Grand Quiz Spring 2021
Subject Code MTH501 lecture 1 to 22
Solved By Riz Mughal

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https://www.facebook.com/groups/923887914750307

https://www.youtube.com/channel/UCINsFwDiB62SValCcPDZbRQ/playlists

Dear Viewers:

I'm providing 100% correct quiz solution. You can visit my YouTube channel and get more information about all other subjects' quizzes and final year project (CS619).
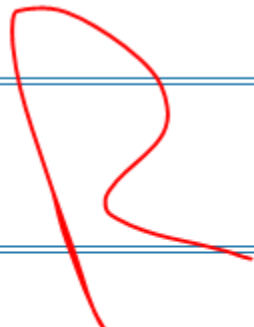
RIZ MUGHAL (SQA ENGINEER)

Question # 1 of 30 (Start time: 09:00:58 AM, 30 June 2021)

$$\begin{vmatrix} \int_0^1 e^x\,dx & \int_0^1 e^{1-x}\,dx \\ -\int_0^1 e^{1-x}\,dx & \int_0^1 e^x\,dx \end{vmatrix} = -----$$

Select the correct option

Reload

$2(e-1)^2$

$(e-1)^2$

0

$e-1$

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Question # 2 of 30 (Start time: 09:01:23 AM, 30 June 2021)   **Total Marks:**

Whenever a solution set is described explicitly with vectors, we say that the solution is in parametric vector form. The equation x=su+tv (s, t in R) is called
a

Select the correct option

○ parametric vector equation of the plane
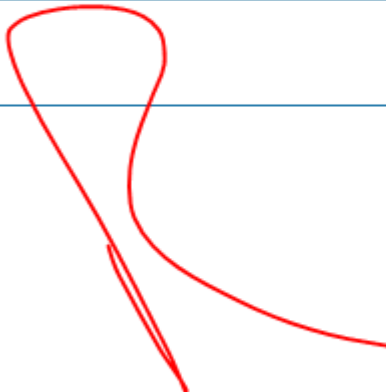
○ parametric vector equation of the line

Question # 3 of 30 (Start time: 09:01:39 AM, 30 June 2021)

If $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$ $\overset{\text{Row Equivalent}}{\sim}$ $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, then the Columns of A are Linearly - - - - - - -

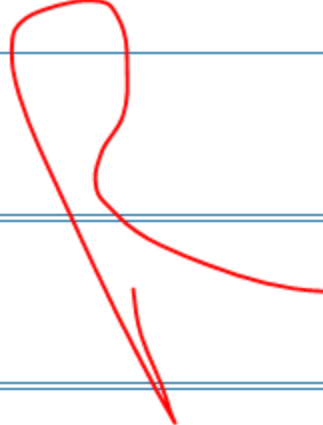**Select the correct option**

Rel

● Independent

○ Dependent

MTH501:Grand Quiz

If A and B are matrices then A+B is only possible if both matrices have same -------

Select the correct option

	Order
●	

	Rows
○	

	Elements
○	

	Columns
○	

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Question # 5 of 30 (Start time: 09:02:10 AM, 30 June 2021)

If $AB = I = BA$ for $matrices\, A,\ B\ and\ I, where\ I\ is\ an\ identity\ matrix,\ \ then$

Select the correct option

Re

- ○ $A^{(-1)} = B, B^{(-1)} = A,$
- ○ B is inverse of A.
- ● All of the above.
- ○ A is inverse of B.

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Let W = {(x, y) such that x, y in R and y = 0}. Is W a vector subspace of plane.

Select the correct option

○	NO
●	YES

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The equation $Ax = b$ has a solution if and only if

Select the correct option

●	b is the linear combination of the columns of A
○	b is a non-linear combination of the columns of A

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Question # 8 of 30 (Start time: 09:02:54 AM, 30 June 2021)

Which of the following would be the Augmented Matrix associated with the system: $\begin{array}{l} 2x = 1 \\ -2y = x? \end{array}$

Select the correct option

Reload Mat

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

$\left(\begin{array}{cc} 2 & 1 \\ -2 & 1 \end{array} \right)$

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

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

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A determinant does not change if we add a multiple of a row to another row.

