Started on	Friday, 12 March 2021, 8:32:26 AM
State	Finished
Completed on	Friday, 12 March 2021, 9:20:51 AM
Time taken	48 mins 25 secs
Grade	**9.00** out of 20.00 (**45**%)

Question **1**

Not answered

Marked out of 2.00

Select the **most** correct answer.

What are the conditions on a, b, c for the system to have a non trivial solution

ax + by +cz = 0 ; bx + cy + az = 0 ; cx +ay + bz = 0

Select one or more:

- a + b + c =0
- a = b = c
- a + b + c = 0 or a = b = c
- a + b + c not equal to 0

The correct answer is: a + b + c = 0 or a = b = c

Question **2**

Incorrect

Mark 0.00 out of 2.00

What is the dimension of vector space of 5×5 real matrices with sum of entries of each row is zero?

Answer: A is a singular matrix and exist in 5D ✖

The correct answer is: 20

Question **3**

Incorrect

Mark 0.00 out of 2.00

Drag the correct answer

For what value of k and a, b, c the given system has a unique solution

2x + y = a ; x + ky - z = b ; y +2z = c

k not equal to 0 and for any value of a not equal to b and c=1 ✖

k not equal to 0 and for all values of a , b , c

k = 0 and for any value of a , b , c

k not equal to 0 and for a = b = c

The correct answer is:
Drag the correct answer

For what value of k and a, b, c the given system has a unique solution

2x + y = a ; x + ky - z = b ; y +2z = c

[k not equal to 0 and for all values of a , b , c]

Question **4**

Incorrect

Mark 0.00 out of 2.00

Fill in the blanks

The set of vectors $\{(1, 2, 3), (3, 2, 1), (2, 1, 3)\}$ is linearly

dependent

✖ in the vector space

containing 3 vectors

✖

Question **5**

Partially correct

Mark 1.00 out of 3.00

Which of the following statements are True and which are False

True	False		
◉✖	○☑	Linear combination of three vectors is unique.	✖
◉✖	○☑	Two vectors are linearly independent if and only if one is a scalar multiple of the other.	✖
◉✖	○☑	Any non empty set V of vectors can be called a vector space.	✖
○☑	◉✖	Zero vector is a linear combination of any ten vectors in a vector space.	✖
○✖	◉☑	The set of vectors (1,2,3), (1,1,1) and (3,2,1) is linearly independent.	✔
◉☑	○✖	Every vector space is a subspace of itself and every subspace of a vector space is a vector space.	✔

Linear combination of three vectors is unique.: False
Two vectors are linearly independent if and only if one is a scalar multiple of the other.: False
Any non empty set V of vectors can be called a vector space.: False
Zero vector is a linear combination of any ten vectors in a vector space.: True
The set of vectors (1,2,3), (1,1,1) and (3,2,1) is linearly independent.: False
Every vector space is a subspace of itself and every subspace of a vector space is a vector space.: True

Question **6**

Correct

Mark 2.00 out of 2.00

If $M=\begin{bmatrix}\frac{1}{2} & \frac{2}{3}\end{bmatrix}$, $M^2-\lambda M-I_2=0$, where I_2 is an 2×2 identity matrix, then the value of λ is

Answer: 4 ✔

The correct answer is: 4

Question **7**

Correct

Mark 1.00 out of 1.00

True or False

If A is an invertible $n \times n$ matrix then the equation $AX = b$ is consistent for every b in $\mathbb{R}^n$.

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **8**

Correct

Mark 2.00 out of 2.00

True or False

For any two 2×2 matrices A and B, rank(AB)=rank(BA).

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **9**

Incorrect

Mark 0.00 out of 1.00

Select True or False:

If a subspace of a real vector space contains a non-zero vector then it must be an infinite set.

Select one:

- True
- False ✖

The correct answer is 'True'.

Question **10**

Correct

Mark 1.00 out of 1.00

Determine whether the following statement is True or False.

Set of vectors $\{(-2,1),(4,-2)\}$ forms a basis of $\mathbb{R}^2$.

Select one:

- True
- False ✔

The correct answer is: False

Question **11**

Correct

Mark 1.00 out of 1.00

True or False

Every upper triangular matrix is in a row echelon form!

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **12**

Correct

Mark 1.00 out of 1.00

If $|A| \neq 0$ then a system $AX = B$ is [consistent and has unique solution] ✔

[inconsistent and has no solution] [consistent and has trivial solution]

The correct answer is:
If $|A| \neq 0$ then a system $AX = B$ is [consistent and has unique solution]

◄ Linear Algebra - Live and Recorded Lectures using Webex

Jump to...

Linear algebra(20-21): TEST-2 ►