

WOLLO UNIVERSITY

COLLEGE OF NATURAL SCIENCE

DEPARTMENT OF MATHEMATICS

LINEAR ALGEBRA II FOR 2nd YEAR MATHEMATICS STUDENTS

ASSIGNMENT (15%)

NAME_____

IDNo_____

SIGNATURE_____

INSTRUCTION: For the following questions show the necessary steps neatly and correctly!

1. Let $u = (x_1, y_1)$ & $v = (x_2, y_2)$ be vectors in R^2 . Define $f : R^2 \times R^2 \rightarrow R$ by $2x_1y_1 + 3x_2y_2$.
Then show that f is bilinear form or not on R^2(4pt)

2. Find the LU-decomposition of $A = \begin{bmatrix} 1 & 2 & 4 \\ 3 & 8 & 14 \\ 2 & 6 & 13 \end{bmatrix}$ (5)

3. Find the QR-factorization of $A = \begin{bmatrix} 1 & 1 \\ 1 & 9 \\ 1 & 9 \\ 1 & 1 \end{bmatrix}$ (6)