Time left 0:57:27

Question 1

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

- a. $A^{-1}B$ is equal to BA^{-1} if and only if AB is equal to BA
- b. $A^{-1}B$ is equal to BA^{-1}
- c. All of the presented choices
- d. $A^{-1}B$ is equal to BA^{-1} if and only if AB is equal to BA and B is invertible
- e. $A^{-1}B$ is equal to BA^{-1} if and only if B is invertible

Clear my choice

Question 2

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

- a. A+B is invertible if and only if B is invertible
- b. A+B is invertible if and only if A−B is invertible
- c. A+B is invertible if and only if $A^{-1}B+I$ is invertible
- d. None of the presented choices
- e. A+B is invertible

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Finish attempt ...

Flag question

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c. All of the presented choices

d. $A^{-1}B$ is equal to BA^{-1} if and only if AB is equal to BA and B is invertible

e. $A^{-1}B$ is equal to BA^{-1} if and only if B is invertible

Clear my choice

Finish attempt ...

Question 2

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

a. A+B is invertible if and only if B is invertible

b. A+B is invertible if and only if A−B is invertible

c. A+B is invertible if and only if $A^{-1}B+I$ is invertible

d. None of the presented choices

e. A+B is invertible

Clear my choice

Next page

Time left 0:52:31

e. $A^{-1}B$ is equal to BA^{-1} if and only if B is invertible

Clear my choice

Question 2

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

a. A+B is invertible if and only if B is invertible

b. A+B is invertible if and only if A−B is invertible

c. A+B is invertible if and only if $A^{-1}B+I$ is invertible

d. None of the presented choices

e. A+B is invertible

Clear my choice

Next page

Time left 0:52:06

e. $A^{-1}B$ is equal to BA^{-1} if and only if B is invertible

Clear my choice

Question 2

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

a. A+B is invertible if and only if B is invertible

b. A+B is invertible if and only if A−B is invertible

c. A+B is invertible if and only if $A^{-1}B+I$ is invertible

d. None of the presented choices

e. A+B is invertible

Clear my choice

Next page

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e. $A^{-1}B$ is equal to BA^{-1} if and only if B is invertible

Clear my choice

Question 2

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an invertible matrix and B is a matrix. Which of the following statement is always correct:

a. A+B is invertible if and only if B is invertible

b. A+B is invertible if and only if A−B is invertible

c. A+B is invertible if and only if $A^{-1}B+I$ is invertible

d. None of the presented choices

e. A+B is invertible

Clear my choice

Next page

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Question 3

Not yet answered

Marked out of 2.50

Flag question

Assume that A,B,C and D are matrices where ACB=D and A,B and D are as follows. Then C needs to be:

$$A=\begin{bmatrix} 1 & 4 \\ -2 & 3 \\ 1 & -2 \end{bmatrix},\quad B=\begin{bmatrix} 2 & 0 & 0 \\ 0 & 1 & -1 \end{bmatrix},\quad D=\begin{bmatrix} 8 & 6 & -6 \\ 6 & -1 & 1 \\ -4 & 0 & 0 \end{bmatrix}$$

- a. A 3x3 invertible matrix
- b. None of the presented choices
- c. A 3x3 singular matrix
- d. A 2x2 invertible matrix
- e. A 2x2 singular matrix

Clear my choice

Question 4

Not yet answered

Marked out of 2.50

Assume that A and B are matrices where B is a column matrix with entries that are equal and their sum is equal to the number of the matrix rows. Knowing that AB is defined, which of the following statements is correct:

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Finish attempt ...

