

MTH603
Grand Quiz 📖
Solved by
Arsl Shani



MC190403965: MUHAMMAD TAYYAB MUNIR

Time Left 88 sec(s)

MT34603:Grand Quiz

Quiz Start Time: 11:09 AM, 07 July 2020

Question 13 of 30 (Start time: 11:20:52 AM, 07 July 2020)

Total Marks: 1

Central difference method seems to be giving a better approximation, however it requires more computations.

Select the correct option

- | | |
|-----------------------|-------|
| ☐ | TRUE |
| ☐ | FALSE |

[Click to View Answer & Move to Next Question](#)

Question # 12 of 30 (Start time: 11:19:53 AM, 07 July 2020)

While using Gaussian Elimination method, which of the following augmented matrix is in upper triangular form?

Select the correct option

☐	$[A I] = \begin{bmatrix} 1 & \frac{3}{4} & \frac{1}{4} & 0 & \frac{1}{4} & 0 \\ 0 & \frac{11}{4} & \frac{15}{4} & 0 & -\frac{3}{4} & 1 \\ 0 & 1 & 5 & 1 & 1 & 0 \end{bmatrix}$
☐	$[A I] = \begin{bmatrix} 1 & \frac{3}{4} & -\frac{1}{4} & 0 & \frac{1}{4} & 0 \\ 0 & 1 & \frac{15}{11} & 0 & -\frac{3}{11} & \frac{4}{11} \\ 0 & \frac{1}{4} & \frac{5}{4} & 1 & -\frac{1}{4} & 0 \end{bmatrix}$
☐	$[A I] = \begin{bmatrix} 1 & \frac{3}{4} & -\frac{1}{4} & 0 & \frac{1}{4} & 0 \\ 0 & 1 & \frac{15}{11} & 0 & -\frac{3}{11} & \frac{4}{11} \\ 0 & 1 & 10 & 1 & 2 & 1 \end{bmatrix}$
☒	$[A I] = \begin{bmatrix} 1 & \frac{3}{4} & \frac{1}{4} & 0 & \frac{1}{4} & 0 \\ 0 & 1 & \frac{15}{11} & 0 & \frac{3}{11} & \frac{4}{11} \\ 0 & 0 & 1 & 11 & 1 & 1 \end{bmatrix}$

Next

12:23 AM, 07 July 2020)

$$x + 2y + 2z = 3$$

$$x + 3y + 3z = 2$$

$$x + y + 5z = 2$$

$$x = 3 - 2y - 2z$$

$$y = 2 - x - 3z$$

$$z = 2 - y - x$$

$$x = 3 - 2y - 2z$$

$$y = \frac{2}{3} - \frac{x}{3} - z$$

$$z = \frac{2}{3} - \frac{x}{3} - \frac{y}{3}$$

$$x = 1 - \frac{2}{3}y - \frac{2}{3}z$$

$$y = 1 - \frac{3}{2}x - \frac{3}{2}z$$

$$z = 1 - \frac{y}{3} - \frac{x}{3}$$

$$x = \frac{3}{2} - y - z$$

$$y = 2 - \frac{x}{3} - z$$

$$z = \frac{2}{3} - \frac{x}{3} - \frac{y}{3}$$

Click to Save Answer



MC190403965: MUHAMMAD TAYYAB MUNIR

Time Left 89 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 11:09 AM, 07 July 2020

Question 11 of 30 (Start time: 11:19:25 AM, 07 July 2020)

Total Marks: 1

The number system that has a base 8 is called...system.

Select the correct option

☐	Decimal
☒	Octal
☐	Binary
☐	Hexadecimal

Click to Show Answer & Move to Next Question

MTH603:Grand Quiz

Question # 11 of 30 (Start time: 12:09:16 AM, 07 July 2020)

Numerical solution of $2/3$ up to four decimal places is _____.

Select the correct option

☐	0.667
☐	0.6666
☒	0.6667
☐	0.66667



Type here to search



Question # 9 of 30 (Start time: 12:07:33 AM, 07 July 2020)

In _____ method, a system is reduced to an equivalent diagonal form using elementary transformations.

Select the correct option

- | | |
|-----------------------|----------------------|
| ☐ | Jacobi's |
| ☐ | Gauss-Seidel |
| ☐ | Relaxation |
| ☐ | Gaussian elimination |



Type here to search



BC180200304: HAFIZ MUHAMMAD HASSNAIN

MTH603:Grand Quiz

Question # 1 of 30 (Start time: 12:01:25 AM, 07 July 2020)

If one root of the equation is $3-7i$, then the other root will be

Select the correct option

- | | |
|----------------------------------|---------|
| ☒ | $-3-7i$ |
| ☐ | $-3+7i$ |
| ☐ | $3-7i$ |
| ☐ | $3+7i$ |



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While solving the system of linear equations:
 $x-y=2$, $-x+y=3$ by Jacobi's method, if $(0,0)$ be its first approximate solution, then which of the following is second approximate solution?

Select the correct option

- ☒ (2,3)
- ☐ (2,0)
- ☐ (0,3)
- ☐ Second approximate solution doesn't exist as system is singular



Type here to search



MTH603: Grand Quiz

Question # 18 of 30 (Start time: 12:16:49 AM, 07 July 2020)

Sparse matrix is a matrix with ____

Select the correct option

- | | |
|----------------------------------|------------------------|
| ☐ | Some elements are zero |
| ☒ | Many elements are zero |
| ☐ | Some elements are one |
| ☐ | Many elements are one |



Type here to search





30 (Start time: 11:18:23 AM, 07 July 2020)

$$x + 2y + 2z = 3$$

$$x + 3y + 3z = 2$$

$$x + y + 5z = 2$$

4 option

$$x = 3 - 2y - 2z$$

$$y = 2 - x - 3z$$

$$z = 2 - y - x$$



$$x = 3 - 2y - 2z$$

$$y = \frac{2}{3} - \frac{x}{3} - z$$

$$z = \frac{2}{3} - \frac{x}{3} - \frac{y}{3}$$

$$x = 1 - \frac{2}{3}y - \frac{2}{3}z$$

$$y = 1 - \frac{3}{2}x - \frac{3}{2}z$$

$$z = 1 - \frac{y}{3} - \frac{x}{3}$$

$$x = \frac{3}{2} - y - z$$

$$y = 2 - \frac{x}{3} - z$$

$$z = \frac{2}{3} - \frac{x}{3} - \frac{y}{3}$$

[Click to Save Answer](#)



MC190403965: MUHAMMAD TAYYAB MUNIR

Time Left 89 sec(s)

MT3603:Grand Quiz

Quiz Start Time: 11:09 AM, 07 July 2020

Question 7 of 30 (Start time: 11:15:48 AM, 07 July 2020)

Total Marks: 1

For the system; $2x+3y = 1$, $3x+2y = -4$, if the iterative solution is $(0,0)$ and ' $dx_i = 2$ ' is the increment in ' y ' then which of the following will be taken as next iterative solution?

Select the correct option

- | | |
|-----------------------|--------|
| ☐ | (2,0) |
| ☐ | (0,3) |
| ☐ | (0,2) |
| ☐ | (1,-4) |
- 

Click to Show Answer & Move to Next Question



MC190403965: MUHAMMAD TAYYAB MUNIR

Time Left

89

sec(s)

MT1603:Grand Quiz

Quiz Start Time: 11:09 AM, 07 July 2020

Question 1 of 30 (Start time: 11:09:04 AM, 07 July 2020)

Total Marks: 1

Differences methods are iterative methods.

Select the correct option

- | | |
|-----------------------|-------|
| ☐ | TRUE |
| ☐ | FALSE |

[Click to View Answer & Move to Next Question](#)

Question # 30 of 30 (Start time: 11:07:02 AM, 07 July 2020)

If the Relaxation method is applied on the system; $2x+3y = 1$, $3x+2y = -4$, then largest residual in 1st iteration will reduce to ———.

Select the correct option

- ☒ zero
- ☐ 4
- ☐ -1
- ☐ -1

Question # 28 of 30 (Start time: 11:04:55 AM, 07 July 2020)

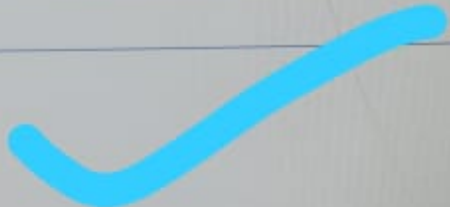
Direct methods can be more rapid than iterative algorithms.

Select the correct option

TRUE



FALSE



Question # 27 of 30 (Start time: 11:04:06 AM, 07 July 2020)

The Jacobi's method is a method of solving a matrix equation on a matrix that has no zeros along its _____

Select the correct option

☒ main diagonal

☐ last column

☐ last row

☐ first row

Question # 30 of 30 (Start time: 11:01:38 AM, 07 July 2020)

Total

While using Jacobi method for the matrix

$$A = \begin{bmatrix} 1 & 1/4 & 1/2 \\ 1/4 & 1/3 & 1/4 \\ \dots & \dots & \dots \end{bmatrix}$$

[Reload Math Equ](#)

Select the correct option

☐

$$\tan 2\theta = \frac{2a_{23}}{a_{22} - a_{33}}$$

☐

$$\tan 2\theta = \frac{2a_{13}}{a_{33} - a_{11}}$$

☒

$$\tan 2\theta = \frac{2a_{13}}{a_{11} - a_{33}}$$

☐

$$\tan 2\theta = \frac{2a_{12}}{a_{11} - a_{22}}$$

Click in Given Answer Field to Mark the Question

Question # 23 of 30 (Start time: 10:59:09 AM, 07 July 2020)

Quiz Start Time: 10:33 AM, 07 July 2020

The eigenvectors of a square matrix are the non-zero vectors that, after being multiplied by the matrix, remain to the original vector.

Total Marks: 1

Select the correct option

- ☐ Perpendicular
- ☒ Parallel
- ☐ Diagonal
- ☐ None of the given choices

Question # 29 of 30 (Start time: 11:00:11 AM, 07 July 2020)

Full pivoting, in fact, is morethan the partial pivoting.

Select the correct option

☐ Easiest

☒ Complicated

Click to Save Answer & Move

Question # 28 of 30 (Start time: 10:59:27 AM, 07 July 2020)

If one root of the equation is $-3-7i$, then the other root will be

Select the correct option

- ☐ $-3-7i$
- ☒ $-3+7i$
- ☐ $3-7i$
- ☐ $3+7i$

Click to Save Answer

MTH603: Grand Quiz

Time Left

Quiz Start Time: 10:19 AM, 07

Question # 28 of 30 (Start time: 10:58:44 AM, 07 July 2020)

Total

By using determinants, we can easily check that the solution of the given system of linear equation _____ and it is _____.

Select the correct option

☒

exists, unique

☐

exists, consistent

☐

trivial, unique

☐

nontrivial, inconsistent

Valid-In Save Actions System for a new question

MC190405630: MUBEEN ASGHAR

MTH603: Grand Quiz

Question # 30 of 30 (Start time: 10:54:35 AM, 07 July 2020)

Central Difference method is the finite difference method.

Select the correct option

☐	TRUE
☐	FALSE



Type here to search



Question # 27 of 30 (Start time: 10:57:17 AM, 07 July 2020)

Which of the following system of equation is diagonally dominant?

Select the correct option

Reload Mat

☐

$$\begin{aligned}2x + 13y + 5z &= 7 \\8x + y - z &= 5 \\x + 2y + 9z &= 3\end{aligned}$$

☐

$$\begin{aligned}8x + y - z &= 5 \\2x + 13y + 5z &= 7 \\x + 2y + 9z &= 3\end{aligned}$$

☐

$$\begin{aligned}x + 2y + 9z &= 3 \\8x + y - z &= 5 \\2x + 13y + 5z &= 7\end{aligned}$$

☐

$$\begin{aligned}8x + y - z &= 5 \\x + 2y + 9z &= 3 \\2x + 13y + 5z &= 7\end{aligned}$$

Click to Save Answer / Click to Next Question

Question # 20 of 30 (Start time: 10:55:55 AM, 07 July 2020)

There are ... types of error.

Select the correct option

☐ 2

☒ 3

☐ 4

☐ 5

Question # 22 of 30 (Start time: 10:49:59 AM, 07 July 2020)

Central Difference method is the finite difference method.

Select the correct option

☒ TRUE

☐ FALSE

Question 1 of 30 (Start time: 10:55:50 AM, 07 July 2020)

Total

While using Jacobi method for the matrix

$$A = \begin{bmatrix} 1 & 2 & \sqrt{2} \\ 2 & 3 & \sqrt{2} \\ \sqrt{2} & \sqrt{2} & 3 \end{bmatrix}$$

Select the correct option

Reload Math Equati



$$S_1 = \begin{bmatrix} \cos 0.5535 & 0 & \sin 0.5535 \\ 0 & 1 & 0 \\ -\sin 0.5535 & 0 & \cos 0.5535 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos 0.5535 & -\sin 0.5535 \\ 0 & \sin 0.5535 & \cos 0.5535 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos 0.5535 & \sin 0.5535 & 0 \\ -\sin 0.5535 & \cos 0.5535 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos 0.5535 & 0 & 0 \\ 0 & -\sin 0.5535 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Click to Exit Browser Software

Question # 18 of 30 (Start time: 10:54:22 AM, 07 July 2020)

Which of the following method is not an iterative?

Select the correct option

- ☐ Gauss-Seidel method
- ☐ Iteration's method
- ☐ Relaxation Method
- ☐ Gauss Jordan method



Question # 24 of 30 (Start time: 10:52:56 AM, 07 July 2020)

While using Jacobi method for the matrix

$$A = \begin{bmatrix} 1 & 1/4 & 1/2 \\ 1/4 & 1/3 & 1/4 \\ \dots & \dots & \dots \end{bmatrix}$$

Select the correct option

[Reload Math](#)



$$S_1 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos 0.4480 & -\sin 0.4480 \\ 0 & \sin 0.4480 & \cos 0.4480 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos 0.4480 & -\sin 0.4480 & 0 \\ \sin 0.4480 & \cos 0.4480 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos 0.4480 & 0 & -\sin 0.4480 \\ 0 & 1 & 0 \\ \sin 0.4480 & 0 & \cos 0.4480 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos 0.4480 & 0 & 0 \\ 0 & -\sin 0.4480 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

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AHID MUKHTAR

2

Quiz Start Time: 01

(Start time: 09:43:07 AM, 07 July 2020)

method for the matrix

$$A = \begin{bmatrix} 1 & \sqrt{3} & \sqrt{2} \\ \sqrt{3} & 3 & 2 \\ - & & \end{bmatrix}$$

ption



$$\tan 2\theta = \frac{2a_{13}}{a_{33} - a_{11}}$$

$$\tan 2\theta = \frac{2a_{23}}{a_{22} - a_{33}}$$

$$\tan 2\theta = \frac{2a_{13}}{a_{11} - a_{33}}$$

$$\tan 2\theta = \frac{2a_{12}}{a_{11} - a_{22}}$$

Click to Show Answer & Move to Next Question

Question # 13 of 30 (Start time: 10:47:26 AM, 07 July 2020)

Quiz Start Time: 10:33 AM

If the product of two matrices is an identity matrices that is $AB = I$, then which of the following is true?

