King Saud University
Department of Mathematics
Second Semester 1435-1436 H

MATH 244 (Linear Algebra)
First Assignment
To be submitted on or before 4-7-1436 H

Student's Names	Student's IDs	Group No.

Question No.	I	II	Total
Mark			

Instructions.

1. Work on this assignment as groups of two.
2. Use any trusted source of information to handle this assignment with proper citation and no plagiarism.

[**I**]

(i) What is MATLAB?

(ii) For $A = \begin{bmatrix} 1 & 3 & -2 & 0 & 2 & 0 \\ 2 & 6 & -5 & -2 & 4 & -3 \\ 0 & 0 & 5 & 10 & 0 & 15 \\ 2 & 6 & 0 & 8 & 4 & 18 \end{bmatrix}$ and $\mathbf{b} = \begin{bmatrix} 0 \\ -1 \\ 5 \\ 6 \end{bmatrix}$.

(a) Use MATLAB functions to compute the Reduced Row Echelon Form of the augmented matrix $[A|\mathbf{b}]$ and the solution $\mathbf{x}$ of $A\mathbf{x} = \mathbf{b}$.

(b) Use the computed Reduced Row Echelon Form to solve the system $A\mathbf{x} = \mathbf{b}$ by hands.

(c) Explain the difference between your solution of the system $A\mathbf{x} = \mathbf{b}$ and the MATLAB's solution.

OVER

[II] Read Section 10.10 or Section 10.15 in *Elementary Linear Algebra with Applications* book, the 10th Ed. Then, in no more than three A4 pages, answer **ONE** of the following questions:

(a) How is Linear Algebra related to Cryptography?

(b) How is Linear Algebra related to Computer Graphics?

GOOD LUCK