Time left 0:44:18

d. A 2x2 invertible matrix

e. A 2x2 singular matrix

Clear my choice

Question 4

Not yet answered

Marked out of 2.50

Flag question

Assume that A and B are matrices where B is a column matrix with entries that are equal and their sum is equal to the number of the matrix rows. Knowing that AB is defined, which of the following statements is correct:

a. AB is a column matrix with equal entries

b. More information are required

c. AB is a row matrix with equal entries

d. AB is a column matrix where each entry is equal to the average of the corresponding row in A

e. AB is a row matrix where each entry is equal to the average of the corresponding column in A

Clear my choice

Next page

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Question 5

Not yet answered

Marked out of 2.50

Flag question

For the following system of linear equations. Which of the following statements is ALWAYS correct:

$$\begin{aligned} x_1 + x_2 + \alpha x_3 &= \lambda_1 \\ x_1 + x_2 + \beta x_3 &= \lambda_2 \\ \alpha x_1 + \beta x_2 + x_3 &= \lambda_3 \end{aligned}$$

- a. The system has a nontrivial solution if and only if λ_1, λ_2 and λ_3 are equal to zero and α and β are equal
- b. All of the presented choices
- c. The system has a unique solution if and only if α and β are equal
- d. The system has a nontrivial solution if and only if λ_1, λ_2 and λ_3 are equal to zero
- e. The system has a unique solution if and only if λ_1, λ_2 and λ_3 are equal to zero

Clear my choice

Question 6

Not yet

For the following system of linear equations. Which of the following statements is ALWAYS correct:

Quiz navigation

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Finish attempt ...

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d. The system has a nontrivial solution if and only if λ_1, λ_2 and λ_3 are equal to zero

e. The system has a unique solution if and only if λ_1, λ_2 and λ_3 are equal to zero

Clear my choice

Question 6

Not yet answered

Marked out of 2.50

Flag question

For the following system of linear equations. Which of the following statements is ALWAYS correct:

$$x_1 + x_2 + \alpha x_3 = \lambda_1$$
$$x_1 + x_2 + \beta x_3 = \lambda_2$$
$$\alpha x_1 + \beta x_2 + x_3 = \lambda_3$$

a. The system can be solved using Cramer's rule if and only if α and β are equal

b. None of the presented choices

c. The system can be solved using Cramer's rule if and only if λ_1, λ_2 and λ_3 are equal to zero

d. The system can be solved using Cramer's rule if and only if λ_1, λ_2 and λ_3 are equal to zero and α and β are equal

e. The system can be solved using Cramer's rule if and only if λ_1, λ_2 and λ_3 are equal to zero

Clear my choice

Time left 0:37:56

Question 7

Not yet answered

Marked out of 2.50

Flag question

Assume that A is a non-singular matrix. Which of the following statement is always correct:

- a. The corresponding adjoint matrix is non-singular
- b. Both A^T and the adjoint matrix have to be invertible
- c. The corresponding adjoint matrix is singular
- d. None of the presented choices
- e. A^T is a non-singular matrix

Clear my choice

Question 8

Not yet answered

Marked out of 2.50

Flag

Assume that u and v are nonzero vectors in R^3 where the following equation is applicable. Which of the following statements is correct:

$$\|u+v\|^2 = \|u\|^2 + \|v\|^2$$

Quiz navigation

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Finish attempt ...

d. None of the presented choices

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e. A^T is a non-singular matrix

Clear my choice

Question 8

Not yet answered

Marked out of 2.50

Flag question

Assume that u and v are nonzero vectors in R^3 where the following equation is applicable. Which of the following statements is correct:

$$\|u+v\|^2 = \|u\|^2 + \|v\|^2$$

a. The set that consists of u and v is an orthogonal set and the dot product of such vectors has to be zero

b. The set that consists of u and v is an orthogonal set

c. The dot product of such vectors has to be zero

d. The angle between the two vector is zero

e. All of the presented choices

Clear my choice

Time left 0:35:38

Question 9

Not yet answered

Marked out of 2.50

Flag question

Assume that S_1 and S_2 are two sets of vectors where the vectors in S_1 are orthogonal to the ones in S_2. Which of the following statements is correct:

a. The vector that is represented as a linear combination of the vectors in S_1 is orthogonal to the vector that is represented as a linear combination of the vectors in S_2

b. All of the presented choices

c. S_1 and S_2 have the same number of vectors

d. The set that consists of the two sets is orthogonal

e. The set that consists of the two sets is orthogonal, and S_1 and S_2 have the same number of vectors

