

WOLLO UNIVERSITY
COLLEGE OF NATURAL SCIENCE
DEPARTMENT OF MATHEMATICS

ASSIGNMENT (15%)

NAME_____

IDNo_____

SIGNATURE_____

INSTRUCTION: For the following questions show the necessary steps neatly and correctly! (5pt each)

1. Show that the matrix $A = \begin{bmatrix} 2 & 4 & 3 \\ -4 & -6 & -3 \\ 3 & 3 & 1 \end{bmatrix}$ is diagonalizable or not.
2. Find the Eigen space of the matrix $A = \begin{bmatrix} 1 & -1 & -1 \\ 1 & 3 & 1 \\ -3 & 1 & -1 \end{bmatrix}$
3. Find the orthonormal basis of V in R^3 corresponding to $\left\{ \begin{bmatrix} 3 \\ 0 \\ 4 \end{bmatrix}, \begin{bmatrix} -1 \\ 0 \\ 7 \end{bmatrix}, \begin{bmatrix} 2 \\ 9 \\ 11 \end{bmatrix} \right\}$