

الجبر الخطي (Linear Algebra)

First online Assessment, Math 244, 4th-April

Preview Test: First online Assessment, Math 244, 4th-April

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Test Information

Description

Instructions

Timed Test This test has a time limit of 45 minutes. This test will save and submit automatically when the time expires.
 Warnings appear when **half the time, 5 minutes, 1 minute, and 30 seconds** remain.
[The timer does not appear when previewing this test]

Multiple Not allowed. This test can only be taken once.

Question Completion Status:

Force Completion This test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.

QUESTION 1

1 points

Save Answer

If $A^T = \begin{bmatrix} 0 & -1 \\ 3 & 2 \end{bmatrix}$ and $p(x) = x^2 - x + 3$, then $p(A)$ equals

☐ $\begin{bmatrix} 0 & 3 \\ -1 & 2 \end{bmatrix}$

☐ $\begin{bmatrix} 1 & 6 \\ 2 & 0 \end{bmatrix}$

☐ $\begin{bmatrix} 3 & 2 \end{bmatrix}$

[2 5]

QUESTION 2**1 points**

Save Answer

If $A = \begin{bmatrix} 1 & 2 \\ 2 & -4 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 6 \\ 3 & 1 \end{bmatrix}$, then the trace $\text{tr}(5A - BA)$ equals

- ☐ 120
- ☐ -28
- ☐ -36
- ☐ 0

QUESTION 3**1 points**

Save Answer

❖ Question Completion Status:

- ☐ $A = \begin{bmatrix} -2 & -1 \\ -2 & 4 \end{bmatrix}$
- ☐ $A = \begin{bmatrix} -2 & -2 \\ -1 & 4 \end{bmatrix}$
- ☐ $A = \begin{bmatrix} 4 & -2 \\ -1 & -2 \end{bmatrix}$
- ☐ $A = \begin{bmatrix} 4 & -1 \\ -2 & -2 \end{bmatrix}$

QUESTION 4**1 points**

Save Answer

If A is an invertible $n \times n$ matrix, then

- ☐ The homogeneous system $Ax=0$ has no solution

- ☐ The reduced row echelon form of A has a row of zeros

QUESTION 5**1 points**

Save Answer

If A, B and C are $n \times n$ matrices, then $AC - (C^T B)^T$ equals

- ☐ $(A - B)C^T$
- ☐ $(A - B^T)C$
- ☐ $(AC - BC)^T$
- ☐ $C(A - B^T)$

QUESTION 6

Question Completion Status:

If the entries on the main diagonal of a 3×3 diagonal matrix A are 2, 1 and 4, then the entries on the main diagonal of A^{-2} are

- ☐ -4, -2 and -8
- ☐ $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{1}{16}$
- ☐ $\frac{1}{4}$, 1 and $\frac{1}{16}$
- ☐ 4, 1 and 16

QUESTION 7**1 points**

Save Answer

☐ $\begin{bmatrix} 11 & 0 \\ -4 & 3 \end{bmatrix}$

☐ $\begin{bmatrix} 3 & 8 \\ 4 & 11 \end{bmatrix}$

☐ $\begin{bmatrix} 1 & 4 \\ 1 & 9 \end{bmatrix}$

☐ $\begin{bmatrix} 9 & -4 \\ -1 & 1 \end{bmatrix}$

QUESTION 8**1 points**

Save Answer

Suppose that A is a matrix of size 5x2, B is a matrix of size rx5 and C is a matrix of size 4x3. If A^TBC is defined, then

☐ A^TBC is of size 5x4

Question Completion Status:

☐ B is of size 2x5

☐ B is of size 3x4

☐ B is of size 3x5

QUESTION 9**1 points**

Save Answer

The general solution of the homogeneous linear system

$$x + y = 0$$

$$-2x + z = 0$$

$$2y + z = 0$$

is

☐ $\{(2t, -t, t), t \in \mathbb{R}\}$

☐ $\{(t, -t, 2t), t \in \mathbb{R}\}$

☐ $\{(t, t, t), t \in \mathbb{R}\}$

QUESTION 10**1 points**

Save Answer

The solution of the linear system with corresponding augmented matrix $\begin{bmatrix} 1 & 3 & 2 \\ -2 & 2 & 4 \end{bmatrix}$ is

- ☐ a point
- ☐ a line
- ☐ a plane
- ☐ two points

🚩 Question Completion Status: