

Question No : 1 of 26

Marks: 1 (Budgeted Time 1 Min)

$7x$ 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

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 2 of 26

Marks: 1 (Budgeted Time 1 Min)

Which of the following is the pivot element in the second row of the matrix?

$$\begin{pmatrix} 1 & 2 & 3 & 4 & 8 \\ 0 & 0 & -3 & 5 & 1 \\ 0 & 0 & 0 & 1 & 2 \\ 0 & 0 & 0 & 0 & -3 \end{pmatrix}$$

Answer (Please select your correct option)

☐ 0

☐ 1

☐ -3

☐ 5

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 3 of 26

Marks: 1 (Budgeted Time 1 Min)

Which of the following is true for the matrix $\begin{pmatrix} 1 & 3 & 2 \\ 0 & 1 & -1 \\ 0 & 0 & 1 \end{pmatrix}$?

Answer (Please select your correct option)

☐ It is an identity matrix.

☐ It is in reduced echelon form.

☐ It is in echelon form.

☐ It is a rectangular matrix.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 4 of 26

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 $(0, 6, 5)$.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 5 of 26

Marks: 1 (Budgeted Time 1 Min)

If $\vec{b} = c_1 \vec{u}_1 + c_2 \vec{u}_2$ and $\vec{a} = d_1 \vec{u}_1 + d_2 \vec{u}_2$ where c_1, c_2, d_1 and d_2 are scalars, then which of the following options is correct?

Answer (Please select your correct option)

☐ Only $\vec{b} \in \text{Span}(\vec{u}_1, \vec{u}_2)$.

☐ Only $\vec{a} \in \text{Span}(\vec{u}_1, \vec{u}_2)$.

☐ Both $\vec{a}, \vec{b} \in \text{Span}(\vec{u}_1, \vec{u}_2)$.

☐ Both $\vec{a}, \vec{b} \notin \text{Span}(\vec{u}_1, \vec{u}_2)$.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 6 of 26

Marks: 1 (Budgeted Time 1 Min)

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

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 7 of 26

Marks: 1 (Budgeted Time 1 Min)

If a homogeneous system $AX = 0$ has non-trivial solution, then which of the following is true for the system?

Answer (Please select your correct option)

☐ The system has at least no free variable.

☐ The system has at least one free variable.

☐ The system has at least two free variables.

☐ The system has at least three free variables.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 8 of 26

Marks: 1 (Budgeted Time 1 Min)

If $x = \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} -1+6x_3 \\ 3 \\ x_3 \end{bmatrix} = \begin{bmatrix} -1 \\ 3 \\ 0 \end{bmatrix} + x_3 \begin{bmatrix} 6 \\ 0 \\ 1 \end{bmatrix}$ be the general solution of $Ax = b$, then which of the following is parametric equation for the given solution?

Answer (Please select your correct option)

☐ $p = sx + tu + v$

☐ $x = p + tv$

Correct Answer Solved By Hadi
usmanraaj20@gmail.com
03228043306

☐ $v = p + tx$

☐ $tx = p + v$

Made By: Waqar Siddhu

Question No : 9 of 26

Marks: 1 (Budgeted Time 1 Min)

If the equation $T(\vec{x}) = 0$ has only the trivial solution, then which of the following is true for the linear transformation $T: \mathbb{R}^n \rightarrow \mathbb{R}^m$?

Answer (Please select your correct option)

- ☐ T is one-to-one.
- ☐ T is onto.
- ☐ T is a rotation.
- ☐ T is a reflection.

Correct Answer Solved By Hadi
usmanraja20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 10 of 26

Marks: 1 (Budgeted Time 1 Min)

If linear transformation $T : R^n \rightarrow R^m$ is transformed into a matrix A , then which of the following is the order of A ?

Answer (Please select your correct option)

☐ $n \times m$

☐ $m \times m$

☐ $m \times n$

☐ $n \times n$

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 11 of 26

Marks: 1 (Budgeted Time 1 Min)

If $A = A^t$ (where A is a square matrix) , then which of the following is the most appropriate option for A ?

Answer (Please select your correct option)

☐ A is an invertible matrix.

☐ A is a singular matrix.

☐ A is a symmetric matrix.

☐ A is a scalar matrix.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 12 of 26

Marks: 1 (Budgeted Time 1 Min)

If A is an invertible matrix , then which of the following is true ?

Answer (Please select your correct option)

☐

$$(A^{-1})^{-1} = A$$

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

☐

$$(A^{-1})^{-1} = \frac{1}{A}$$

☐

$$(A^{-1})^{-1} = A^{-1}$$

☐

$$(A^{-1})^{-1} = \det(A)$$

Made By: Waqar Siddhu

Question No : 13 of 26

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

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 14 of 26

Marks: 1 (Budgeted Time 1 Min)

If a system of equations is solved using the Jacobi's method , then which of the following is NOT true about the matrix M that is derived from the coefficient matrix ?

Answer (Please select your correct option)

☐

All of its entries below the diagonal must be zero .

☐

All of its entries above the diagonal must be zero .

☐

It may or may not be invertible .

☐

It is a non-singular matrix .