Select the correct option

TRUE

⬤

FALSE

○

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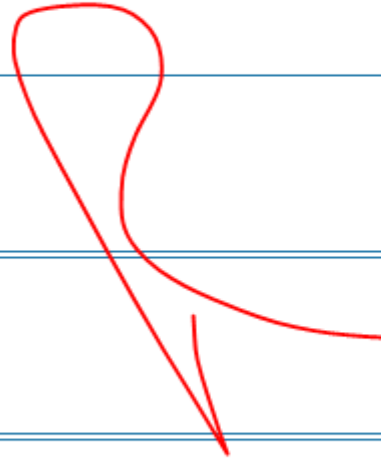
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How many assumptions are there in Jacobi's method?

Select the correct option

○	4
●	2
○	3
○	5

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Question # 11 of 30 (Start time: 09:03:42 AM, 30 June 2021)

Suppose k is any scalar and $u = (u_1, u_2, \ldots, u_n)$, $v = (v_1, v_2, \ldots, v_n) \in R^n$, then the distributive law states that

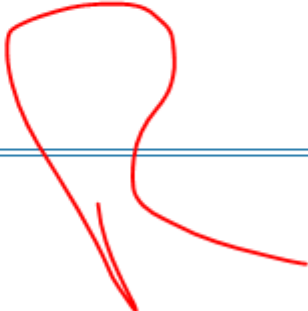**Select the correct option**

Reload Math

K(u+v)=ku+kv

k(u+v)=kuv

Click to Save Answer & Move to Next

Question # 12 of 30 (Start time: 09:03:57 AM, 30 June 2021)

An m x m _____ matrix is only square matrix that is both unit lower triangular and upper triangular.

Select the correct option

scalar

○

identity

●

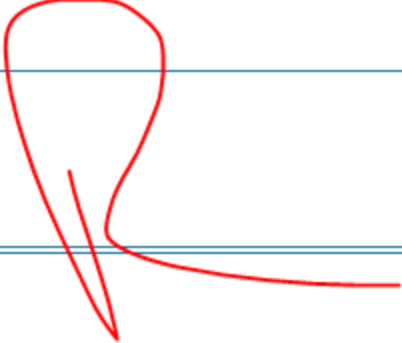null

○

diagonal

○

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Why inverse of the matrix A= [1   2] is NOT possible?

Select the correct option

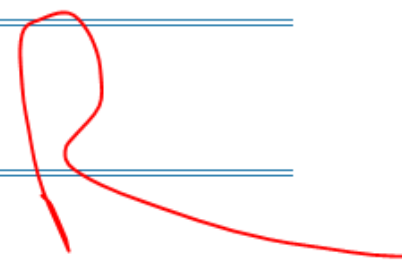|	
○	Because it is an identity matrix.
○	Because it is a square matrix.
●	Because it is a rectangular matrix.
○	Because it is a zero matrix.

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If the equation: $\begin{pmatrix} -2 & 3 \\ 5 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} b_1 \\ b_2 \end{pmatrix}$ has the solution for all $b_1, b_2 \in \mathbb{R}$, then $\begin{pmatrix} -2 \\ 5 \end{pmatrix}$ and $\begin{pmatrix} 3 \\ 1 \end{pmatrix}$ will span $----$

Select the correct option

Reload Math E

- ● $\mathbb{R}^2 space$

- ○ Nothing

- ○ $\mathbb{R}^3 space$

- ○ $\mathbb{R}\ space$

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Which of the following is corresponding Matrix form of the Linear equation $x + y = 3$?

