Birzeit University
Mathematics Department

key

Quiz # 2 Math 234 2018/2019

Name..... Number..... Section .....

(Q1) [*10 points*] Answer by True (T) or False (F)

(1) ...T... If A is a symmetric nonsingular matrix, then A^{-1} is also symmetric.

(2) ...T... If $Ax = b$ is a 2×4 system and $b = a_2 - 3a_3$, then $Ax = b$ has infinitely many solutions.

(3) ...T... If A and B are $n \times n$ diagonal matrices, then $AB = BA$

(4) ...F... If A and B are two matrices such that AB and BA are both defined, then A and B must be square matrices.

(5) ...T... If A is nonsingular, then A^T is nonsingular.

(6) ...F... If A is an $n \times n$ nonsingular matrix and α a real number such that $\alpha \neq 0$, then $(\alpha A)^{-1} = \alpha A^{-1}$

(7) ...T... If A is a $n \times n$ nonsingular matrix, then A^2 is also nonsingular.

(8) ...T... If B is a square matrix such that $B^2 = I$, then $B^{-1} = B$

(9) ...T... Every diagonal matrix is symmetric.

(10) ...F... If $Ax = 0$ is a 3×3 system and $a_1 = a_2 + a_3$, then $Ax = 0$ has a unique solution.

(11) ...F... If A and B are symmetric matrices, then AB is also symmetric.

(12) ...F... If A and B are $n \times n$ singular matrices, then $A + B$ is also singular.

(13) ...F... If a homogeneous system has infinitely many solutions, then it must contain more unknowns than equations.

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