Which of the following statements is correct:

- a. The determinant of a 3x3 matrix is linear combination of each of its elements
- b. If the determinant of a 3x3 matrix is equal to the product of its elements in the main diagonal then it is either an upper triangular or a lower triangular matrix
- c. If the determinant of a 3x3 matrix is equal to the product of its elements in the main diagonal then it is an upper/lower triangular

- d. The determinant of a 3x3 matrix is linear combination of each of its elements when its rows are orthogonal
- e. None of the presented answers

Let u=(2, 4, -4), v=(5, 2, 5) and w=(9, -2, 6) be vectors defined in R3.. The magnitude of the unit vector of u.

- a. 21
- b. 6
- c. 1
- d. 7.3
- e. 11

Time left 0:20:00

For the following system of linear equations, the system has a non-trivial solution when a is:

$$ax + y + z = 0$$

$$-y + z = 0$$

$$az = 0$$

- a. 1
- b. 0.25
- c. None of the presented answers
- d. 0.5
- e. 0

Flag question

Time left 0:59:33

The magnitude of the projection of the vector (5, -2, 3, 6) onto the vector (1, 2, 7, 3) is:

- a. 40
- b. (0.6, 1.3, 4.4, 1.9)
- c. 5
- d. (5, 10, 35, 15)
- e. (2.7, -1.8, 1.6, 3.2)

Question 2

Not yet answered

Marked out of 1.50

Flag question

Assume that A and B are 4x4 matrices, which of the following statements is ALWAYS correct:

a. det (AxA^T) is not primary

b. det (AxB) is equal to (det (B) x det (A^T)) if and only if AxB is commutative

c. det (AxA^T) is not primary and det (AxB) is equal to (det (B) x det (A^T))

d. det (AxB) is equal to (det (B) x det (A^T))

e. All presented answers are correct

equal to the number of equations

○ d. The solutions of the system are orthogonal when the nu
the number of equations

○ e. The rows of the coefficient matrix are orthogonal

Clear my choice

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Assume that A is a 3x3 matrix, $A-A^T$ is a:

○ a. Diagonal matrix

○ b. Zero matrix

○ c. Diagonal and symmetric matrix

○ d. None of the presented answers

○ e. Symmetric matrix

Time left 0:06

Assume that A and B are 3x3 symmetric matrices, which of the following leads to a symmetric matrix:

- a. AB and BA
- b. A + B
- c. None of the presented answers
- d. AB
- e. BA

Time left 0:47:10

Which of the following statements is correct:

a. The sum of two singular matrices is a singular matrix

b. The sum of two singular matrices is a non-singular matrix

c. The sum of two non-singular matrices is a non-singular matrix

d. None of the presented answers

e. The sum of two non-singular matrices may be a singular matrix

Time left 0:52:06

For a system of three linear equations and three unknowns, which of the following statements is ALWAYS correct:

- a. The system can be solved using Cramer's Rule
- b. None of the presented choices
- c. The system is inconsistent
- d. The system has a unique solution
- e. The system has infinite number of solutions

Marked out of 1.50

Time left 0:35:57

Flag question

Assume that A and B are 4x4 matrices. The result of $(AB)^{-1}A(B)^{-1}$ is:

- a. A^{-1}
- b. B^{-2}
- c. Zero
- d. B^{-1}
- e. I

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Quiz navigation

1 2 3 4 5 6 7

Time left 0:39:36

For a homogeneous system of four independent linear equations and three unknowns, which of the following statements is correct:

- a. The system has infinite number of solutions
- b. The system is inconsistent
- c. The system has a unique solution
- d. The system has a unique solution or the system has infinite number of solutions
- e. None of the presented answers

Marked out of 1.50

Flag question

Time left 0:37:56

Assume that A is a 2x2 symmetric matrix with $a_{11}=3$; $a_{12}= x-1$; $a_{21}=2x+3$; $a_{22}=x+2$, x is:

- a. -4
- b. 4
- c. -3
- d. 3
- e. Zero

Next page

Quiz navigation

Time left 0:48:09

Question 6

Not yet answered

Marked out of 1.50

Flag question

Assume that A and B are 3x3 symmetric matrices, which of the following leads to a symmetric matrix:

- a. BA
- b. None of the presented answers
- c. AB and BA
- d. A + B
- e. AB

Time left 0:19:31

Question 16

Not yet answered

Marked out of 1.50

Flag question

Assume that A is a 3x3 matrix that satisfies $A^2-A+I=0$ then the inverse of A is:

a. A + I

b. None of the presented answers

c. I – A

d. A

e. A – I

Flag question

For a system of four linear equations and six unknowns, which of the following statements is ALWAYS correct:

a. The system is inconsistent

b. The system has a unique solution or the system has infinite number of solutions

