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Which statement about the General Least Square Method is true?

Answer (Please select your correct option)

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- Solution obtained by this method is always unique.
- This is a numerical method for the solution of System of Linear Equations.
- This method find an x that makes Ax as close as possible to the b .
- This method gives us exact solution of the system.

correct answer solved by Hadi
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Let $v = (1, -2, 2, 0)$. The unit vector in the same direction as v is

Answer (Please select your correct option)

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$\left(\frac{1}{3}, \frac{2}{3}, \frac{2}{3}, 0\right)$

$\left(\frac{1}{3}, -\frac{2}{3}, \frac{2}{3}, 0\right)$

correct

$\left(\frac{-1}{3}, \frac{2}{3}, \frac{-2}{3}, 0\right)$

$\left(\frac{1}{3}, -\frac{2}{3}, \frac{2}{3}, \frac{1}{3}\right)$

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Let $u = (3, -2), v = (4, 5)$. For the weighted Euclidean inner product $\langle u, v \rangle = 4u_1v_1 + 5u_2v_2$
 $\langle v, u \rangle =$

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Answer (Please select your correct option)

 2 -2 3 -3

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Let $v = (0, 2, 2, 1)$. The unit vector in the same direction as v is

Answer (Please select your correct option)

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$\left(0, \frac{2}{3}, \frac{2}{3}, \frac{-1}{3}\right)$

$\left(0, \frac{-2}{3}, \frac{2}{3}, \frac{-1}{3}\right)$

$\left(0, \frac{2}{3}, \frac{2}{3}, \frac{1}{3}\right)$

$\left(0, \frac{-2}{3}, \frac{2}{3}, \frac{1}{3}\right)$

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Let \mathbb{R}^3 have the Euclidean inner product. Then $u = (2, 1, 3), v = (1, 7, k)$ are orthogonal for

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Answer (Please select your correct option)

$k = 9$

$k = -3$

$k = -9$

$k = 3$

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Let A be $n \times n$ matrix whose entries are real. If λ is an eigenvalue of A with x a corresponding eigenvector in \mathbb{R}^n , then

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Answer (Please select your correct option)

$A\bar{x} = \lambda\bar{x}$

$A\bar{x} = \bar{\lambda}\bar{x}$

$Ax = \bar{\lambda}x$

$A\bar{x} = \lambda^{-1}\bar{x}$

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Suppose that $A = \begin{bmatrix} 1.25 & -0.75 \\ -0.75 & 1.25 \end{bmatrix}$ has eigenvalues 2 and 0.5 .Then origin is a

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Answer (Please select your correct option)

Saddle point

correct

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Repellor

Attractor

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Suppose that $A = \begin{bmatrix} 0.5 & 0.6 \\ -0.3 & 1.4 \end{bmatrix}$ has eigenvalues 0.8 and 1.1 .Then origin is a

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Answer (Please select your correct option)

Saddle point

correct

Repellor

Attractor

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If A is an $m \times n$ matrix with linearly independent column vectors, then A can be factored as

$$A = QR$$

Where Q is an $m \times n$ matrix with orthonormal column vectors, and R is an $n \times n$

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Answer (Please select your correct option)

Upper triangular matrix

correct

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Invertible matrix

Invertible lower triangular matrix

Invertible upper triangular matrix

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The matrix equation $A^T A \hat{x} = A^T b$ represents a system of linear equations commonly referred to as the

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Answer (Please select your correct option)

normal equations for x

normal equations for \hat{x}

normal equations for A

normal equations for b

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By the Best Approximation Theorem, the distance from y to W is $\|y - \hat{y}\|$, where $\hat{y} =$

Answer (Please select your correct option)

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$\text{proj}_W \hat{y}$

$\text{proj}_W y$

correct

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$\text{proj}_y W$

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$\|u + v + w\| \leq \|u\| + \|v\| + \|w\|$ for all vectors u, v and w in an inner product space.