Clear my choice

Question 10

Not yet answered

Marked out of

Assume that u and v are nonzero vectors in R^2 which are orthogonal to a nonzero vector s. Which of the following statements is correct:

Quiz navigation

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Finish attempt ...

e. The set that consists of the two sets is orthogonal, and S_1 and S_2 have the same number of

Time left 0:33:10

Clear my choice

Question 10

Not yet answered

Marked out of 2.50

Flag question

Assume that u and v are nonzero vectors in R^2 which are orthogonal to a nonzero vector s. Which of the following statements is correct:

a. u and v are dependent

b. None of the presented choices

c. u and v are orthogonal and independent

d. u and v are independent

e. u and v are orthogonal

Clear my choice

Next page

Time left 0:30:46

Question 11
Not yet answered
Marked out of 2.50
Flag question

Which of the following statements is correct:

- a. The row matrices can be considered as a vector space
- b. The column matrices can be considered as a vector space and the row matrices can be considered as a vector space
- c. The column matrices can be considered as a vector space but the row matrices cannot be considered as a vector space
- d. The column matrices cannot be considered as a vector space but the row matrices can be considered as a vector space
- e. The column matrices can be considered as a vector space

Clear my choice

Question 12
Not yet answered
Marked out of 2.50
Flag question

Which of the following statements is correct:

- a. The unit vectors can be considered as a vector space
- b. The standard unit vectors can be considered as a vector space

Quiz navigation

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Finish attempt ...

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e. The column matrices can be considered as a vector space

Clear my choice

Question 12

Not yet answered

Marked out of 2.50

Flag question

Which of the following statements is correct:

a. The unit vectors can be considered as a vector space

b. The standard unit vectors can be considered as a vector space

c. None of the presented choices

d. The standard unit vectors are closed under the scaler multiplication

e. The unit vectors are closed under addition

Clear my choice

Next page

Time left 0:26:03

Question 13
Not yet answered
Marked out of 2.50
Flag question

Assume that A is a 3x3 matrix whose the entries in the two diagonal are ones and zeros elsewhere. The rank(A) is:

a. 1
b. None of the presented choices
c. 3
d. 2
e. 0

Clear my choice

Question 14
Not yet answered
Marked out of 2.50
Flag question

Assume that A is a 4x4 matrix whose the entries in the two diagonal are ones and zeros elsewhere. The rank(A) is:

a. 1
b. None of the presented choices

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Finish attempt ...

question

b. None of the presented choices

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Finish attempt ...

c. 3

d. 2

e. 0

Clear my choice

Question 14

Not yet answered

Marked out of 2.50

Flag question

Assume that A is a 4x4 matrix whose the entries in the two diagonal are ones and zeros elsewhere. The rank(A) is:

a. 1

b. None of the presented choices

c. 0

d. 2

e. 3

Clear my choice

Next page

PRINCIPLES OF LINEAR ALGEBRA

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Question 15

Not yet answered

Marked out of 2.50

Flag question

Assume that A is a 4x4 matrix whose the entries in the two diagonal are ones and zeros elsewhere. The nullity(A) is:

- a. 1
- b. 3
- c. None of the presented choices
- d. 2
- e. 0

Clear my choice

Question 16

Not yet answered

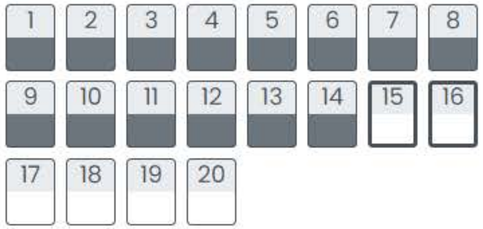
Marked out of 2.50

Flag

Which of the following statements is correct:

- a. The set of polynomials is a vector space
- b. The set of polynomials that satisfy (P(x)=P(-x)) is not a vector space

Quiz navigation



Finish attempt ...

