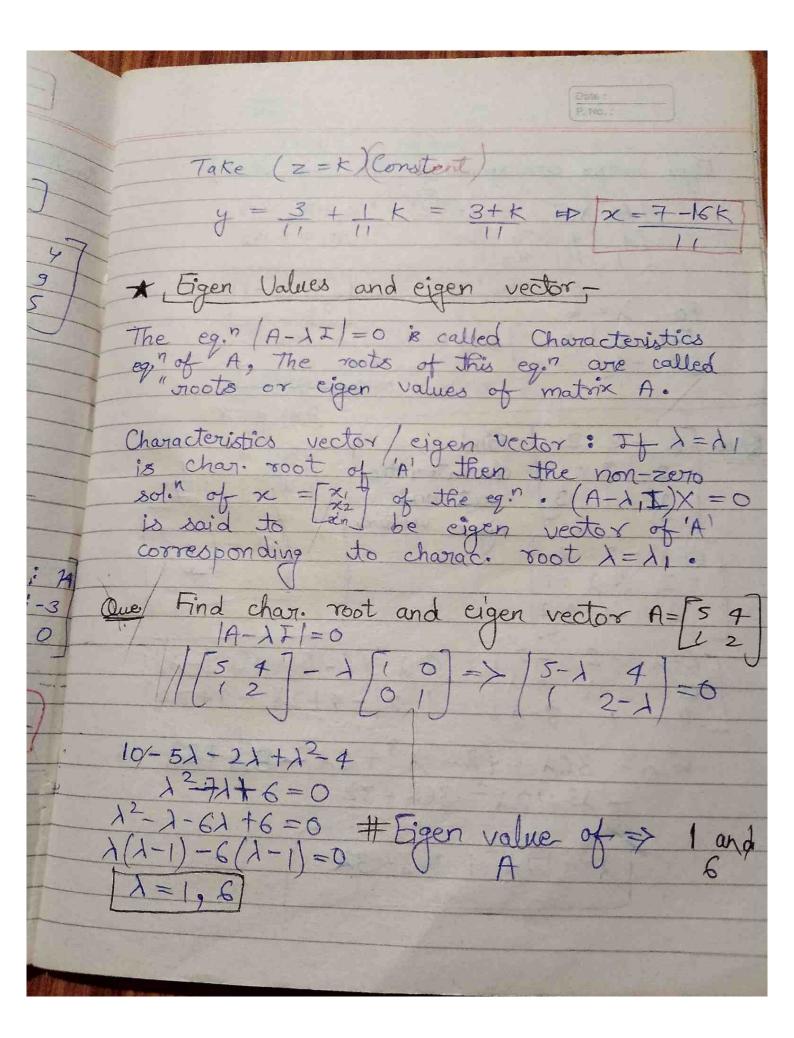


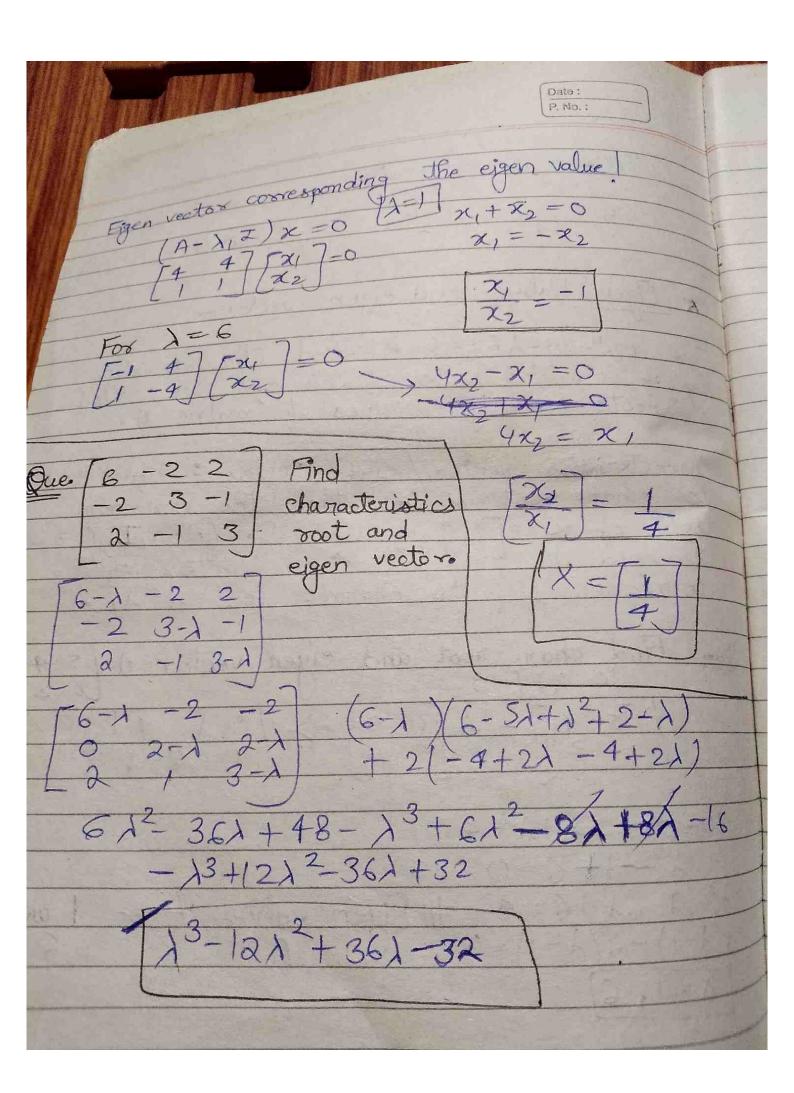