Answer (Please select your correct option)

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True



correct

False



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The dominant eigenvalue for the matrix $A = \begin{bmatrix} 0 & 0 & 2 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$ is

Answer (Please select your correct option)

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$\lambda = 1$

$\lambda = -3$

correct

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$\lambda = -1$

$\lambda = 0$

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A square matrix A is invertible if and only if $x = 0$ is not an eigen value of A .

Answer (Please select your correct option)

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True



correct

False



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A square matrix with orthogonal columns _____ matrix. (Click on most appropriate)

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Answer (Please select your correct option)

is an orthogonal

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may be an orthogonal

may not be an orthogonal

is not an orthogonal

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If two rows are orthogonal, they are _____.

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Answer (Please select your correct option)

linearly independent

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linearly dependent

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If x is orthogonal to both u and v , then x must be _____ to $u + v$.

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Answer (Please select your correct option)

orthogonal

orthonormal

perpendicular

parallel

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check

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The given system
$$\begin{matrix} 2x + 3y = 3 \\ 6x + 9y = 7 \end{matrix}$$
 has

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Answer (Please select your correct option)

Unique solution

Infinitely many solutions

No solution

None of these

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Which statement about the matrix $\begin{bmatrix} 1 & 0 & 0 & 0 \\ 7 & 2 & 0 & 0 \\ 9 & 1 & 2 & 0 \\ 5 & 4 & 2 & -1 \end{bmatrix}$ is false?

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Answer (Please select your correct option)

- Eigenvalue 2 has Algebraic multiplicity 1
- Eigenvalue of the matrix are 1, 2 and -1.
- Characteristic polynomial of the matrix is $(1 - \lambda)(2 - \lambda)^2(-1 - \lambda)$.
- Eigenvalue -1 has multiplicity 1.

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If $A = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix}$ is diagonalizable then A has 2 distinct eigenvalues.

Answer (Please select your correct option)

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True

0 1
1 0

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False

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A is diagonalizable if $A = PDP^{-1}$ Where

Answer (Please select your correct option)

VuAnswers.com

D is any matrix and P is an invertible matrix

D is a diagonal matrix and P is any matrix

D is a diagonal matrix and P is invertible matrix

D is a invertible matrix and P is any matrix

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Which statement is FALSE.

Answer (Please select your correct option)

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If $Ax = \lambda x$ for some real number λ then λ is known as eigenvalue of the matrix A .

The eigenvalues of any matrix are on its main diagonal.

In order to find the eigenvalues we solve the equation $|A - \lambda I| = 0$

An eigenspaces of A is the Null space of some matrix.

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If a set $S = \{1, x, x^2\}$ is a basis for p_2 and $[\frac{1}{p}]_S = (2, 4, 7)$, then which of the following is the most appropriate option ?

Answer (Please select your correct option)

VuAnswers.com

$p_2 = 2 - 4x + 7x^2$

$p_2 = 2 - 4x - 7x^2$

$p_2 = 2 + 4x + 7x^2$

$p_2 = 4x - 7x^2$

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Which of the following is the set of standard basis for R^3 ?

Answer (Please select your correct option)

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$\{(1, 1, 0), (0, 1, 0), (1, 0, 1)\}$

$\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$

$\{(1, 0, 0), (1, 1, 0), (0, 0, 1)\}$

$\{(1, 0, 0), (0, 1, 0), (1, 1, 1)\}$

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Consider the bases for R^2 given by $B = \{ \overset{\uparrow}{b}_1, \overset{\uparrow}{b}_2 \}$ and $C = \{ \overset{\uparrow}{c}_1, \overset{\uparrow}{c}_2 \}$; where $\overset{\uparrow}{b}_1 = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$, $\overset{\uparrow}{b}_2 = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$, $\overset{\uparrow}{c}_1 = \begin{bmatrix} -5 \\ 3 \end{bmatrix}$, $\overset{\uparrow}{c}_2 = \begin{bmatrix} -2 \\ 1 \end{bmatrix}$, also assume that $P_{B \leftarrow C} = \begin{bmatrix} -2 & -1 \\ 3 & 1 \end{bmatrix}$; then which of the following is the change-of-coordinates matrix from B to C ?

