

SRM Institute of Science and Technology
Department of Mathematics
21MAB101T-CALCULUS & LINEAR ALGEBRA
ACADEMIC YEAR 2022-2023 (ODD)
Tutorial 1 (Unit-I)

1. If $A = \begin{pmatrix} 2 & 2 & 1 \\ 1 & 3 & 1 \\ 1 & 2 & 2 \end{pmatrix}$ then find the eigen values of (i) A , (ii) A^{-1} , (iii) A^2 .
 2. One of the eigen values of $A = \begin{pmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{pmatrix}$ is given as 3. Find the eigen values of A^2 .
 3. Two of the eigen values of $A = \begin{pmatrix} 4 & 6 & 6 \\ 1 & 3 & 2 \\ -1 & -5 & -2 \end{pmatrix}$ are equal and they are double of the third eigen value. Find the eigen values of A^2 .
 4. Find the characteristic equations and its roots for the matrix $A = \begin{pmatrix} -2 & 2 & -3 \\ 2 & 1 & -6 \\ -1 & -2 & 0 \end{pmatrix}$.
Also find its eigen vectors.
 5. Find eigen values and eigen vectors of $A = \begin{pmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 1 \end{pmatrix}$.
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