

Assignment V

MA 242

Due on 26th July

1. (2.5 points) Let $A = \begin{bmatrix} 1 & 2 \\ 0 & 4 \end{bmatrix}$. Write down the characteristic equation for A . Then verify that if A satisfies the characteristic equation or not?
2. (2.5 points) Let I be the set of **Integers** $(\dots, -3, -2, -1, 0, 1, 2, 3, \dots)$. Let A be invertible. If λ is an Eigenvalue of A then show that λ^k is an eigen value for A^k , $\forall k \in I$.
3. (2.5 points) Is $A = \begin{bmatrix} a & 0 \\ 0 & b \end{bmatrix}$ similar to $B = \begin{bmatrix} o & a \\ b & 0 \end{bmatrix}$? Explain your answer.
4. (2.5 points) Chapter 5.3. Problem no.12.