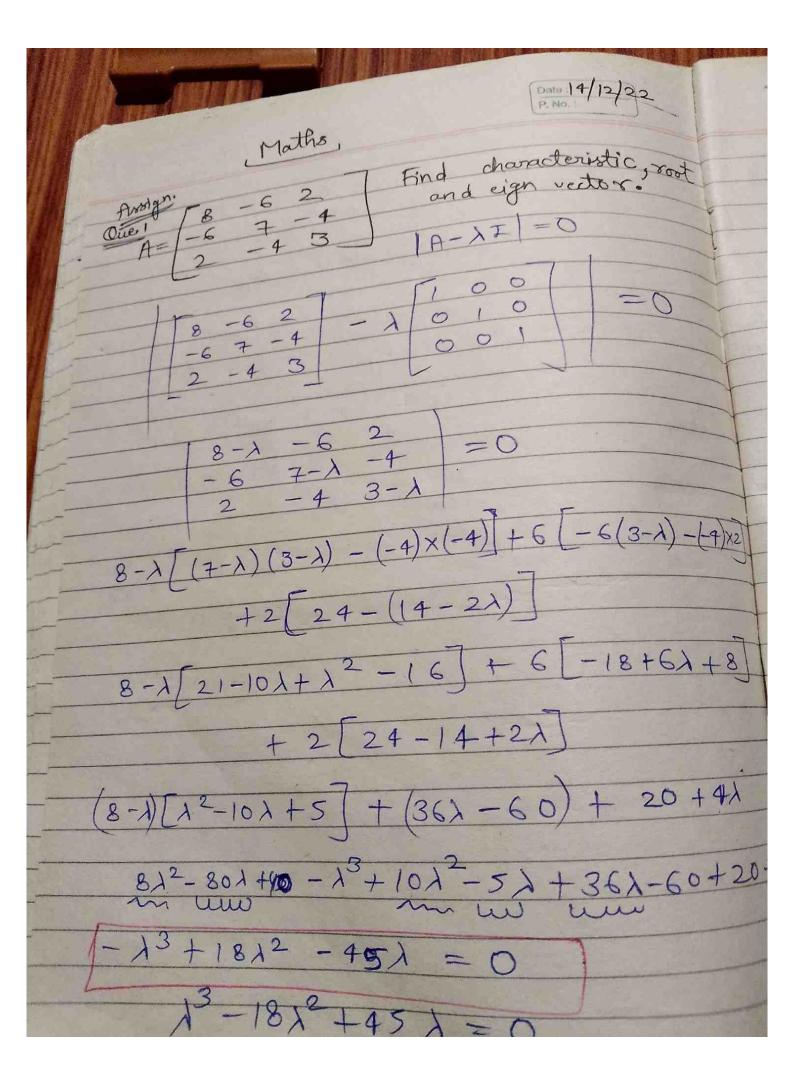