Select the correct option

- ☐ A is transpose of B
- ☒ A is inverse of B
- ☐ A is singular
- ☐ B is singular

The linear equation: $x+y=1$ has —— solution/solutions.

Select the correct option



no solution



unique



infinite many



finite many

While using the relaxation method for finding the solution of the following system

$$8x_1 + 3x_2 - 2x_3 = 5$$

$$4x_1 + 7x_2 + 2x_3 = 9 \text{ with the initial vector } (0, 0, 0), \text{ the residuals would be}$$

Select the correct option

☒ $R_1 = 5, R_2 = 9, R_3 = 2$

☐ $R_1 = 2, R_2 = 6, R_3 = 3$

☐ $R_1 = 3, R_2 = 7, R_3 = 6$

☐ $R_1 = -4, R_2 = 8, R_3 = 9$

Question # 12 of 30 (Start time: 10:46:04 AM, 07 July 2020)

An eigenvector V is said to be normalized if the coordinate of largest magnitude is equal to zero.

Select the correct option

☐ TRUE

☐ FALSE



Question # 18 of 30 (Start time: 10:44:10 AM, 07 July 2020)

While solving a system of linear equations by Gauss Jordan Method, in which of the following case the partial pivoting is essential?

Select the correct option

- | | |
|-----------------------|--|
| ☐ | When the upper triangular entries are zero |
| ☐ | When lower triangular entries are zero |
| ☐ | When diagonal entries are zeros |
| ☐ | When pivots are zero |
- 

Question # 9 of 30 (Start time: 10:42:56 AM, 07 July 2020)

Our Start Time

Back substitution procedure is used in _____

Select the correct option

- ☐ Gaussian Elimination Method
- ☐ Jacobi's method
- ☐ Gauss-Seidel method
- ☐ None of the given choices

of 30 (Start time: 10:42:21 AM, 07 July 2020)

While using the relaxation method for finding the solution of the below given system,
which of the following increment will be introduced?

$$9x_1 + 5x_2 - 3x_3 = 12$$

ect option

Rel

$$dx_1 = \frac{R_1}{a_{22}}$$



$$dx_1 = \frac{R_1}{a_{11}}$$

$$dx_2 = \frac{R_2}{a_{22}}$$

$$dx_3 = \frac{R_3}{a_{33}}$$

Click to Save Answer & Move to N

Question # 15 of 30 (Start time: 10:39:46 AM, 07 July 2020)

If the pivot element happens to be zero, then the i -th column elements are searched for the numerically element.

Select the correct option

☒	Smallest
☐	Largest

Gauss-Seidel method is similar to ____

Select the correct option

- ☐ Iteration's method
- ☐ Regula-Falsi method
- ☐ Jacobi's method
- ☐ None of the given choices

9:42



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MC190400160: ZAHID MUKHTAR

MTH503:Grand Quiz

Question # 5 of 30 (Start time: 09:42:07 AM, 07 July 2020)

While using power method, the computed vector

$$u^{(1)} = \begin{pmatrix} 12 \\ -6 \\ -2 \end{pmatrix}$$

Select the correct option

- | | |
|-----------------------|--|
| ☐ | $u^{(1)} = \frac{1}{12} \begin{pmatrix} 1 \\ -12/6 \\ -12/2 \end{pmatrix}$ |
| ☐ | $u^{(1)} = 12 \begin{pmatrix} 1 \\ -6/12 \\ -2/12 \end{pmatrix}$ |
| ☐ | $u^{(1)} = -2 \begin{pmatrix} -12/2 \\ 6/2 \\ 1 \end{pmatrix}$ |
| ☐ | $u^{(1)} = -\frac{1}{2} \begin{pmatrix} -2/12 \\ -2/6 \\ 1 \end{pmatrix}$ |

Question # 14 of 30 (Start time: 10:38:18 AM, 07 July 2020)

The determinant of a diagonal matrix is the product of the diagonal elements.

Select the correct option

☒	TRUE
☐	FALSE

Question # 4 of 30 (Start time: 10:38:00 AM, 07 July 2020)

Quiz Start Time: 10:33 AM, 07 July 2020

Total Marks: 1

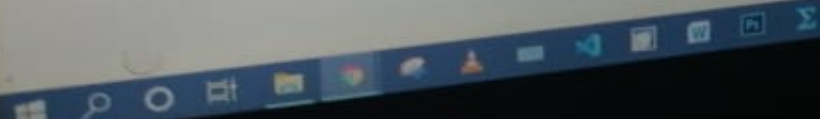
Relaxation Method is a/an _____

Select the correct option

Direct method



Iterative method



Which of the following systems of linear equations has a strictly diagonally dominant coefficient matrix?