Answer (Please select your correct option)

VuAnswers.com

$P_{C \leftarrow B} = \begin{bmatrix} 1 & 1 \\ -3 & -2 \end{bmatrix}$

$P_{C \leftarrow B} = \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$

$P_{C \leftarrow B} = \begin{bmatrix} -5 & -2 \\ 3 & 1 \end{bmatrix}$

$P_{C \leftarrow B} = \begin{bmatrix} -8 & -3 \\ 3 & 1 \end{bmatrix}$

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If the general term of a typical signal is $(0.6)^k$, then determine which of the following is the signal for $k = -2$?

Answer (Please select your correct option)

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$(0.6)^{-2} = 0$

$(0.6)^{-2} = 0.6$

$(0.6)^{-2} = (0.6)^2$

$(0.6)^{-2} = 1/(0.6)^2$

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If the Casorati matrix is not invertible , then which of the following is the most appropriate option regarding the associated signals ?

Answer (Please select your correct option)

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The signals are linearly independent .

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The signals are linearly dependent .

The signals may or may not dependent .

The signals may or may not independent .

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If $\{y_k\} = \{\dots, 1, 0.7, 0, -0.7, -1, -0.7, 0, 0.7, 1, 0.7, 0, \dots\}$ and $0.35y_{k+2} + 0.6y_{k+1} + 0.42y_k = z_k$;

↑

$k = 0$

then which of the following is the value of z_0 ?

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Answer (Please select your correct option)

0.840

0.049

-0.770

- 1.139

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Suppose that $B = \{b_1, b_2\}$ is a basis for V and $C = \{c_1, c_2, c_3\}$ is a basis for W . Let $T: V \rightarrow W$ be a linear transformation with the property that $T(b_1) = 5c_1 - 2c_2 + 3c_3$ and $T(b_2) = 4c_1 - c_2 + 7c_3$. Determine the value of $[T(b_2)]_C$?

Answer (Please select your correct option)

VuAnswers.com

$\begin{bmatrix} 5 \\ -2 \\ 3 \end{bmatrix}$

$\begin{bmatrix} 7 \\ -1 \\ 4 \end{bmatrix}$

$\begin{bmatrix} 4 \\ -1 \\ 7 \end{bmatrix}$

$\begin{bmatrix} 3 \\ -2 \\ 7 \end{bmatrix}$

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Determine whether the set of vectors are orthogonal or not.

$$\begin{bmatrix} 5 \\ -4 \\ 0 \end{bmatrix}, \begin{bmatrix} -4 \\ 1 \\ -3 \end{bmatrix}, \begin{bmatrix} 3 \\ 3 \\ 5 \end{bmatrix}$$

Answer ([Please click here to Add Answer](#))

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Question No : 1 of 52

Marks: 1 (Budgeted Time 1 Min)

Which statement about the General Least Square Method is true?

Answer (Please select your correct option)

- Solution obtained by this method is always unique.
- This is a numerical method for the solution of System of Linear Equations.
- This method find an x that makes Ax as close as possible to the b .
- This method gives us exact solution of the system.