Select the correct option

Reload Math Equa

$$x[1] + y[1] = 3[1]$$

$$x \begin{pmatrix} 1 \\ 0 \end{pmatrix} + y \begin{pmatrix} 0 \\ 1 \end{pmatrix} = 3 \begin{pmatrix} 0 \\ 1 \end{pmatrix}$$

Cant be expressed in Matrix form.

$$x \begin{pmatrix} 1 \\ 0 \end{pmatrix} + y \begin{pmatrix} 0 \\ 1 \end{pmatrix} = 3 \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

Question # 16 of 30 (Start time: 09:05:06 AM, 30 June 2021)

Let $S = \{v_1, v_2, \ldots, v_n\}$ be a set in V and le $H = span\,\{v_1, v_2, \ldots, v_p\}$. Some subsets of S are basis for H if ----
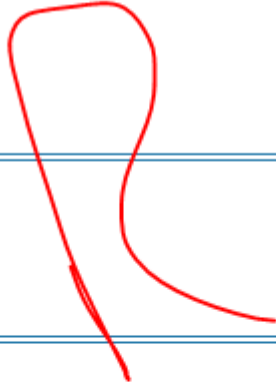
Select the correct option

$H = 0$

○

$H \neq \{0\}$

●

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Question # 17 of 30 (Start time: 09:05:20 AM, 30 June 2021)

According to determinant properties, the determinants of resulting matrix equal to k delta if elements of rows are

Select the correct option

●	Multiplied to constant k
○	Divided to constant k
○	Subtracting to constant k
○	Added to constant k

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If a matrix A is invertible than adj(A) is also invertible.

Select the correct option

	TRUE
●	

	FALSE
○	

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If a matrix is in reduced row echelon form, then it is also in row echelon form.

Select the correct option

○	False
○	None of the above
●	True
○	May be

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Question # 20 of 30 (Start time: 09:06:07 AM, 30 June 2021)   Total Marl

If A is a square matrix, then the Minor of entry ith row and jth column is to be the determinant of the sub matrix that remains when the ith row and jth column of A are:
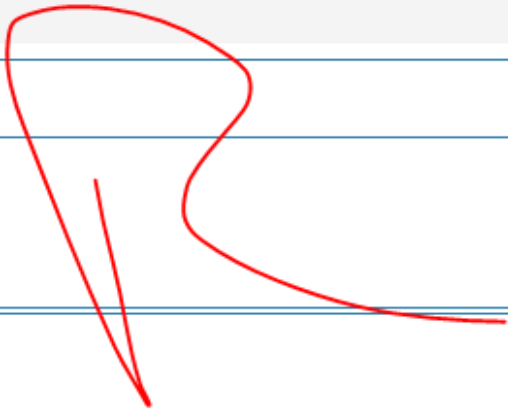
Select the correct option

○ added

● deleted

○ multiplied

○ divided

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Question # 21 of 30 (Start time: 09:06:23 AM, 30 June 2021)

While using the Cramer's rule, if determinant D = 0, and other determinant is not zero then how many solutions are there?

Select the correct option

- ● no solution
- ○ two solutions
- ○ many solutions
- ○ one solution

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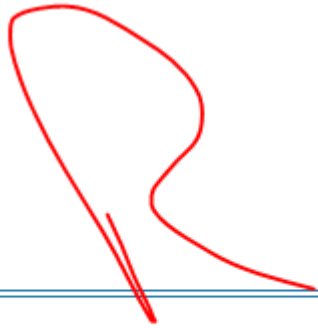
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A matrix has not the same determinant if we add a multiple of a column to another column.