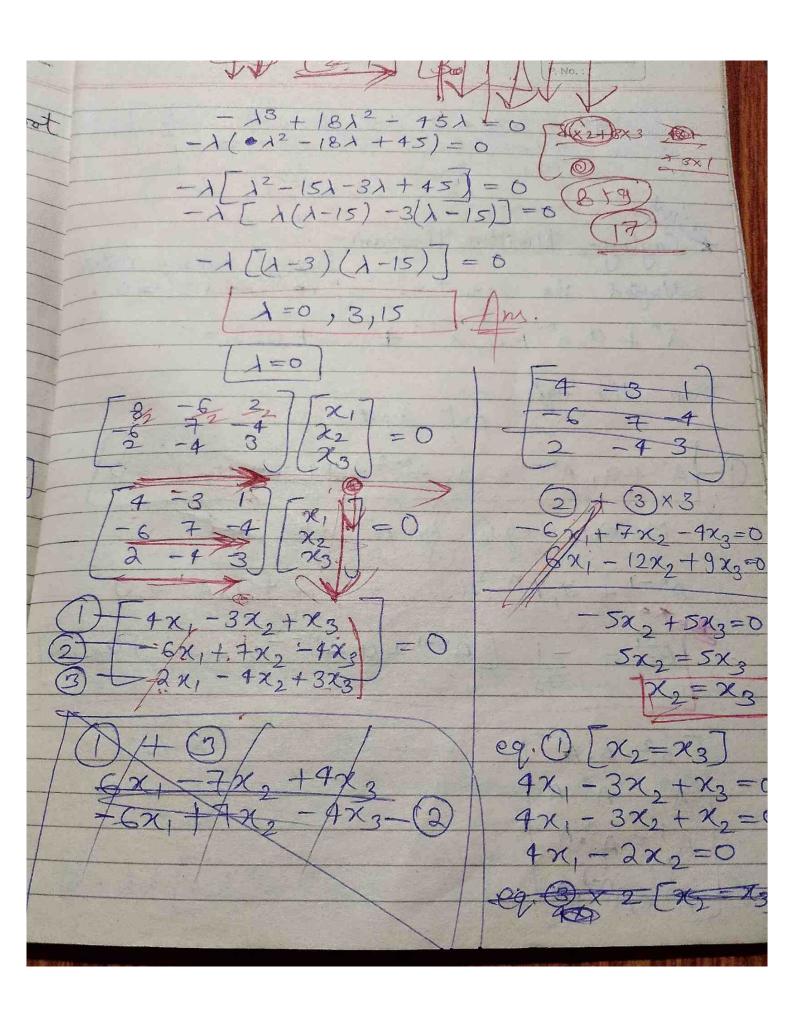


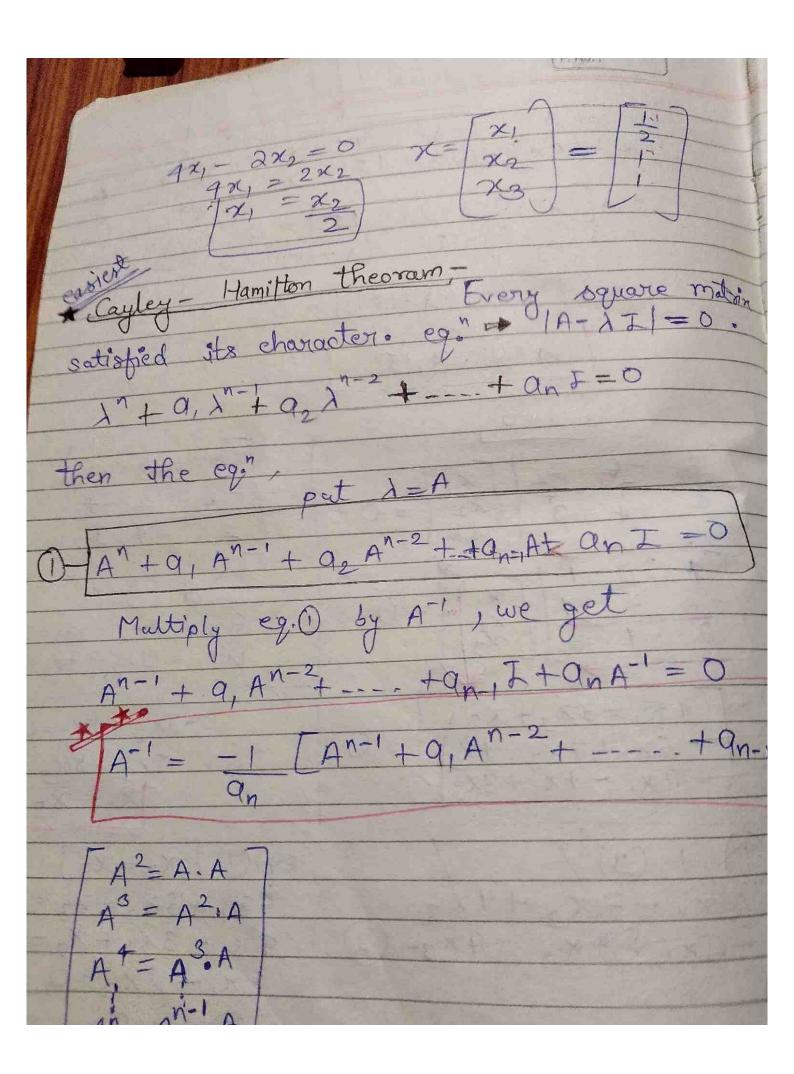