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1



Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

Let $v = (1, -2, 2, 0)$. The unit vector in the same direction as v is

Answer (Please select your correct option)

$\left(\frac{1}{3}, \frac{2}{3}, \frac{2}{3}, 0\right)$

$\left(\frac{1}{3}, \frac{-2}{3}, \frac{2}{3}, 0\right)$

ans

$\left(\frac{-1}{3}, \frac{2}{3}, \frac{-2}{3}, 0\right)$

$\left(\frac{1}{3}, \frac{-2}{3}, \frac{2}{3}, \frac{1}{3}\right)$

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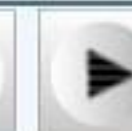
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2



Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

Let $v = (1, -2, 2, 0)$. The unit vector in the same direction as v has magnitude

Answer (Please select your correct option)

 3

ans

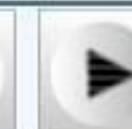
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 1 2 -1

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3



Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

Let \mathbb{R}^3 have the Euclidean inner product. Then $u = (2, 1, 3), v = (1, 7, k)$ are orthogonal for

out of

Answer (Please select your correct option)

 $k = 9$ $k = -3$ $k = -9$ $k = 3$

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4



Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

Let \mathbb{R}^3 have the Euclidean inner product. Then $u = (k, -3, 1), v = (-3, 5, 6)$ are orthogonal for

out of

Answer (Please select your correct option)

$k = 2$

$k = -2$

$k = 3$

$k = -3$

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5



Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

If u and v are orthogonal then

Answer (Please select your correct option)

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

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

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

$\|u - v\|^{\frac{1}{2}} = \|u\| + \|v\|$

i thinkkkkk.....

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6



Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

Suppose that $A = \begin{bmatrix} 0.5 & 0.6 \\ -0.3 & 1.4 \end{bmatrix}$ has eigenvalues 0.8 and 1.1. Then origin is a

Answer (Please select your correct option)

 Saddle point

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 Repellor Attractor

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7



Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

Suppose that $A = \begin{bmatrix} 0.5 & 0.6 \\ -0.3 & 1.4 \end{bmatrix}$ has eigenvalues 0.8 and 1.1. Then origin is a

Answer (Please select your correct option)

 Saddle point

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7



Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

If A is an $m \times n$ matrix with linearly independent column vectors, then A can be factored as

$$A = QR$$

Where Q is an $m \times n$ matrix with orthonormal column vectors, and R is an $n \times n$

Answer (Please select your correct option)

 Upper triangular matrix

ans

 Invertible matrix Invertible lower triangular matrix Invertible upper triangular matrix

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8



Question No : 9 of 52 **Marks: 1 (Budgeted Time 1 Min)**

The QR-Decomposition of a 3×3 matrix A gives

Answer (Please select your correct option)

matrix Q of order 3×1 and R of order 3×1

matrix Q of order 3×3 and R of order 3×1

matrix Q of order 3×3 and R of order 3×3

ans

1 0 0
0 1 0
0 0 1

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9








Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

The QR-Decomposition of a 5×2 matrix A gives

Answer (Please select your correct option)

matrix Q of order 5×1 and R of order 5×1

matrix Q of order 5×2 and R of order 2×5

matrix Q of order 5×2 and R of order 2×2

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10



Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

If u, v and w are vectors in a real inner product space, and k is any scalar, then which one of the following is not a property for the inner product space

out of

Answer (Please select your correct option)

$\langle 0, v \rangle = \langle v, 0 \rangle$

$\langle u, kv \rangle = k \langle u, v \rangle$

$\langle u, v - w \rangle = \langle u, v \rangle + \langle u, w \rangle$

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11



Question No : 12 of 52

Marks: 1 (Budgeted Time 1 Min)

The dominant eigenvalue for the matrix $A = \begin{bmatrix} 0 & 0 & 2 & 0 \\ 1 & 0 & 1 & 0 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$ is

Answer (Please select your correct option)

 $\lambda = 1$ $\lambda = -3$

ans

 $\lambda = -1$ $\lambda = 0$

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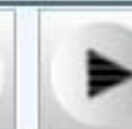
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12



Question No : 13 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ of a matrix is the sum of main diagonal elements of that matrix.

Answer (Please select your correct option)

- Trace
- Determinent
- Eigenvalue
- Sum

ans

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Question No : 14 of 52 **Marks: 1 (Budgeted Time 1 Min)**

If a square matrix has orthonormal columns, then it also has _____.

