Question 1

Not yet answered

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⚑ Flag question

One of the following is always true

A) Let A and B be square matrices of same size, if B is skew symmetric, then $tr(A + B) = tr(A)$

B) For any square matrix A, the matrix $A^T A - A A^T$ is skew symmetric

C) If A is square matrix such that $tr(A) = 0$, then A is skew symmetric

D) If the matrices AB and BA are defined, then both A and B must be square matrices

○ A

○ B

○ C

○ D

Question 2

Not yet
answered

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2.00

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question

Let A be 2×2 matrix, if the matrix B results from A by adding 3 times the first row of A to the second row and the matrix C results from B by multiplying the first row of B by 4, then $C = E_2 E_1 A$ where

A) $E_1 = \begin{bmatrix} 4 & 0 \\ 0 & 1 \end{bmatrix}$, $E_2 = \begin{bmatrix} 1 & 0 \\ 3 & 1 \end{bmatrix}$

B) $E_1 = \begin{bmatrix} 1 & 0 \\ 0 & 4 \end{bmatrix}$, $E_2 = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$
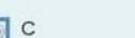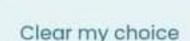
C) $E_1 = \begin{bmatrix} 1 & 0 \\ 3 & 1 \end{bmatrix}$, $E_2 = \begin{bmatrix} 4 & 0 \\ 0 & 1 \end{bmatrix}$

D) $E_1 = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$, $E_2 = \begin{bmatrix} 1 & 0 \\ 0 & 4 \end{bmatrix}$

○ A

○ B

⦿ C

○ D

Clear my choice

The solution of the system:

$$x + 2y - 2z + w = 0,$$
$$x + 2y - z + 3w = 0,$$
$$x + 2y + z + 7w = 0,$$

is:

A) $(5t + 3s, -2s, t, s)$ where s and t are any real numbers

B) $(-2t - 5s, t, -2s, s)$ where s and t are any real numbers

C) The system has only the trivial solution
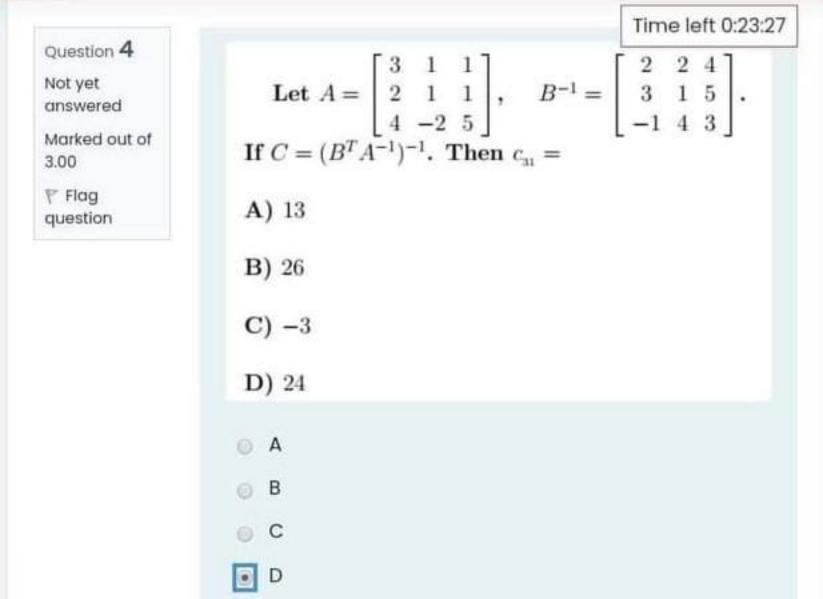
D) $(-7t, 0, -2t, t)$ where t is any real number

○ A

● B

○ C

○ D

Clear my choice

Question 4

Not yet
answered

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⚑ Flag
question

Let $A = \begin{bmatrix} 3 & 1 & 1 \\ 2 & 1 & 1 \\ 4 & -2 & 5 \end{bmatrix}$, $B^{-1} = \begin{bmatrix} 2 & 2 & 4 \\ 3 & 1 & 5 \\ -1 & 4 & 3 \end{bmatrix}$.

If $C = (B^T A^{-1})^{-1}$. Then $c_{31} =$

A) 13

B) 26

C) -3

D) 24

○ A

○ B

○ C

● D

Consider the following system:

$$x + y + 2z = b_1,$$
$$x + 2y + 3z = b_2,$$
$$2x + y + 3z = b_3.$$

The system has infinitely many solutions if:

A) $b_1 - 3b_2 + b_3 = 0$

B) $b_1 + b_2 - 3b_3 = 0$

C) $3b_1 - b_2 - b_3 \neq 0$

D) $3b_1 - b_2 - b_3 = 0$

○ A

○ B

○ C

Question 6

Not yet answered

Marked out of 2.00

⚑ Flag question

One of the following is always true

A) If A is upper triangular matrix, then $A^T - A$ is symmetric matrix

B) If A is square singular matrix, then the system $Ax = b$, has no solution

C) If $A + B$ is symmetric matrix, then both A and B are symmetric matrices

D) If A is skew symmetric matrix, then A^{-1} is skew symmetric matrix

○ A

○ B

○ C

○ D

Question 7

Not yet answered

Marked out of 2.00

⚑ Flag question

Let $A^{-1} = \begin{bmatrix} 2 & 1 & 3 \\ -5 & 1 & 4 \\ 1 & 3 & 6 \end{bmatrix}$. If $BA = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 2 & 1 \\ 4 & 5 & 2 \end{bmatrix}$. Then $b_{32} =$

A) 38

B) 15

C) 20

D) 6

○ A

○ B

○ C

○ D

Consider the following system:
$$x + 2y + 2z = -8,$$
$$2x + 3y + 17z = -16,$$
$$x + y + (k^2 - 1)z = 2k.$$
Then the system is inconsistent if:

A) $k = -4$

B) $k = 4$

C) $k \neq \mp 4$

D) $k \neq 4$

A

If $(A^{-1} + 2I)^T = \begin{bmatrix} 4 & 6 \\ 1 & 2 \end{bmatrix}$. Then $a_{22} =$

A) $\frac{1}{3}$

B) $\frac{-1}{3}$

C) 2

D) $\frac{-1}{7}$

○ A

○ B

○ C