Select the correct option



$$\begin{aligned} -x_1 + 12x_2 + 5x_3 &= 8 \\ 9x_1 + 5x_2 - 3x_3 &= 12 \\ 2x_1 - 4x_2 + 7x_3 &= -15 \end{aligned}$$



$$\begin{aligned} 9x_1 + 5x_2 - 3x_3 &= 12 \\ -x_1 + 12x_2 + 5x_3 &= 8 \\ 2x_1 - 4x_2 + 7x_3 &= -15 \end{aligned}$$



$$\begin{aligned} 2x_1 - 4x_2 + 7x_3 &= -15 \\ -x_1 + 12x_2 + 5x_3 &= 8 \\ 9x_1 + 5x_2 - 3x_3 &= 12 \end{aligned}$$



$$\begin{aligned} 9x_1 + 5x_2 - 3x_3 &= 12 \\ 2x_1 - 4x_2 + 7x_3 &= -15 \\ -x_1 + 12x_2 + 5x_3 &= 8 \end{aligned}$$

Question # 13 of 30 (Start time: 10:36:50 AM, 07 July 2020)

A 3×3 identity matrix have three and different eigen values.

Select the correct option

☐	TRUE
☒	FALSE

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Question # 11 of 30 (Start time: 10:34:06 AM, 07 July 2020)

Numerical methods for finding the solution of the system of equations are classified as direct and ____ methods

Select the correct option

- | | |
|----------------------------------|---------------------------|
| ☐ | Indirect |
| ☒ | Iterative |
| ☐ | Jacobi |
| ☐ | None of the given choices |

Click to Save Answer



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55 minutes ago



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Quiz Start Time: 0

AM, 07 July 2020)

or finding the solution of the following system

$$3x + y + z = 11$$

$$2x + 5y - z = 16$$

$$\left(\frac{11}{3}, \frac{16}{5}, -\frac{4}{5}\right)$$

$$\left(\frac{11}{3}, -\frac{16}{5}, -\frac{4}{5}\right)$$

$$\left(\frac{11}{3}, \frac{26}{15}, -\frac{7}{25}\right)$$

$$\left(\frac{11}{3}, \frac{5}{11}, \frac{2}{13}\right)$$

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Shortcut to
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Question # 9 of 30 (Start time: 10:31:16 AM, 07 July 2020)

Power method is applicable if the eigen values are _____

Select the correct option



real and distinct



real and equal



positive and distinct



negative and distinct



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4 photos

9:39 AM

equation on a matrix that has ____ zeros along its main diagonal.

Select the correct option



no



atleast one

Click to Save Answer & Move to Next Question

9:41 AM

9:40



Which of the following system of equation is diagonally dominant

Select the correct option



$$\begin{aligned}3x + y + z &= 3 \\ x + y + 5z &= 2 \\ 2x + 5y - z &= 4\end{aligned}$$



$$\begin{aligned}x + y + 5z &= 2 \\ 3x + y + z &= 3 \\ 2x + 5y - z &= 4\end{aligned}$$



$$\begin{aligned}2x + 5y - z &= 4 \\ 3x + y + z &= 3 \\ x + y + 5z &= 2\end{aligned}$$



$$\begin{aligned}3x + y + z &= 3 \\ 2x + 5y - z &= 4 \\ x + y + 5z &= 2\end{aligned}$$

Click to Save Answer

Question # 8 of 30 (Start time: 10:29:47 AM, 07 July 2020)

While using power method, the computed vector

$$u^{(1)} = \begin{pmatrix} 7 \\ 12 \\ 14 \end{pmatrix}$$

Select the correct option



$$u^{(1)} = 7 \begin{pmatrix} 1 \\ 12/7 \\ 14/7 \end{pmatrix}$$



$$u^{(1)} = \frac{1}{7} \begin{pmatrix} 1 \\ 7/12 \\ 7/14 \end{pmatrix}$$



$$u^{(1)} = 12 \begin{pmatrix} 7/12 \\ 1 \\ 14/12 \end{pmatrix}$$



$$u^{(1)} = 14 \begin{pmatrix} 7/14 \\ 12/14 \\ 1 \end{pmatrix}$$

Click to Save Answer & Move to Next

Question 7 of 30 (Start time: 10:26:43 AM, 07 July 2020)

Which of the following rearrangement make strictly diagonal dominant, the system of linear equations: $x-3y+z = -2$, $-6x+4y+11z=1$, $5x-2y-2z=9$?

Select the correct option



$5x-2y-2z=9$, $x-3y+z = -2$, $-6x+4y+11z=1$



$-6x+4y+11z=1$, $x-3y+z = -2$, $5x-2y-2z=9$



$5x-2y-2z=9$, $-6x+4y+11z=1$, $x-3y+z = -2$



No need to rearrange as system is already in diagonal dominant form.

Click to Save Answer

For a system of linear equations, the corresponding coefficient matrix has the value of determinant; $|A| = -3$, then which of the following is true?

Select the correct option

- ☐ The system has unique solution
- ☐ The system has finite multiple solutions
- ☐ The system has infinite may solutions
- ☐ The system has no solution

Question # 2 of 30 (Start time: 10:20:57 AM, 07 July 2020)

Total Marks:

_____ method, matrix $[A]$ of the system of equations is decomposed into the product of two matrices $[L]$ and $[U]$, where $[L]$ is a lower-triangular matrix and $[U]$ is an upper-triangular matrix with 1s on its main diagonal.