Answer (Please select your correct option)

- orthonormal rows
- ans**
- orthonormal diagonal

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14



Question No : 15 of 52 **Marks: 1 (Budgeted Time 1 Min)**

If x is orthogonal to both u and v , then x must be _____ to $u - v$.

Answer (Please select your correct option)

- orthogonal
- orthonormal if u-v then this option
- perpendicular Email : usmanraj20@gmail.com
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- parallel

ans

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Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

If a matrix U has orthonormal columns, then _____ = I

Answer (Please select your correct option)

- UU^T
- ans
- UU
- U^{-1}
- $U+U^T$

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16



Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

If 5 is an eigenvalue of A and x is a corresponding eigenvector, then the eigenvalue of A^2 is

Answer (Please select your correct option)

- 5
- 25
- 10
- 15

ans

$$A^2 = 5(2) = 25$$

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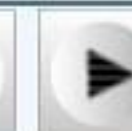
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17



Question No : 18 of 52 **Marks: 1 (Budgeted Time 1 Min)**

The eigenvalues of the matrix $\begin{bmatrix} 3 & -4 & 1 \\ 0 & -5 & 1 \\ 0 & 0 & 4 \end{bmatrix}$ are

we read down to up

Answer (Please select your correct option)

- 3,-4,1
- 4,-5,3
- 3,-5,1
- 4,1,-5

ans

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$$\begin{bmatrix} 3 & & \\ & -5 & \\ & & 4 \end{bmatrix}$$

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18




Question No : 19 of 52

Marks: 1 (Budgeted Time 1 Min)

If $A = \begin{pmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{pmatrix}$ is diagonalizable, then A is invertible.

Answer (Please select your correct option)

True

 ans

False


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19



Question No : 20 of 52

Marks: 1 (Budgeted Time 1 Min) An $n \times n$ matrix A is diagonalizable if and only if A has

Answer (Please select your correct option)

 n linearly independent eigenvectors **ans** n^2 linearly independent eigenvectors $n + 1$ linearly independent eigenvectorsCorrect answer solved by Hadi
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Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

Let A have eigenvalues 2, 5, 0, -7, and -2. Then the dominant eigenvalue for A is

Answer (Please select your correct option)

 $\lambda = 5$ $\lambda = 0$ $\lambda = -7$ $\lambda = 2$

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21



Question No : 22 of 52

Marks: 1 (Budgeted Time 1 Min)

Which statement is FALSE.

Answer (Please select your correct option)

If $Ax = \lambda x$ for some real number λ then λ is known as eigenvalue of the matrix A.

The eigenvalues of any matrix are on its main diagonal.

ans

In order to find the eigenvalues we solve the equation $|A - \lambda| = 0$

An eigenspaces of A is the Null space of some matrix.

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Question No : 23 of 52 **Marks: 1 (Budgeted Time 1 Min)**

Algebra is a transformation of real life problems into sort of _____.

Answer (Please select your correct option)

- logical representation
- mathematical representation
- physical representation
- illogical representation

ans

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23

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Question No : 24 of 52

Marks: 1 (Budgeted Time 1 Min)

If reduced echelon form of a linear system is $\begin{bmatrix} 1 & 0 & 5 & 5 \\ 0 & 1 & 1 & 6 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ when free variable $x_3 = 0$, then which of the following is true for it?

Answer (Please select your correct option)

 The particular solution is $(0, 5, 6)$. The particular solution is $(6, 5, 0)$. The particular solution is $(5, 6, 0)$. The particular solution is $(0, 6, 5)$.

ans

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Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

If the vector equation $c_1 \vec{v}_1 + c_2 \vec{v}_2 = 0$ with $c_1 = 0 = c_2$ then which of the following is true for $\{\vec{v}_1, \vec{v}_2\}$?

