

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

Answer (Please select your correct option)

VuAnswers.com

True



correct

False



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

Answer (Please select your correct option)

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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

correct

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.

correct

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How many terms are there in the algebraic expression $8x^2 + \sqrt{9}x \times 25x^3$?

Answer (Please select your correct option)

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4



3



2



correct

1



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If two matrices are added, then which of the following should be true for them?

Answer (Please select your correct option)

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Both must have same order.

correct

Both must have different order.

Both must be rectangular.

Both must be square.

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If a matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \\ 6 & 1 & 1 \end{bmatrix}$, then which of the following is true for A ?

Answer (Please select your correct option)

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It is a rectangular matrix.

It is a row matrix.

It is a singular matrix.

correct

It is a scalar matrix.

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

Answer (Please select your correct option)

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It is an invertible matrix.

It is a singular matrix.

It is a non-invertible matrix.

correct

It is a rectangular matrix.

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If \vec{v}_1, \vec{v}_2 and \vec{v}_3 are in \mathbb{R}^m then which of the following is equivalent to $[\vec{v}_1 \ \vec{v}_2 \ \vec{v}_3] \begin{bmatrix} 2 \\ -7 \\ 5 \end{bmatrix}$?

Answer (Please select your correct option)

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$2\vec{v}_1 - 7\vec{v}_2 + 5\vec{v}_3$

correct

$5\vec{v}_1 - 7\vec{v}_2 + 2\vec{v}_3$

$5\vec{v}_1 + 2\vec{v}_2 - 7\vec{v}_3$

$2\vec{v}_1 + 5\vec{v}_2 - 7\vec{v}_3$

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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

$\lambda = -1$

$\lambda = 0$

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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)

Answer (Please select your correct option)

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is an orthogonal

correct

may be an orthogonal

may not be an orthogonal

is not an orthogonal

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Which statement about the General Least Square Method is true?

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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.

correct

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If two rows are orthogonal, they are _____.

Answer (Please select your correct option)

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linearly independent

correct

linearly dependent

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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

origin 'O' is called the saddle point because one eigenvalue is greater than 1 in magnitude and one is less than '1' in magnitude.

Answer (Please select your correct option)

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Saddle point

correct

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

Answer (Please select your correct option)

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Saddle point

correct

Repellor

Attractor

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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

$\text{proj}_y w$

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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}

correct

normal equations for A

normal equations for b

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

not sure

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Answer (Please select your correct option)

orthogonal

orthonormal

correct

perpendicular

parallel

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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?

Answer (Please select your correct option)

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

Answer (Please select your correct option)

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Unique solution

Infinitely many solutions

No solution

correct

None of these

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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



False



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