Select the correct option

☐	Gauss-Seidel
☐	Gaussian elimination
☐	Crout's Reduction
☐	None of the given choices



Power method is applicable if the eigen values are

_____.

Select the correct option

- ☐ real and distinct
- ☐ real and equal
- ☐ positive and distinct
- ☐ negative and distinct



In Jacobi's Method, We assume that theelements does not vanish.

Select the correct option

- ☐ Diagonal
- ☐ Off-diagonal
- ☐ Row
- ☐ Column

Click to Save Answer & Move to Next Question



MC190400160: ZAHID MUKHTAR

MTH603:Grand Quiz

Question # 6 of 30 (Start time: 09:43:07 AM, 07 July 2020)

While using Jacobi method for the matrix

$$A = \begin{bmatrix} 1 & \sqrt{3} & \sqrt{2} \\ \sqrt{3} & 3 & 2 \\ - & - & - \end{bmatrix}$$

Select the correct option

- | | |
|-----------------------|--|
| ☐ | $\tan 2\theta = \frac{2a_{13}}{a_{33} - a_{11}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{21}}{a_{22} - a_{12}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{11}}{a_{11} - a_{33}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{12}}{a_{11} - a_{22}}$ |



Quiz

Question # 11 of 30 (Start time: 10:04:42 AM, 07 July 2020)

Eigenvectors of a symmetric matrix are orthogonal, but only for distinct eigenvalues.

Select the correct option

☐	TRUE
☐	FALSE



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MUKHTAR

Time Left: 89
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Quiz Start Time: 09:37 AM, 07 Jul

Time: 09:48:55 AM, 07 July 2020)

Total M

While using the relaxation method for finding the solution of the below given system,
which of the following increment will be introduced?

$$6x_1 - 2x_2 + 3x_3 = 1$$

Reload Math Equ

$$dx_1 = \frac{R_1}{a_{22}}$$

$$dx_1 = \frac{R_1}{a_{11}}$$

$$dx_2 = \frac{R_2}{a_{22}}$$

$$dx_2 = \frac{R_2}{a_{11}}$$

Previous Question | Next Question

9:49

4G 92 B/s 75



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4



MC190400160: ZAHID MUKHTAR

Time Left 84 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 12 of 30 (Start time: 09:49:37 AM, 07 July 2020)

Total Marks: 1

 $3x^4 - 2x^2 - 24 = 0$ has at least ---- real root(s)?

Select the correct option

Reload Math Equations

☐	1
☐	2
☐	3
☐	4

Click to Show Answer & Move to Next Question

of 30 (Start time: 09:58:16 AM, 07 July 2020)

the Gauss-Seidel method for finding the solution of the following system

$$2x + 2y + z = 3$$

$$x + 3y + z = 2$$

$$x + y + z = 2$$

Correct option

Relo



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

$$\left(\frac{3}{2}, \frac{1}{6}, \frac{1}{3}\right)$$

$$\left(\frac{3}{2}, \frac{5}{7}, \frac{1}{9}\right)$$

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

Question # 28 of 30 (Start time: 10:04:29 AM, 07 July 2020)

The number of significant digits in the number 608.030060 is:

Select the correct option



6



7



8



9



Question # 28 of 30 (Start time: 10:04:29 AM, 07 July 2020)

The number of significant digits in the number 608.030060 is:

Select the correct option



6



7



8



9





An augmented matrix may also be used to find the inverse of a matrix by combining it with the matrix.

Select the correct option

☐	Inverse
☐	Square
☐	Identity
☐	None of the given choices

Click to Save Answer & Move to Next Question

Question # 27 of 30 (Start time: 10:03:15 AM, 07 July 2020)

Which of the following systems of linear equations has a strictly diagonally dominant coefficient matrix?

Select the correct option



$$\begin{aligned}4x_1 + 2x_2 + 3x_3 &= 1 \\ -5x_1 + 3x_2 + 2x_3 &= 1 \\ 7x_1 + 5x_2 - 8x_3 &= 9\end{aligned}$$



$$\begin{aligned}9x_1 + 5x_2 - 3x_3 &= 12 \\ 2x_1 - 4x_2 + 7x_3 &= -15 \\ -x_1 + 12x_2 + 5x_3 &= 8\end{aligned}$$



$$\begin{aligned}4x_1 + 2x_2 - 1x_3 &= -4 \\ x_1 + 5x_2 + 1x_3 &= 10 \\ x_1 + x_2 + 3x_3 &= 9\end{aligned}$$



$$\begin{aligned}x_1 + x_2 - 5x_3 &= -13 \\ 6x_1 - 2x_2 + 3x_3 &= 1 \\ -2x_1 + 7x_2 + 2x_3 &= 5\end{aligned}$$



Question # 20 of 30 (Start time: 10:02:27 AM, 07 July 2020)

If the product of two matrices is an identity matrices that is $AB = I$, then which of the following is true?

