

MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2018/2019 ACADEMIC YEAR FIRST YEAR SECOND SEMESTER

SCHOOL OF SCIENCE BACHELOR OF SCIENCE

COURSE CODE: MAT 1206 COURSE TITLE: LINEAR ALGEBRA I

DATE: 26-4-2019 13:00HRS TIME: 11:00-

INSTRUCTIONS TO CANDIDATES

Page 1 of 3

Answer Question **ONE** and any other **TWO** questions

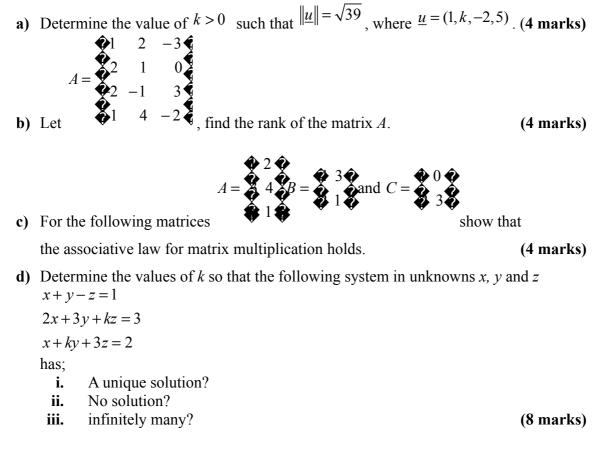
This paper consists of **THREE** printed pages. Please turn over.

QUESTION ONE (30 MARKS)

singular.

(4 marks)

QUESTION THREE (20 MARKS)



QUESTION FOUR (20 MARKS)

a) Solve the following system of linear equations by Gauss Jordan elimination.

 $x_{1} + 3x_{2} - 2x_{3} + 2x_{5} = 0$ $2x_{1} + 6x_{2} - 5x_{3} - 2x_{4} + 4x_{5} - 3x_{6} = -1$ $5x_{3} + 10x_{4} + 15x_{6} = 5$ $2x_{1} + 6x_{2} + 8x_{4} + 4x_{5} + 18x_{6} = 6$

(9 marks)

b) Verify dimension theorem for the linear transformation $T : \mathbb{R}^3 \bigoplus \mathbb{R}^3$ defined

by
$$T(x, y, z) = (x + 2y - z, y + z, x + y - 2z)$$
. (11 marks)