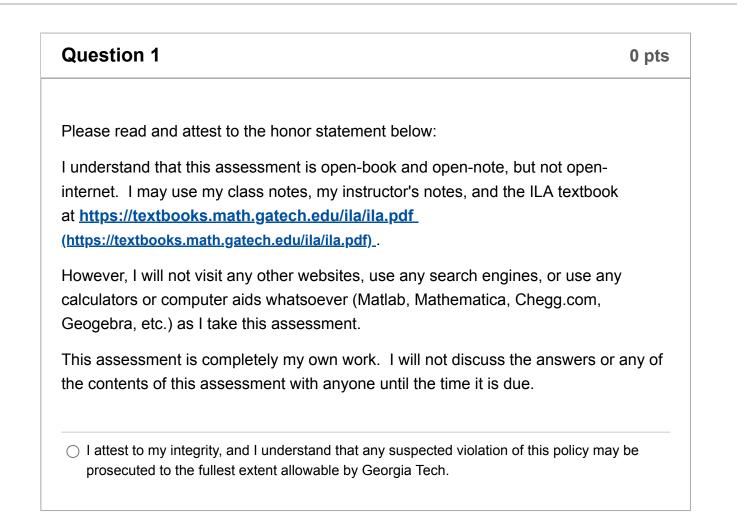
Quiz 10

(1) This is a preview of the published version of the quiz

Started: Nov 17 at 6:38am

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, Nov 6. There are 5 questions after the honor code pledge.



Question 2

1 pts

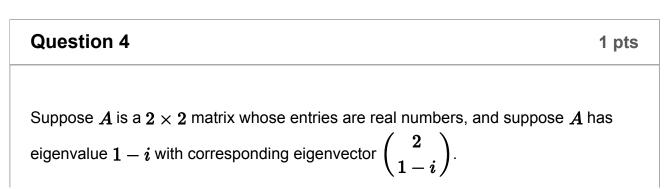
Which of the following are correct diagonalizations of the matrix $\begin{pmatrix} 2 & 6 \\ 0 & -1 \end{pmatrix}$? Select all that apply.

$$\begin{array}{|c|c|c|c|c|} \hline & \left(\begin{array}{c} 1 & -2 \\ 0 & 1 \end{array} \right) \left(\begin{array}{c} 2 & 0 \\ 0 & -1 \end{array} \right) \left(\begin{array}{c} 1 & -2 \\ 0 & 1 \end{array} \right)^{-1} \\ \hline & \left(\begin{array}{c} -2 & 1 \\ 1 & 0 \end{array} \right) \left(\begin{array}{c} -1 & 0 \\ 0 & 2 \end{array} \right) \left(\begin{array}{c} -2 & 1 \\ 1 & 0 \end{array} \right)^{-1} \\ \hline & \left(\begin{array}{c} 2 & 2 \\ 0 & -1 \end{array} \right) \left(\begin{array}{c} 2 & 0 \\ 0 & -1 \end{array} \right) \left(\begin{array}{c} 2 & 2 \\ 0 & -1 \end{array} \right) \left(\begin{array}{c} 2 & 2 \\ 0 & -1 \end{array} \right) \left(\begin{array}{c} 2 & 2 \\ 0 & -1 \end{array} \right)^{-1} \\ \hline & \left(\begin{array}{c} 0 & 1 \\ 1 & -2 \end{array} \right) \left(\begin{array}{c} -1 & 0 \\ 0 & 2 \end{array} \right) \left(\begin{array}{c} 0 & 1 \\ 1 & -2 \end{array} \right)^{-1} \end{array}$$

Question 3

1 pts

Suppose that A is a 5×5 matrix with characteristic polynomial $(1 - \lambda)^2 (3 - \lambda)^2 (\pi - \lambda)$ and also that A is diagonalizable. What is the dimension of the 1-eigenspace of A?



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Which of the following must be true?



Question 5 1 pts If A is a diagonalizable 10 × 10 matrix, then A must have 10 distinct eigenvalues. O True O False

Question 6	1 pts
Suppose that A is a 4×4 matrix with eigenvalues 0 , 1 , and 2 , where the eigen 2 has geometric multiplicity 2 (meaning that the dimension of the 2-eigenspace). Which of the following statements must be true? Select all that apply.	
\square <i>A</i> is diagonalizable	
$\square A$ is not diagonalizable	
\Box <i>A</i> is invertible	
$\square A$ is not invertible	

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