2.50

Flag question

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a. 1

b. 3

c. None of the presented choices

d. 2

e. 0

Clear my choice

Question 16

Not yet answered

Marked out of 2.50

Flag question

Which of the following statements is correct:

a. The set of polynomials is a vector space

b. The set of polynomials that satisfy (P(x)=P(-x)) is not a vector space

c. All of the presented choices

d. The set of polynomials with even coefficient is a vector space

e. The set of polynomials and the set of polynomials that satisfy (P(x)=P(-x)) are vector spaces

Clear my choice

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17 18 19 20

Finish attempt ...

PRINCIPLES OF LINEAR ALGEBRA

Time left 0:16:02

Question 17

Not yet answered

Marked out of 2.50

Flag question

For the set of zero functions, which of the following statements is correct:

- a. It is closed under multiplication
- b. It is a vector space
- c. It is closed under scaler multiplication only
- d. It is closed under addition only
- e. None of the presented choices

Clear my choice

Question 18

Not yet answered

Marked out of

Assume that A is an mxn transformation matrix. The codomain and the domain are:

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Finish attempt ...

2.50

Flag question

Time left 0:15:18

a. It is closed under multiplication

b. It is a vector space

c. It is closed under scaler multiplication only

d. It is closed under addition only

e. None of the presented choices

Clear my choice

Question 18

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an mxn transformation matrix. The codomain and the domain are:

a. R^n and R^n

b. Should be the same

c. R^n and R^m

d. R^m and R^m

e. R^m and R^n

Clear my choice

17 18 19 20

Finish attempt ...

Next page

2.50

Flag question

Time left 0:12:07

a. It is closed under multiplication

b. It is a vector space

c. It is closed under scaler multiplication only

d. It is closed under addition only

e. None of the presented choices

Clear my choice

Question 18

Not yet answered

Marked out of 2.50

Flag question

Assume that A is an mxn transformation matrix. The codomain and the domain are:

a. R^n and R^n

b. Should be the same

c. R^n and R^m

d. R^m and R^m

e. R^m and R^n

Clear my choice

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Finish attempt ...

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Time left 0:07:19

Question 19

Not yet answered

Marked out of 2.50

Flag question

For a non-singular matrix A whose column vectors are linearly independent, which of the following statement is ALWAYS correct:

a. Nullity of A is half of its rank

b. Rank of A equals its nullity

c. Rank of A is half of its nullity

d. Rank of A is one third of its nullity

e. None of the presented choices

Clear my choice

Question 20

Not yet answered

Marked out of 2.50

Flag

For a non-singular matrix A whose column vectors are linearly independent, which of the following statement is ALWAYS correct:

a. All of the presented choices

b. The basis column vectors and the basis row vectors are equal, and the domain and codomain are the

Quiz navigation

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Finish attempt ...

b. Rank of A equals its nullity

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c. Rank of A is half of its nullity

d. Rank of A is one third of its nullity

e. None of the presented choices

Clear my choice

Question 20

Not yet answered

Marked out of 2.50

Flag question

For a non-singular matrix A whose column vectors are linearly independent, which of the following statement is ALWAYS correct:

a. All of the presented choices

b. The basis column vectors and the basis row vectors are equal, and the domain and codomain are the same

c. The domain and codomain are the same

d. The spaces spanned by the row vectors and the column vectors are the same

e. The basis column vectors and the basis row vectors are equal

Clear my choice

Finish attempt

b. Rank of A equals its nullity

c. Rank of A is half of its nullity

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d. Rank of A is one third of its nullity

e. None of the presented choices

Clear my choice

Question 20

Not yet answered

Marked out of 2.50

Flag question

For a non-singular matrix A whose column vectors are linearly independent, which of the following statement is ALWAYS correct:

a. All of the presented choices

b. The basis column vectors and the basis row vectors are equal, and the domain and codomain are the same

c. The domain and codomain are the same

d. The spaces spanned by the row vectors and the column vectors are the same

e. The basis column vectors and the basis row vectors are equal

Clear my choice