Select the correct option

- | | |
|-----------------------|---------------------|
| ☐ | A is transpose of B |
| ☐ | A is inverse of B |
| ☐ | A is singular |
| ☐ | B is singular |



MC190400160: ZAHID MUKHTAR

Time Left: 88
sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 16 of 30 (Start time: 09:56:25 AM, 07 July 2020)

Total Marks: 1

The first row of the augmented matrix of the system of linear equations is:

$$2x+z=4$$

$$x-y+z=-3$$

$$-y+z=-5$$

Select the correct option

☐ 2, 0, 1 and 4☐ 1, 0, 0 and 4☐ 0, 2, 1 and 4☐ 2, 0, 1 and -4

Click to View Answer & Move to Next Question

566 B/s

2G 3G

52%

10:03 AM

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☆

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Time Left

5 minutes ago

MC199, Unit 60: ZAHID MUKHTAR

MTH603: Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 17 of 30 (Start time: 09:57:35 AM, 07 July 2020)

Total Marks: 1

Eigenvalues of a symmetric matrix are all _____ .

Select the correct option

☐ real

☐ complex

☐ zero

☐ positive

Click to Open Answer & Move to Next Question

Question # 18 of 30 (Start time: 09:52:17 AM, 07 July 2020)

$$A = \begin{bmatrix} 1 & 1/4 & 1/2 \\ 1/4 & 1/3 & 1/4 \\ 1/2 & 1/4 & 1/5 \end{bmatrix}$$

Select the correct option

☐ $S_1 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos 0.4480 & -\sin 0.4480 \\ 0 & \sin 0.4480 & \cos 0.4480 \end{bmatrix}$

☐ $S_1 = \begin{bmatrix} \cos 0.4480 & -\sin 0.4480 & 0 \\ \sin 0.4480 & \cos 0.4480 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

☐ $S_1 = \begin{bmatrix} \cos 0.4480 & 0 & -\sin 0.4480 \\ 0 & 1 & 0 \\ \sin 0.4480 & 0 & \cos 0.4480 \end{bmatrix}$

☐ $S_1 = \begin{bmatrix} \cos 0.4480 & 0 & 0 \\ 0 & -\sin 0.4480 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

9:52

4G 5.9 K/s 75



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MC190400160: ZAHID MUKHTAR

Time Left 88 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 13 of 30 (Start time: 09:52:16 AM, 07 July 2020)

Total Marks: 1

The linear equation: $0x+0y=2$ has ----- solution/solutions.

Select the correct option

☐ unique

☒ no solution

☐ infinite many

☐ finite many

Click to Save Answer & Move to Next Question

MT1603: Grand Quiz

Question # 17 of 30 (Start time: 09:51:13 AM, 07 July 2020)

By using determinants, we can easily check that the solution of the given system of linear equation exists and it is unique.

Select the correct option

☒	TRUE
☐	FALSE

Question # 15 of 30 (Start time: 09:49:15 AM, 07 July 2020)

Let $[A]$ be a 3×3 real symmetric matrix with

$$[a_{12}]$$

be numerically the largest off-diagonal element of A , then we can construct orthogonal matrix S_1 by Jacobi's method as

Select the correct option



$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \theta & -\sin \theta \\ 0 & \sin \theta & \cos \theta \end{bmatrix}$$



$$\begin{bmatrix} \cos \theta & 0 & -\sin \theta \\ 0 & 1 & 0 \\ \sin \theta & 0 & \cos \theta \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \theta & -\sin \theta \\ 0 & \sin \theta & \cos \theta \end{bmatrix}$$



$$\begin{bmatrix} \cos \theta & -\sin \theta & 0 \\ \sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Question # 13 of 30 (Start time: 09:46:30 AM, 07 July 2020)

$$\begin{aligned} 3x + y + z &= 11 \\ 2x + 5y - z &= 16 \\ x + y + 5z &= 4 \end{aligned}$$

with initial guess (0,0,0), the next iteration would be

Select the correct option

- | | |
|----------------------------------|---|
| ☒ | $\left(\frac{11}{3}, \frac{16}{5}, -\frac{4}{5} \right)$ |
| ☐ | $\left(\frac{11}{3}, -\frac{16}{5}, -\frac{4}{5} \right)$ |
| ☐ | $\left(\frac{11}{3}, \frac{26}{15}, -\frac{7}{25} \right)$ |
| ☐ | $\left(\frac{11}{3}, \frac{5}{11}, \frac{2}{13} \right)$ |



MC190400160: ZAHID MUKHTAR

Time Left 83 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 8 of 30 (Start time: 09:44:46 AM, 07 July 2020)

Total Marks: 1

For a system of linear equations, the corresponding coefficient matrix has the value of determinant; $|A| = -3$, then which of the following is true?