Answer (Please select your correct option)

 It is a linearly independent set.

ans

Correct answer solved by Hadi
Email : usmanraj20@gmail.com
Cell no: 03228043306

 It is a linearly dependent set. The system of equations is inconsistent. The system of equations is non- homogeneous.

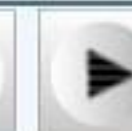
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Question No : 26 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is true for the linear operator L defined by $L\left(\begin{bmatrix} a_1 \\ a_2 \end{bmatrix}\right) = \begin{bmatrix} a_1 \\ -a_2 \end{bmatrix}$?

Answer (Please select your correct option)

It is an enlargement by a negative scale factor.

It is a shear.

It is a reflection about X -axis.

It is a reflection about Y -axis.

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ans

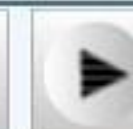
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Question No : 27 of 52

Marks: 1 (Budgeted Time 1 Min)

If $A = \begin{bmatrix} 4 & -1 \\ 5 & 3 \end{bmatrix}$, then which of the following is the value of $\det(A)$?

Answer (Please select your correct option)

 7 -17 17 11

ans

$$4(3) - (-1)(5) = 17$$

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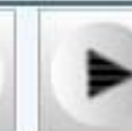
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Question No : 28 of 52

Marks: 1 (Budgeted Time 1 Min)

If the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 2 \\ 0 & 0 & 2 \end{bmatrix}$, then which of the following is true about it ?

Answer (Please select your correct option)

 Its determinant is 0 . Its determinant is 1 . Its determinant is 2 . Its determinant is 4 .

ans

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Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

If the matrix $A = \begin{bmatrix} 1 & 5 & 4 \\ 0 & 1 & 7 \\ 0 & 0 & 0 \end{bmatrix}$, then which of the following is true about it ?

Answer (Please select your correct option)

 Its determinant is 0 .

ans

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 Its determinant is 2 . Its determinant is 4 . Its determinant is 6 .

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Question No : 30 of 52

Marks: 1 (Budgeted Time 1 Min)

If the determinant of the matrix $A = \begin{bmatrix} 4 & 3 & 5 \\ 3 & 1 & 1 \\ 5 & 7 & 7 \end{bmatrix}$ is 32 and the matrix B is obtained by multiplying any row of A with an integer value 4, then which of the following is true about the matrix B ?

Answer (Please select your correct option)

- Its determinant is 18 .
- Its determinant is - 32 .
- Its determinant is 128 .
- The information is not sufficient to calculate the determinant .

i think

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Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

If a set W be a subspace of a vector space V , then which of the following is NOT true for it ?

Answer (Please select your correct option)

 It must be closed under the scalar multiplication . It may or may not be closed under the operation of addition . It must have an additive inverse of each element . It must be commutative under the operation of addition .

ans

Correct answer solved by Hadi
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Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

Let a set S is a basis of a vector space V , then which of the following is NOT true about it ?

Answer (Please select your correct option)

 It spans V . It is linearly independent. It is linearly dependent. Each element of S belongs to V .

ans

Correct answer solved by Hadi
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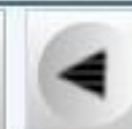
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Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

If a set $S = \left\{ \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} \right\}$ is a basis for R^3 and $[\mathbf{v}]_S^r = \begin{bmatrix} 7 \\ 5 \\ 3 \end{bmatrix}$, then which of the following is the most appropriate option ?

Answer (Please select your correct option)

$\mathbf{v}^r = (1, 0, 0)^t \in R^3$

$\mathbf{v}^r = (2, 3, 4)^t \in R^3$

$\mathbf{v}^r = (7, 5, 3)^t \in R^3$

$\mathbf{v}^r = (2, 7, 4)^t \in R^3$

ans

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Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

If P is a polynomial of order ' n ', then which of the following is true for the $\dim(P_n)$?

