

Quiz 8

ⓘ This is a preview of the published version of the quiz

Started: Nov 2 at 12:39pm

Quiz Instructions

Once you open this quiz, you will have 25 minutes to submit it. You will have only **one** submission attempt. The quiz must be **submitted** by 7:59 PM (Atlanta time) on Friday, Oct 30. There are 5 questions after the honor code pledge.

Question 1

0 pts

Please read and attest to the honor statement below:

I understand that this assessment is open-book and open-note, but not open-internet. I may use my class notes, my instructor's notes, and the ILA textbook at <https://textbooks.math.gatech.edu/ila/ila.pdf> (<https://textbooks.math.gatech.edu/ila/ila.pdf>).

However, I will not visit any other websites, use any search engines, or use any calculators or computer aids whatsoever (Matlab, Mathematica, Chegg.com, Geogebra, etc.) as I take this assessment.

This assessment is completely my own work. I will not discuss the answers or any of the contents of this assessment with anyone until the time it is due.

- I attest to my integrity, and I understand that any suspected violation of this policy may be prosecuted to the fullest extent allowable by Georgia Tech.

Question 2

1 pts

Consider the matrix

$$A = \begin{pmatrix} 0 & 1 & -1 \\ -1 & 2 & 0 \\ 0 & 1 & 2 \end{pmatrix}$$

Fill in the missing entries in the matrix of cofactors of A :

$$\begin{pmatrix} 4 & a & b \\ c & 0 & 0 \\ 2 & -1 & 1 \end{pmatrix}$$

Recall that the entry in the i th row and j th column of the cofactor matrix is $(-1)^{i+j} \det A_{ij}$.

a=

b=

c=

Question 3

1 pts

Suppose that A is a 3×3 matrix, that the cofactor matrix of A is

$$\begin{pmatrix} -1 & 1 & -1 \\ 1 & -1 & -1 \\ 1 & 1 & -1 \end{pmatrix}$$

and that $\det(A) = -1$. Find the inverse of A .

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Question 4**1 pts**

Consider the matrix

$$A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$$

Which of the following vectors is an eigenvector for A ? *Select all that apply.*

$\begin{pmatrix} 1 \\ 0 \end{pmatrix}$

$\begin{pmatrix} 0 \\ 1 \end{pmatrix}$

$\begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$\begin{pmatrix} 1 \\ -1 \end{pmatrix}$

$\begin{pmatrix} 0 \\ 0 \end{pmatrix}$

Question 5**1 pts**

Let $A = \begin{pmatrix} 1 & 3 \\ 3 & 1 \end{pmatrix}$. Which of the following are eigenvalues of A with a 1-dimensional eigenspace? *Select all that apply.*

0 2 4**Question 6****1 pts**

Suppose that $T : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ is a linear transformation that reflects about the line $y = 2x$ in \mathbb{R}^2 . What are the eigenvalues of the standard matrix for T ? *Select all that apply.*

 0 1 -1 2 -2 There are no eigenvalues

Not saved

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