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 15 of 26

Marks: 1 (Budgeted Time 1 Min)

If the matrix $A = \begin{bmatrix} 5 & 4 \\ 3 & 3 \end{bmatrix}$, then which of the following is the most suitable option for it ?

Answer (Please select your correct option)

☐

It is not strictly diagonally dominant.

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

☐

It is strictly diagonally dominant.

☐

It is not diagonally dominant.

☐

It is diagonally dominant.

Made By: Waqar Siddhu

Question No : 16 of 26

Marks: 1 (Budgeted Time 1 Min)

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

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 17 of 26

Marks: 1 (Budgeted Time 1 Min)

If $A = \begin{bmatrix} 4 & 5 \\ 6 & 7 \end{bmatrix}$, then which of the following is the value of C_{21} ?

Answer (Please select your correct option)

☐ 5

☐ -5

☐ 6

☐ -6

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 18 of 26

Marks: 1 (Budgeted Time 1 Min)

If the determinant of the matrix $A = \begin{bmatrix} 2 & 3 & 4 \\ 1 & 2 & 2 \\ 3 & 4 & 5 \end{bmatrix}$ is -1 and the matrix B is obtained by adding 2 times of the second row in the first row of the matrix A , then which of the following is true about the matrix B ?

Answer (Please select your correct option)

☐

Its determinant is -1 .

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

☐

Its determinant is 1 .

☐

Its determinant can not be evaluated .

☐

The information is not sufficient to calculate the determinant .

Made By: Waqar Siddhu

Question No : 19 of 26

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 .

Correct Answer Solved By Hadi
usmanraj20@gmail.com
03228043306

Made By: Waqar Siddhu

Question No : 20 of 26

Marks: 1 (Budgeted Time 1 Min)

If a set $S = \{ v_1 = (1, 2), v_2 = (4, 8) \}$, then which of the following is the most appropriate option ?

Answer (Please select your correct option)

☐

It is a basis of R^2 .

☐

It is linearly independent.

☐

It spans R^2 .

☐

It is linearly dependent.

Correct Answer Solved By Hadi
usmanraja20@gmail.com
03228043306

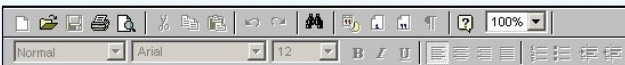
Made By: Waqar Siddhu

Question No : 21 of 26

Marks: 2 (Budgeted Time 4 Min)

If $A = \begin{bmatrix} 1 & 2 \\ 3 & 7 \end{bmatrix}$ and $A^{-1} = \begin{bmatrix} 7 & -2 \\ -3 & 1 \end{bmatrix}$, then calculate the inverse of A^t (if exists).

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



Made By: Waqar Siddhu

Marks: 2 (Budgeted Time 4 Min)

Evaluate the determinant	$\begin{vmatrix} 2 & 4 & 8 & 16 \\ 0 & 3 & 6 & 12 \\ 0 & 0 & -2 & -4 \\ 0 & 0 & 0 & -3 \end{vmatrix}$
--------------------------	---

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

Made By: Waqar Siddhu

Question No : 23 of 26

Marks: 3 (Budgeted Time 6 Min)

If $A = \begin{bmatrix} 1 & 2 \\ 3 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} 4 & 5 \\ 3 & 4 \end{bmatrix}$, then calculate the inverse of AB (if exists); where $A^{-1} = \begin{bmatrix} 7 & -2 \\ -3 & 1 \end{bmatrix}$ and $B^{-1} = \begin{bmatrix} 4 & -5 \\ -3 & 4 \end{bmatrix}$.

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



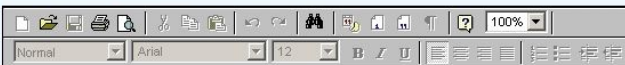
Made By: Waqar Siddhu

Question No : 24 of 26

Marks: 3 (Budgeted Time 6 Min)

Let S be a parallelogram determined by the vectors $\vec{b}_1 = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$, $\vec{b}_2 = \begin{bmatrix} -2 \\ 5 \end{bmatrix}$ and $A_1 = \begin{bmatrix} 6 & -2 \\ -3 & 2 \end{bmatrix}$. Compute the area of the image of S under the mapping $\vec{x} \rightarrow A_1 \vec{x}$.

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



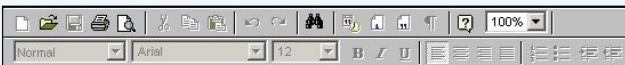
Made By: Waqar Siddhu

Question No : 25 of 26

Marks: 5 (Budgeted Time 10 Min)

Find an LU - decomposition of the matrix $A = \begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix}$.

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



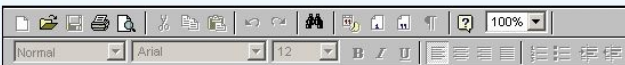
Made By: Waqar Siddhu

Question No : 26 of 26

Marks: 5 (Budgeted Time 10 Min)

If $A = \begin{bmatrix} 4 & 1 & 6 \\ -7 & 5 & -3 \\ 9 & -3 & 3 \end{bmatrix}$, then find the minors of first row and determinant of A using these minors .

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



Made By: Waqar Siddhu