King Saud University
Department of Mathematics
2nd Semester 1432-1433 H

MATH 244 (Linear Algebra)
1st Assignment
To be submitted on or before 15-5-1433 H

Student's Name	Student's ID	Group No.	Lecturer's Name

Question No.	I	II	Total
Mark			

Instructions.

1. Attempt all questions.
2. Show all the steps of your work clearly.
3. Use any source of information to handle this assignment WITH proper citation and no plagiarism.

[**I**] Determine whether the following is **True** or **False**. **Justify** your answer.

(1) For $A = [a_{ij}]_{n\times n}$, if $A^2 = 0_{n\times n}$ then $A = 0_{n\times n}$. ( )

(2) There is a lower triangular matrix A for which $A^2 = \begin{bmatrix} 4 & 0 \\ 9 & 1 \end{bmatrix}$. ( )

(3) If $A = \begin{bmatrix} t & 0 \\ 0 & t \end{bmatrix}$ where t is a nonzero constant, then A commutes with every 2×2 matrix. ( )

Over

(4) If $A = [a_{ij}]_{n\times n}$ is invertible, then $adj(A)$ is invertible and $\det(adj(A)) = (\det(A))^{n-1}$. ( )

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(5) $W = \{(a, b) \in R^2 : a^2 = b^2\}$ is a subspace of R^2. ( )

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(6) $V = R$ together with addition operation defined by $a + b = a^b$ for any $a, b \in R$, and the standard scalar multiplication is a vector space ( )

OVER

[II] Why do you think it is necessary for a computer science student to study a course on Linear Algebra?

Good Luck