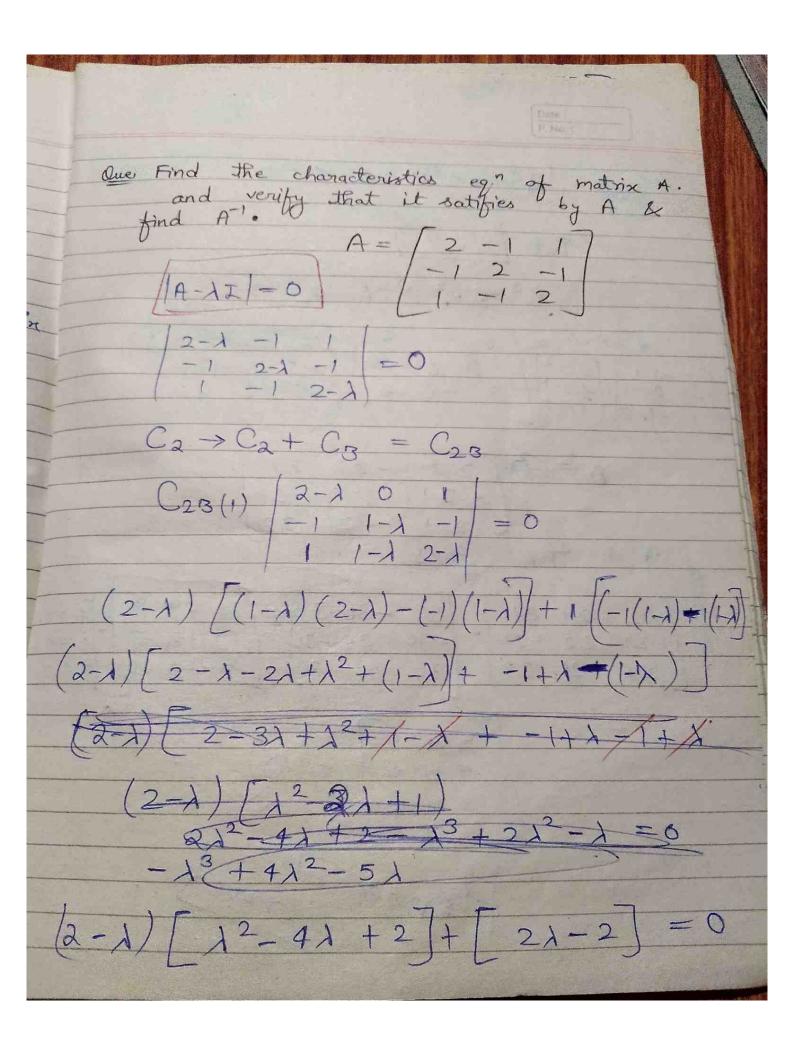


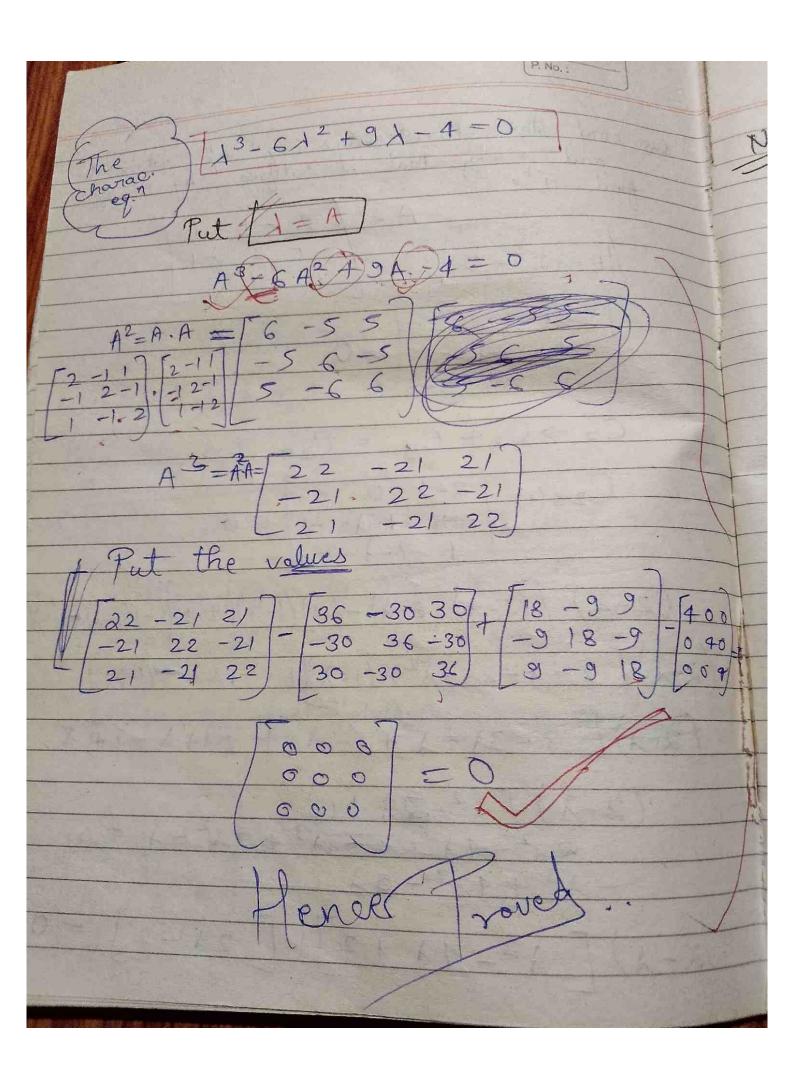


