Exam #1, Linear Algebra, Spring, 2003, W. Stephen Wilson

Name: Hmswer Sheet

TA Name and section: \_

(1 point for recognizability and 1 point for spelling)

NO CALCULATORS. KEEP IT OFF YOUR DESK. All questions are true-false questions. The scoring is as follows: Wrong answer, 0 points; No answer, 1 point; Correct answer, 2 points; Correct answer with correct reason, 3 points. If you can't answer something in less than a minute, move on. Use very very short, trivial, nearly frivolous (but true) reasons. Say anything true.

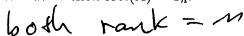
(1) A system of 4 equations in 3 unknowns is always inconsistent.

 $\mathbf{T}$ 

try 0's

(2) If A is any invertible  $n \times n$  matrix then  $rref(A) = I_n$ .





(3) The image of a  $3 \times 4$  matrix is a subspace of  $\mathbb{R}^4$ .



(4) There is a  $3 \times 4$  matrix of rank 4.



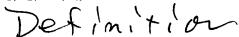
Max 3

(5) The formula  $(A^2)^{-1} = (A^{-1})^2$  holds for all invertible matrices A.

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(6) The span of the vectors  $\vec{v}_1, \vec{v}_2, \ldots, \vec{v}_n$  consists of all linear combinations of  $\vec{v}_1, \vec{v}_2, \ldots, \vec{v}_n$ .





(7) There exists a system of 3 linear equations in 3 unknowns with exactly 3 solutions.



