$7x$ is an algebraic term in which 7 is a _____ and x is a _____ .

Answer (Please select your correct option)

○ term, expression

○ coefficient, variable

○ variable, coefficient

○ numerical, alphabet

$9x^2 + 3x + 4$ is _____.

Answer (Please select your correct option)

○ an equation

○ a term

○ an algebraic expression

○ quadratic equation

Which of the following is the coefficient matrix for the system

$$x_1 - 2x_2 + x_3 = 0$$
$$2x_2 - 7x_3 = 8 \ ?$$
$$-4x_1 + 3x_2 + 9x_3 = -6$$

Answer (Please select your correct option)

○ $\begin{bmatrix} 1 & -2 & 1 \\ 0 & 2 & -7 \end{bmatrix}$

○ $\begin{bmatrix} 1 & -2 & 0 \\ 0 & 2 & 8 \end{bmatrix}$

○ $\begin{bmatrix} 1 & 1 & 0 \\ 0 & -7 & 8 \end{bmatrix}$

○ $\begin{bmatrix} 1 & 0 & -4 \\ -2 & 2 & 3 \end{bmatrix}$

Two simultaneous linear equations in two variables have no solution if their corresponding lines are _____.

Answer (Please select your correct option)

○ parallel and distinct

○ intersecting

○ coincident

○ perpendicular

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 $(0, 6, 5)$.

If A is an $m \times n$ matrix and $Ax = b$ has a solution then which of the following is true?

Answer (Please select your correct option)

○　A has a pivot position in every row.

○　$\det(A) = 0$.

○　Echelon form of A has at least one row of zeros.

○　$b \notin Span\{a_1, a_2, \ldots, a_n\}$.

If a homogeneous system $Ax = 0$ has a trivial solution, then which of the following is (are) the value(s) of the vector x ?

Answer (Please select your correct option)

○ −1

○ 0

○ 1

○ 2

If $T: R^n \to R^m$ be a linear transformation defined by $T(\vec{x}) = A\vec{x}$ (for all $\vec{x} \in R^n$), then which of the following is true for A ?

Answer (Please select your correct option)

○ A is a singular matrix.

○ A is a square matrix.

○ A is a unique matrix.

○ A is not a unique matrix.

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 $Y - axis$.

If T be a transformation , then which of the following is true for its linearity ?

Answer (Please select your correct option)

○ $T(c\,\dot{u}\ \text{g}\,d\,\dot{v}) = c\ T(\dot{u})\ \text{g}\,d\ T(\dot{v})$;   where 'c' and 'd' are scalars

○ $T(c\,\dot{u} + d\,\dot{v}) = c\ T(\dot{u}) + d\ T(\dot{v})$;   where 'c' and 'd' are scalars

○ $T(c\,\dot{u} \times d\,\dot{v}) = c\ T(\dot{u}) \times d\ T(\dot{v})$;   where 'c' and 'd' are scalars

○ $T(c\,\dot{u} + d\,\dot{v}) = d\ T(\dot{u}) + c\ T(\dot{v})$;   where 'c' and 'd' are scalars

If $A = \begin{bmatrix} 2 & 1 \\ 4 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1+1 & 2-1 \\ 2+2 & 4-1 \end{bmatrix}$, then which of the following is true for A and B ?

Answer (Please select your correct option)

○ A and B are equal matrices.

○ A is the transpose of B .

○ B is the transpose of A .

○ B is the multiplicative inverse of A .

What is the maximum possible number of pivots in a 6×6 matrix ?

Answer (Please select your correct option)

○ 2

○ 4

○ 6

○ 0

If $A = \begin{bmatrix} P \\ Q \end{bmatrix}$ and $B = \begin{bmatrix} R & S \end{bmatrix}$ (where P , Q , R and S are square sub-matrices of same size) , then which of the following is possible ?

Answer (Please select your correct option)

○ The product AB is defined but BA is not defined.

○ The product AB is not defined but BA is defined.

○ The product AB and BA both are not defined.

○ The product AB and BA both are defined.

Which of the following is true for the matrix $A = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ O & A_{22} & A_{23} \\ O & O & A_{33} \end{bmatrix}$; where A_{11} , A_{22} and A_{33} are square sub-matrices , and 'O' is a zero sub-matrix ?