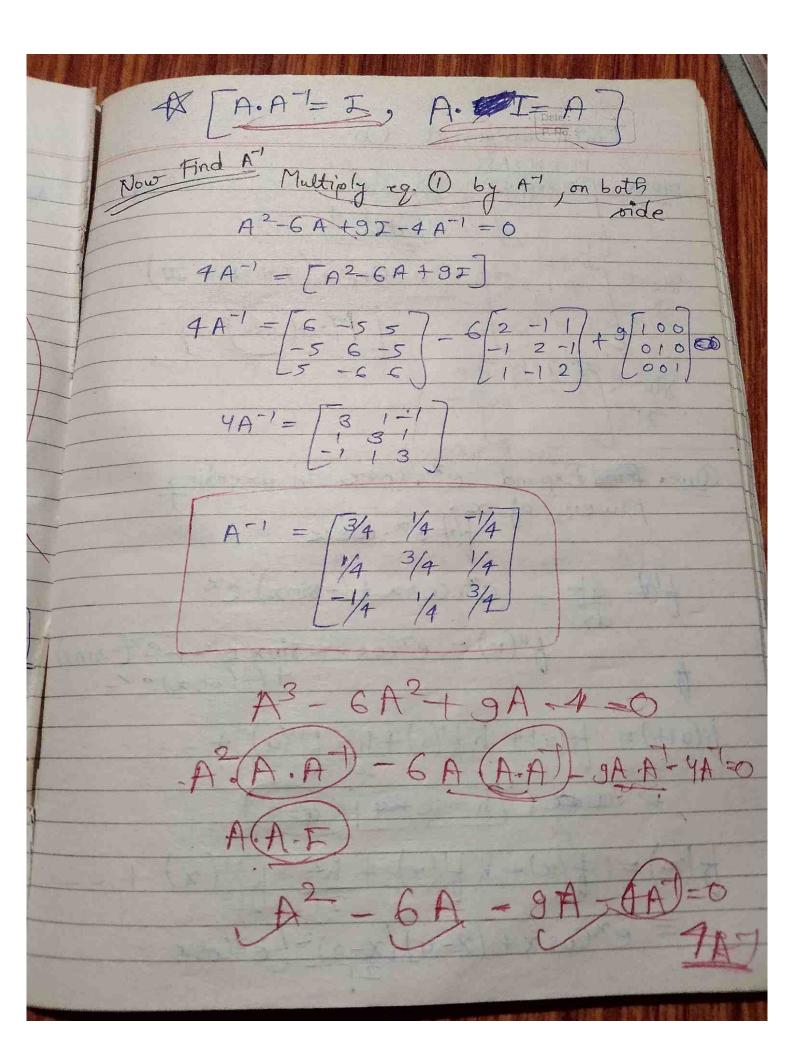


