Mth501 grand quiz solved by riz mughal

Linear Algebra (Virtual University of Pakistan)

Solved by riz mughal

BC170402555: AMNA MASOOD

MTH501:Grand Quiz

Question # 1 of 30 (Start time: 08:03:35 AM, 01 July 2020)

Which of the following will be the Matrix Product corresponding to Linear Combinition: $\begin{pmatrix} -2 \\ 5 \end{pmatrix} x + \begin{pmatrix} 3 \\ 1 \end{pmatrix} y$?

Select the correct option

○	$\begin{pmatrix} 1 & -3 \\ -5 & -2 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix}$
○	$\begin{pmatrix} -2 & 5 \\ 3 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix}$
●	$\begin{pmatrix} -2 & 3 \\ 5 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix}$
○	$\begin{pmatrix} 3 & -2 \\ 1 & 5 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix}$

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Question # 2 of 30 (Start time: 08:04:12 AM, 01 July 2020)

Which of the following property does not hold for matrix multiplication?

Select the correct option

○	Associative
○	Distributive
●	Commutative
○	Additive inverse

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Question # 3 of 30 (Start time: 08:04:37 AM, 01 July 2020)

For the matrix: $A = \begin{pmatrix} 4 & x+2 \\ 2x-3 & 1 \end{pmatrix}$, if $A = A^t$, then $x = - - -$.

Select the correct option

- [x] 5
- [ ] 5/2
- [ ] -5

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Question # 4 of 30 (Start time: 08:05:10 AM, 01 July 2020)

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

Select the correct option

- [ ] $x\begin{pmatrix}1\\0\end{pmatrix} + y\begin{pmatrix}0\\1\end{pmatrix} = 3\begin{pmatrix}1\\0\end{pmatrix}$
- [ ] $x\begin{pmatrix}1\\0\end{pmatrix} + y\begin{pmatrix}0\\1\end{pmatrix} = 3\begin{pmatrix}0\\1\end{pmatrix}$
- [x] $x\,[1] + y\,[1] = 3\,[1]$
- [ ] Cant be expressed in Matrix form

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Question # 5 of 30 (Start time: 08:06:05 AM, 01 July 2020)

Set $\left\{\begin{pmatrix}1\\2\end{pmatrix}, \begin{pmatrix}0\\0\end{pmatrix}\right\}$ is Linearly - - - - - in $\mathbb{R}^2$.

Select the correct option

○	Independent
●	Dependent

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Question # 6 of 30 (Start time: 08:06:30 AM, 01 July 2020)

If one row of A is multiplied by k to produce B, then which of the following condition is true?

Select the correct option

- det(AB) = (detA)(detB)
- detB = k detA
- detB = - detA
- detB = detA

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Question # 7 of 30 (Start time: 08:07:02 AM, 01 July 2020)

If determinant of a matrix is zero then which of the following is true for that system?

Select the correct option

- ○ The inversion method applies.
- ● The inversion method fails.

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Question # 8 of 30 (Start time: 08:07:36 AM, 01 July 2020)

For the following system of Equations:
$x + 2y = 0, 2x - y = 0;$
which variable can be taken as free?

Select the correct option

- ○ only x
- ○ only y
- ○ both x and y
- ● either x or y

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Question # 9 of 30 (Start time: 08:08:04 AM, 01 July 2020)

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

- ● K(u+v)=ku+kv
- ○ k(u+v)=kuv

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Question # 10 of 30 (Start time: 08:08:29 AM, 01 July 2020)

Under which of the following condition, a system of Linear Equations whose Row - Reduce form is $\left(\begin{array}{cc|c} 1 & 2 & -1 \\ 0 & 0 & h-3k \end{array}\right)$ has *Infinite* many solutions?

Select the correct option

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- [x] $h = 3k$
- [ ] $h \neq 3k$
- [ ] $(h, k) = (0, 0)$

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Question # 11 of 30 (Start time: 08:09:06 AM, 01 July 2020)

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

- [x] Dependent
- [ ] Independent

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Question # 12 of 30 (Start time: 08:09:38 AM, 01 July 2020)

The order of matrix $[2 \ 1 \ 3]$ is

Select the correct option

- ○ 2-by-1
- ○ 2-by-3
- ■ 1-by-3
- ○ 3-by-1

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Question # 13 of 30 (Start time: 08:10:20 AM, 01 July 2020)

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

Select the correct option

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

Question # 13 of 30 (Start time: 08:10:20 AM, 01 July 2020)

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

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

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Question # 14 of 30 (Start time: 08:10:47 AM, 01 July 2020)

Linear algebra is the study of linear sets of equations and their ---------- properties.

Select the correct option

- ○ non-linear
- ■ transformation

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Question # 15 of 30 (Start time: 08:11:13 AM, 01 July 2020)

If an augmented matrix $[A \ \ b]$ has a pivot position in every row then

Select the correct option

- (●) The equation $Ax = b$ may or may not be consistent
- ( ) The equation $Ax = b$ may or may not be inconsistent

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Question # 16 of 30 (Start time: 08:11:43 AM, 01 July 2020)

LU-factorization is a matrix decomposition which writes a matrix as the product of a _____ matrix and an upper triangular matrix.

Select the correct option

- ○ diagonal
- ○ null
- ○ identity
- ● lower triangular

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Question # 17 of 30 (Start time: 08:12:08 AM, 01 July 2020)

If $A^t = A^{-1}, then \ \ |A| = ----.$

Select the correct option

○	0
○	1
○	-1
●	± 1

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Question # 18 of 30 (Start time: 08:12:36 AM, 01 July 2020)

The three most important special cases of R^n are $x \in R$

Select the correct option

●	R, R^2, R^3
○	R, N

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Question # 19 of 30 (Start time: 08:12:59 AM, 01 July 2020)

If all the entries of a row or a column of a square matrix are zero, then det (A) will be _____.

Select the correct option

- [x] zero
- [ ] infinity
- [ ] one
- [ ] non zero

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Question # 20 of 30 (Start time: 08:13:21 AM, 01 July 2020)

Which of the following is the area of the parallelogram determined by the columns of A where A is a 2 x 2 matrix?

Select the correct option

- [A]
- |det A|
- det A

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Question # 23 of 30 (Start time: 08:14:20 AM, 01 July 20

Inverse of a matrix is given by

Select the correct option

○	$A^{-1} = \frac{1}{detA} A^{-1}$
●	$A^{-1} = \frac{1}{detA} adj(A)$

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Question # 27 of 30 (Start time: 08:15:45 AM, 01 July 2020)

|A|.|B| = |A.B|

Select the correct option

- (●) TRUE
- ( ) FALSE

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Question # 28 of 30 (Start time: 08:16:08 AM, 01 July 2020)

Which of the following is NOT the axiom for vector space where u, v, w in V are set of vectors and l, m, n are scalars?

Select the correct option

○	u + (v + w) = (u + v) + w
●	u.v =v.u
○	l (u + v)= l u + l v
	(l +m) u= l u+ m u

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Question # 30 of 30 (Start time: 08:16:53 AM, 01 July 2020)

Non square matrices do not have inverse

Select the correct option

- [x] True
- [ ] False