Answer (Please select your correct option)

○ It is a block upper triangular matrix.

○ It is a block lower triangular matrix.

○ It is diagonal-constant matrix.

○ It is a Null matrix.

If a matrix A is factorized into lower and upper triangular matrices , then which of the following is true for the matrix ?

Answer (Please select your correct option)

○ It is called an LU -procedure.

○ It is called an LU -decomposition.

○ It is called an LU -matrices.

○ It is called an LU -algorithm.

If $A = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$, then which of the following is the minor of entry a_{21} ?

Answer (Please select your correct option)

○   2

○   3

○   4

○   5

Which of the following is true for the coefficient matrix in the Cramer's Rule ?

Answer (Please select your correct option)

○ It must be invertible .

○ It must be singular .

○ It may or may not be invertible .

○ It may or may not be non - singular .

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 .

If the set $V = \{0, 1, 2, 3\}$, then which of the following is true for it ?

option 3 or 4

Answer (Please select your correct option)

○ It is closed under operation of addition .

○ It is a vector space .

○ It is commutative under operation of addition .

○ It has an additive inverse of each element .

If $c_1 \vec{v}_1 + c_2 \vec{v}_2 + c_3 \vec{v}_3 + \ldots + c_p \vec{v}_p = 0$, and vectors $\vec{v}_1, \vec{v}_2, \vec{v}_3, \ldots, \vec{v}_p$ all are linearly independent then which of the following is true ?

if dependent
then option 2

Answer (Please select your correct option)

○ $c_1 = c_2 = c_3 = \ldots = c_p = 0$

○ $c_1 \neq c_2 \neq c_3 \neq \ldots \neq c_p \neq 0$

○ $c_1 \neq c_2 = c_3 = \ldots = c_p \neq 0$

○ $c_1 \neq c_2 = c_3 = \ldots = c_p = 0$

If a matrix A is decomposed into $L = \begin{bmatrix} 2 & 0 \\ 3 & -1 \end{bmatrix}$ and $U = \begin{bmatrix} 1 & -7 \\ 0 & 1 \end{bmatrix}$ by LU factorization , then find A.

Answer (Please click here to Add Answer)

Made By: Waqar Siddhu

If $A = \begin{bmatrix} 4 & 2 & 3 \\ 1 & 3 & 2 \end{bmatrix}$, then determine whether $\overset{r}{u} = \begin{bmatrix} 1 \\ 4 \\ 5 \end{bmatrix}$ is in $Nul\ A$ or not ?

Answer (Please click here to Add Answer)

Normal   Arial   12   B I U

Let W be the set of all vectors of the form $\begin{bmatrix} 3a \\ 2a \\ a \end{bmatrix}$. Find a vector $\vec{v}$ in R^3 such that $W = Span\{\vec{v}\}$.

Answer (Please click here to Add Answer)

Construct partitions of the following matrix into three 2×2 blocks :

$$B = \begin{bmatrix} 1 & 2 & 3 & 4 & 1 & 3 \\ 3 & 4 & 5 & 6 & 3 & 4 \end{bmatrix}$$

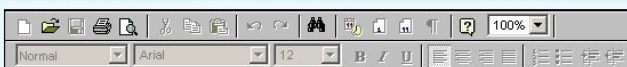**Answer (Please click here to Add Answer)**
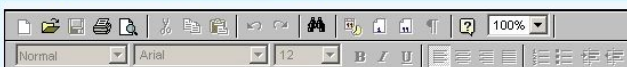
Show that the coefficient matrix of the following linear system is strictly diagonally dominant. Also calculate the second iteration using Gauss – Seidel method if the first iteration is
$(x_1^{(1)}, x_2^{(1)}, x_3^{(1)}) = (1.3, 1.04, 0.936)$.

$$10x_1 + 2x_2 + x_3 = 13$$
$$2x_1 + 10x_2 + x_3 = 13$$
$$2x_1 + x_2 + 10x_3 = 13$$

Answer (Please click here to Add Answer)

Show that $\begin{vmatrix} a+h & a-h & d \\ b+k & b-k & e \\ c+l & c-l & f \end{vmatrix} = 2\begin{vmatrix} a & a-h & d \\ b & b-k & e \\ c & c-l & f \end{vmatrix}$.

Answer (Please click here to Add Answer)