Answer (Please select your correct option)

 $\dim(P_n) = n - 1$ $\dim(P_n) = n$ $\dim(P_n) = n + 1$ $\dim(P_n) = 1$

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Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

Let $A = \begin{bmatrix} 1 & 3 & 2 & -1 & 5 \\ 2 & 2 & 1 & 1 & 4 \\ -1 & 4 & 1 & 2 & -3 \\ 3 & 5 & 3 & -4 & 2 \end{bmatrix}$, the row space of A is the subspace of R^5 . Identify the set by which the row space of A is spanned?

Answer (Please select your correct option)

 $\{(1, 2, -1, 3), (2, 4, -2, 6), (2, 1, 1, 3), (-1, 1, 2, -4), (6, 3, 3, 9)\}$ $\{(1, 3, 2, -1, 5), (2, 6, 4, -2, 10), (-1, 4, 1, 2, -3), (-3, 12, 3, 6, -9)\}$ $\{(1, 3, 2, -1, 5), (2, 2, 1, 1, 4), (-1, 4, 1, 2, -3), (3, 5, 3, -4, 2)\}$ $\{(1, 2, -1, 3), (3, 2, 4, 5), (2, 1, 1, 3), (-1, 1, 2, -4), (5, 4, -3, 2)\}$

ans

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Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

If $A = \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$ and $\vec{x} \in \text{Row}(A)$, then which of the following is the most appropriate option ?

Answer (Please select your correct option)

$\vec{x} = c_1(1, 3) + c_2(2, 4)$

$\vec{x} = c_1(1, 2) + c_2(3, 4)$

ans

$\vec{x} = c_1(1, 4) + c_2(3, 2)$

$\vec{x} = c_1(2, 3) + c_2(4, 1)$

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Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

Consider the bases for R^2 given by $B = \{ \overset{\uparrow}{b}_1, \overset{\uparrow}{b}_2 \}$ and $C = \{ \overset{\uparrow}{c}_1, \overset{\uparrow}{c}_2 \}$; where $\overset{\uparrow}{b}_1 = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$, $\overset{\uparrow}{b}_2 = \begin{bmatrix} -1 \\ 1 \end{bmatrix}$, $\overset{\uparrow}{c}_1 = \begin{bmatrix} -6 \\ 4 \end{bmatrix}$, $\overset{\uparrow}{c}_2 = \begin{bmatrix} -4 \\ 7 \end{bmatrix}$; then which of the following is the change-of-coordinates matrix from C to B ?

Answer (Please select your correct option)

$P_{B \leftarrow C} = \begin{bmatrix} -2 & 3 \\ 4 & 7 \end{bmatrix}$

$P_{B \leftarrow C} = \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$

$P_{B \leftarrow C} = \begin{bmatrix} -6 & -4 \\ 4 & 7 \end{bmatrix}$

$P_{B \leftarrow C} = \begin{bmatrix} -10 & -11 \\ 4 & 7 \end{bmatrix}$

ans

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Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

If $B = \{ \hat{b}_1, \hat{b}_2, \dots, \hat{b}_n \}$ and E is the standard basis $\{ e_1, e_2, \dots, e_n \}$ in R^n ; then which of the following is the value of $\left[\hat{b}_1 \right]_E$?

Answer (Please select your correct option)

 E $\hat{b}_1 + E$ \hat{b}_1 \hat{b}_2

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Question No : 39 of 52

Marks: 1 (Budgeted Time 1 Min)

If $\{y_k\} = \{\dots, 1, 0.7, 0, -0.7, -1, -0.7, 0, 0.7, 1, 0.7, 0, \dots\}$ and $0.35y_{k+2} + 0.6y_{k+1} + 0.42y_k = z_k$;

 \uparrow $k = 0$

then which of the following is the value of z_0 ?

Answer (Please select your correct option)

 0.840 0.049 -0.770 -1.139

Correct answer solved by Hadi
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ans

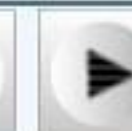
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