c. The system has a unique solution

d. The system has infinite number of solutions or the system is inconsistent

e. None of the presented choices

Question 14

Not yet answered

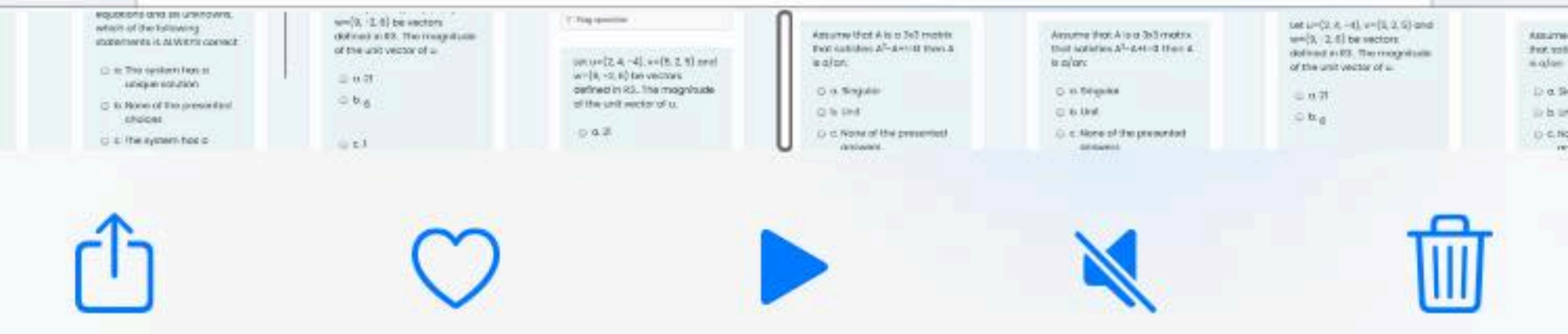
Time left 0:30:44

Marked out of 1.50

Flag question

Assume that A is a 3x3 matrix that satisfies $A^2-A+I=0$ then A is a/an:

- a. Singular
- b. Unit
- c. None of the presented answers
- d. Invertible
- e. Symmetric



Time left 0:33:31

Question 14

Not yet answered

Marked out of 1.50

Flag question

Assume that A is a 3x3 matrix that satisfies $A^2-A+I=0$ then A is a/an:

- a. Singular
- b. Unit
- c. None of the presented answers
- d. Invertible
- e. Symmetric

Next page

Time left 0:07:5

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For a system of four linear equations and six unknowns, which of the following statements is ALWAYS correct:

- a. None of the presented choices
- b. The system is inconsistent
- c. The system has a unique solution or the system has infinite number of solutions
- d. The system has infinite number of solutions or the system is inconsistent
- e. The system has a unique solution

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Assume that A and B are 4x4 matrices, which of the following statements is ALWAYS correct:

- a. All presented answers are correct

ALWAYS correct

Time left 0:15:30

a. det (AxB) is equal to (det (B) x det (A^T))

b. det (AxA^T) is not primary and det (AxB) is equal to (det (B) x det (A^T))

c. det (AxB) is equal to (det (B) x det (A^T)) if and only if AxB is commutative

d. det (AxA^T) is not primary

e. All presented answers are correct

Next page

Flag question

Time left 0:04:53

For a homogeneous system of four independent linear equations and three unknowns, which of the following statements is correct:

a. The system has infinite number of solutions

b. The system is inconsistent

c. The system has a unique solution or the system has infinite number of solutions

d. The system has a unique solution

e. None of the presented answers

Let u=(2, 4, -4), v=(5, 2, 5) and w=(9, -2, 6) be vectors defined in R3. The distance between -3u and -5v+3w.

- a. 21
- b. 18.4
- c. 31
- d. 20.6
- e. 30.6

Time left 0:39:33

For a homogeneous system of four independent linear equations and three unknowns, which of the following statements is correct:

- a. The system has infinite number of solutions
- b. The system is inconsistent
- c. The system has a unique solution
- d. The system has a unique solution or the system has infinite number of solutions
- e. None of the presented answers

Assume that A is a 3x3 matrix, AA^T is a:

- a. None of the presented answers
- b. Diagonal matrix
- c. Symmetric matrix
- d. Unit matrix
- e. Zero matrix

Assume that A and B are 4x4 matrices, which of the following statements is ALWAYS correct:

- a. All presented answers are correct
- b. $\det(A \times B)$ is equal to $(\det(B) \times \det(A^T))$ if and only if AxB is commutative
- c. $\det(A \times A^T)$ is not primary and $\det(A \times B)$ is equal to $(\det(B) \times \det(A^T))$
- d. $\det(A \times B)$ is equal to $(\det(B) \times \det(A^T))$
- e. $\det(A \times A^T)$ is not primary

Time left 0:08:01

For the following matrix A, which of the following statements is correct:

$$A = \begin{bmatrix} \cos\theta & \sin\theta & 0 \\ \sin\theta & \cos\theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

- a. A is singular and the rows of A are orthogonal
- b. None of the presented answers
- c. The rows of A are orthogonal
- d. A is singular
- e. A is non-singular

Finish attempt ...

Assume that A is a 3x3 matrix, $A-A^T$ is a:

- a. Symmetric matrix
- b. None of the presented answers
- c. Diagonal and symmetric matrix
- d. Diagonal matrix
- e. Zero matrix