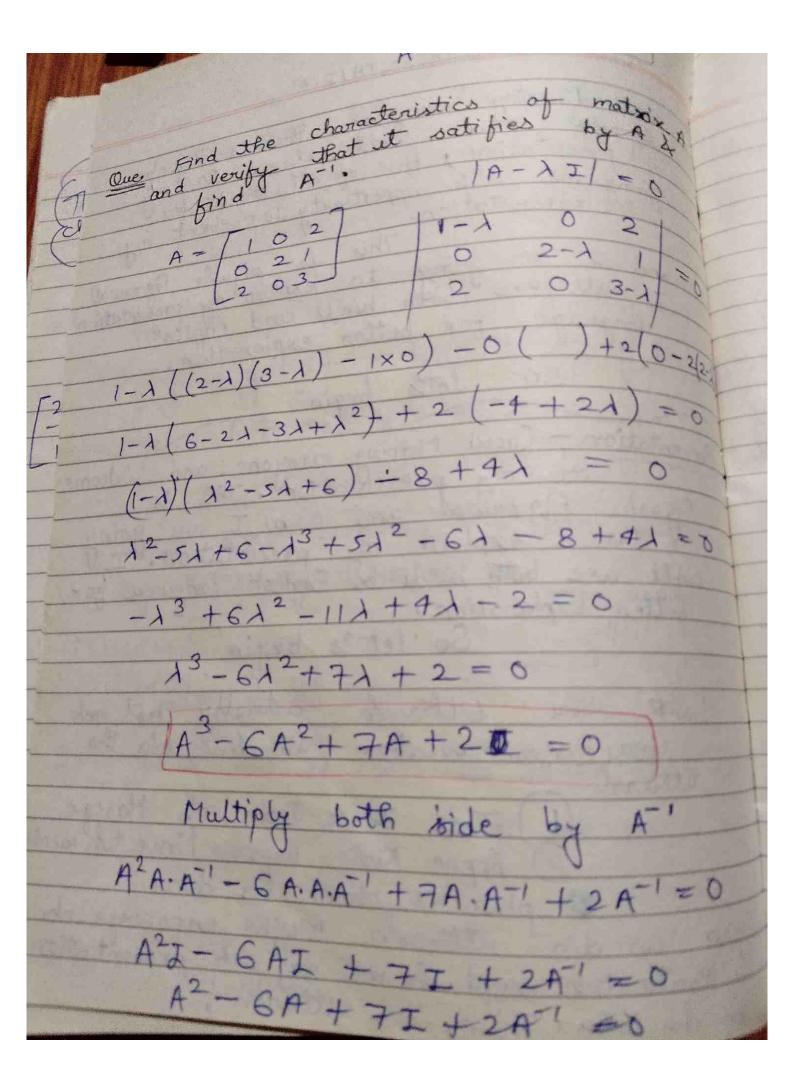












$$A^{2} = A + A + A^{2} + A + A^{2} +$$