Select the correct option



The system has unique solution



The system has finite multiple solutions



The system has infinite may solutions



The system has no solution

Click to Copy Answer & Move to Next Question



MC190400160: ZAHID MUHTAR

Time Left 88 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 5 of 30 (Start time: 09:42:07 AM, 07 July 2020)

Total Marks: 1

While using power method, the computed vector

$$u^{(1)} = \begin{pmatrix} 12 \\ -6 \\ - \end{pmatrix}$$

Select the correct option

Reload Math Equations

- | | |
|----------------------------------|--|
| ☐ | $u^{(1)} = \frac{1}{12} \begin{pmatrix} 1 \\ -12/6 \\ -12/2 \end{pmatrix}$ |
| ☒ | $u^{(1)} = 12 \begin{pmatrix} 1 \\ -6/12 \\ -2/12 \end{pmatrix}$ |
| ☐ | $u^{(1)} = -2 \begin{pmatrix} -12/2 \\ 6/2 \\ 1 \end{pmatrix}$ |
| ☐ | $u^{(1)} = -\frac{1}{2} \begin{pmatrix} -2/12 \\ -2/6 \\ 1 \end{pmatrix}$ |

Click to view Answer & Move to Next Question



MC190400160: ZAHID MUKHTAR

Time Left 86 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 4 of 30 (Start time: 09:40:58 AM, 07 July 2020)

Total Marks: 1

The Jacobi's method is a method of solving a matrix equation on a matrix that has ____ zeros along its main diagonal.

Select the correct option

☐ no☐ atleast one[Click to Show Answer & Move to Next Question](#)

Question # 7 of 30 (Start time: 09:38:29 AM, 07 July 2020)

Two matrices with the _____ characteristic polynomial need not be similar.

Select the correct option

☐	same
☐	different

Question # 6 of 30 (Start time: 09:37:06 AM, 07 July 2020)

A series $16+8+4+2+1$ is replaced by the series $16+8+4+2$, then it is called

Select the correct option

- | | |
|-----------------------|------------------------|
| ☐ | Inherent error |
| ☐ | Local round off error |
| ☐ | Local Truncation error |
| ☐ | Typing error |



MC190400160: ZAHID MUKHTAR

Time Left 82 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 09:37 AM, 07 July 2020

Question # 2 of 30 (Start time: 09:38:52 AM, 07 July 2020)

Total Marks: 1

Which method requires a derivative of the solution?

Select the correct option



Bisection method



Regula-Falsi method



Muller method



Newton-Raphson method

Click to Save Answer & Move to Next Question

Question # 5 of 30 (Start time: 09:36:25 AM, 07 July 2020)

If system of equations is inconsistent then its means that it has

Select the correct option

- | | |
|---|---------------------------|
| ☒ | No Solutions |
| ☐ | Many solutions |
| ☐ | Infinite Many solutions |
| ☐ | None of the given choices |

Question # 4 of 30 (Start time: 09:35:17 AM, 07 July 2020)

$$A = \begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$$

Select the correct option

Relo

- | | |
|----------------------------------|--|
| ☐ | $\tan 2\theta = \frac{2a_{13}}{a_{33} - a_{11}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{23}}{a_{22} - a_{33}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{13}}{a_{11} - a_{33}}$ |
| ☒ | $\tan 2\theta = \frac{2a_{12}}{a_{11} - a_{22}}$ |

Question # 4 of 30 (Start time: 09:35:17 AM, 07 July 2020)

While using Jacobi method for the matrix

$$A = \begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

Select the correct option

- | | |
|-----------------------|--|
| ☐ | $\tan 2\theta = \frac{2a_{13}}{a_{33} - a_{11}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{23}}{a_{22} - a_{33}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{13}}{a_{11} - a_{33}}$ |
| ☐ | $\tan 2\theta = \frac{2a_{12}}{a_{11} - a_{22}}$ |



e: 11:14:49 AM, 07 July 2020)

$$A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 1 \\ 0 & 1 & 2 \end{bmatrix}$$



$$S_1 = \begin{bmatrix} \cos \frac{\pi}{4} & 0 & -\sin \frac{\pi}{4} \\ 0 & 1 & 0 \\ \sin \frac{\pi}{4} & 0 & \cos \frac{\pi}{4} \end{bmatrix}$$

$$S_1 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \frac{\pi}{4} & -\sin \frac{\pi}{4} \\ 0 & \sin \frac{\pi}{4} & \cos \frac{\pi}{4} \end{bmatrix}$$

$$S_1 = \begin{bmatrix} \cos \frac{\pi}{4} & -\sin \frac{\pi}{4} & 0 \\ \sin \frac{\pi}{4} & \cos \frac{\pi}{4} & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$S_1 = \begin{bmatrix} \cos \frac{\pi}{4} & 0 & 0 \\ 0 & -\sin \frac{\pi}{4} & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Click to



MC190403965: MUHAMMAD TAYYAB MUNIR

Time Left 89 sec(s)

MTH603:Grand Quiz

Quiz Start Time: 11:09 AM, 07 July 2020

Question 3 of 30 (Start time: 11:12:31 AM, 07 July 2020)

Total Marks: 1

Below are all the finite difference methods EXCEPT

_____.

Select the correct option

- | | |
|-----------------------|-------------------------------------|
| ☐ | Jacobi's method |
| ☐ | Newton's backward difference method |
| ☐ | Stirling's formula |
| ☐ | Forward difference method |

[Click to show Answer & Move to Next Question](#)