Select the correct option

	TRUE
○	
●	FALSE

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Question # 23 of 30 (Start time: 09:06:57 AM, 30 June 2021)

Since vector $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ lies in the span $\left\{ \begin{pmatrix} 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ 1 \end{pmatrix} \right\}$ then the vectors $\begin{pmatrix} 2 \\ 3 \end{pmatrix}, \begin{pmatrix} 1 \\ 0 \end{pmatrix}$ and $\begin{pmatrix} 0 \\ 1 \end{pmatrix}$ are Linearly —
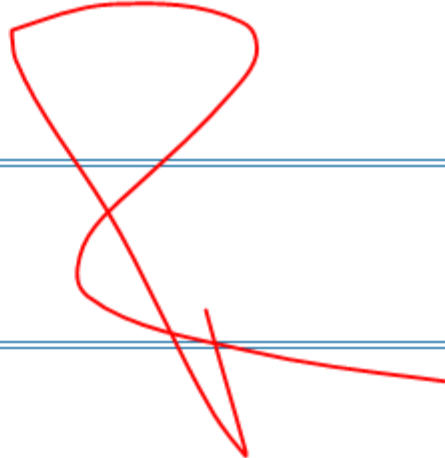
Select the correct option

Reload Ma

Independent

Dependent

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Question # 24 of 30 (Start time: 09:07:12 AM, 30 June 2021)

If a square matrix A can be reduced to row echelon form with _____ interchanges, then A has an LU-decomposition.

Select the correct option

- ● no row
- ○ no column
- ○ column
- ○ row

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Question # 25 of 30 (Start time: 09:07:26 AM. 30 June 2021)

A transformation $T : R^n \rightarrow R^m$ Is a rule that assigns to each vector x in R^n , an image vector T(x) in R^m. The set R^n is called the_____ , and R^m is called the _____.

Select the correct option

⊘ **Reload Mat**

●	domain of T, co-domain of T
○	co-domain of T, domain of T
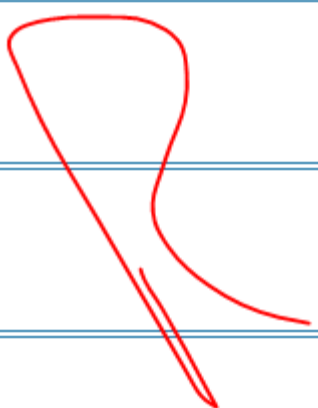
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Algebraic expression involving more than one term and less than 3 terms, is known as

Select the correct option

⬤	Binomial
◯	Monomial
◯	Multinomial
◯	Trinomial

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At what condition det(AB)=(detA)(detB) is possible?

Select the correct option
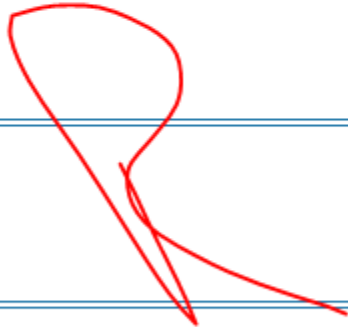
●	When A and B are n x n matrices
○	When B is a column matrix
○	When A and B are m x n matrices
○	When A is a row matrix

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Which of the following can refer a single term of an Algebraic expression?

Select the correct option

○	(6x/y) such that y=0
○	2x-3y
●	6xy
○	2x+3y

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Question # 29 of 30 (Start time: 09:08:34 AM, 30 June 2021)

Which of the following is an example of Matrix in Echelon form?

Select the correct option

○ $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$

○ $\begin{pmatrix} 0 & 1 \\ 0 & 1 \end{pmatrix}$

● $\begin{pmatrix} 1 & 1 \\ 0 & 1 \end{pmatrix}$

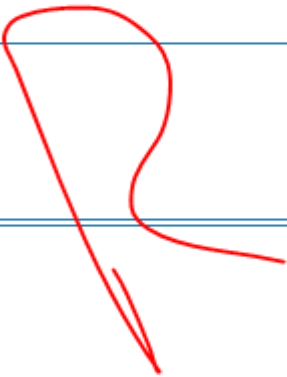○ $\begin{pmatrix} 0 & 0 \\ 1 & 1 \end{pmatrix}$

Click to Save Answer &

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The Gauss-Seidel method is applicable to symmetric -----------definite matrices

Select the correct option

○	Equal
●	Positive
○	Zero
○	Negative

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