

**Question 18**

Correct

Mark 6 out of 6

Determine the root of the given equation  $x^2 - 3 = 0$  for  $x \in [1, 2]$  using Bisection method

The value of  $f(x_1)$  at the first iteration  ✓

The value of  $f(x_2)$  at the second iteration  ✓

The value of  $f(x_3)$  at the third iteration  ✓

The value of  $f(x_4)$  at the fourth iteration  ✓

The value of  $f(x_5)$  at the fifth iteration  ✓

The value of  $f(x_6)$  at the sixth iteration  ✓

**Question 1**

Correct

Mark 1 out of 1

The bisection method of finding roots of non linear equations falls under the category of an ----- method

Select one:

- ☐ a. open
- ☐ b. Graphical
- ☒ c. both an iterative method and a bracketing ✓
- ☐ d. random
- ☐ e. None of Them

Your answer is correct.

The correct answer is: both an iterative method and a bracketing

**Question 2**

Incorrect

Mark 0 out of 1

The Det of a matrix  $M = \begin{bmatrix} 0 & 4 & 0 \\ 2 & 50 & 2 \\ 1 & -2 & -8 \end{bmatrix}$

- ☐ a. -54
- ☐ b. 0
- ☐ c. 72
- ☒ d. -72 ✖
- ☐ e. None of them

Your answer is incorrect.

The correct answer is:

72

**Question 3**

Correct

Mark 1 out of 1

In Gauss Elimination Method, the augmented matrix for the following system is:

$$6x - 3y + 12z = -9$$

$$3x - 6y - 30 = -18$$

$$3x + 4z = 7$$

$$\begin{bmatrix} 6 & -3 & 12 & -9 \\ 3 & -6 & -30 & -18 \\ 3 & 0 & 4 & 7 \end{bmatrix}$$

Select one:

☒ True ✓

☐ False

The correct answer is 'True'.

**Question 4**

Correct

Mark 1 out of 1

given the following equation

X has the following solutions:

$$x^2 = 16$$

- ☐ a. No Solution
- ☐ b. (+4,-2)
- ☐ c. (+2,-4)
- ☒ d. (+4,-4) ✓

**Question 5**

Correct

Mark 1 out of 1

The dimensions of the following matrix are  $n \times m$ .

$$\begin{bmatrix} a_{11} & a_{12} \dots & a_{ij} & a_{in} \\ a_{21} & a_{22} \dots & a_{ij} & a_{2n} \\ \vdots & \vdots & \vdots & \vdots \\ a_{m1} & a_{m2} & a_{ij} & a_{mn} \end{bmatrix}$$

Select one:

☐ True

☒ False ✓

The correct answer is 'False'.

**Question 6**

Correct

Mark 1 out of 1

The Transpose of the following matrix

$$\begin{bmatrix} 1 & 3 & -2 \\ -1 & 7 & 0 \\ 1 & 0 & 8 \end{bmatrix}$$

- ☐ a. None of them
- ☐ b.  $\begin{bmatrix} 1 & 1 & -2 \\ -1 & 7 & 0 \\ -2 & 0 & 8 \end{bmatrix}$
- ☒ c.  $\begin{bmatrix} 1 & -1 & 1 \\ 3 & 7 & 0 \\ -2 & 0 & 8 \end{bmatrix}$  ✓
- ☐ d.  $\begin{bmatrix} 1 & 1 & -2 \\ 1 & 7 & 0 \\ -2 & 1 & 8 \end{bmatrix}$

Your answer is correct.

The correct answer is:

$$\begin{bmatrix} 1 & -1 & 1 \\ 3 & 7 & 0 \\ -2 & 0 & 8 \end{bmatrix}$$

**Question 7**

Correct

Mark 1 out of 1

Which of the following matrix is Singular ?

- ☐ a.  $\begin{bmatrix} 31 & 12 \\ 26 & 10 \end{bmatrix}$
- ☐ b.  $\begin{bmatrix} 37 & 12 \\ 51 & 10 \end{bmatrix}$
- ☐ c.  $\begin{bmatrix} 31 & 12 \\ 26 & 8 \end{bmatrix}$
- ☒ d.  $\begin{bmatrix} 3 & 12 \\ 2 & 8 \end{bmatrix}$  ✓

Your answer is correct.

The correct answer is:

$$\begin{bmatrix} 3 & 12 \\ 2 & 8 \end{bmatrix}$$



**Question 8**

Incorrect

Mark 0 out of 1

Determine the number of solutions of the linear system:

$$x - y = 12$$

$$x + y = 0$$

- ☒ a. infinite solutions ✖
- ☐ b. two solutions
- ☐ c. one solution
- ☐ d. no solution

Your answer is incorrect.

The correct answer is:  
one solution

**Question 9**

Correct

Mark 1 out of 1

Diagonal matrix is a square Matrix is where all elements are zero's except those on the first row

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

**Question 10**

Correct

Mark 1 out of 1

$$\text{If } A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}, \text{ then } A^{-1} = \begin{bmatrix} \frac{d}{|A|} & \frac{-b}{|A|} \\ \frac{-c}{|A|} & \frac{a}{|A|} \end{bmatrix}$$

Select one:

☒ True ✓☐ False

The correct answer is 'True'.

**Question 11**

Incorrect

Mark 0 out of 1

$$A = \begin{bmatrix} 1 & 0 & 4 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{bmatrix}$$

The minor  $m_{13}$  of the matrix  $A =$ 

- ☐ a. -2
- ☐ b. 0
- ☐ c. 1
- ☐ d. 2
- ☒ e. none of them ✖

Your answer is incorrect.

The correct answer is:

0

**Question 12**

Incorrect

Mark 0 out of 1

the co-factor  $c_{12}$  of the matrix  $A = \begin{bmatrix} 1 & -1 \\ 2 & -2 \end{bmatrix}$  is

- ☐ a. -1
- ☒ b. none of them ✖
- ☐ c. 2
- ☐ d. 1
- ☐ e. -2

Your answer is incorrect.

The correct answer is:

-2

**Question 13**

Correct

Mark 1 out of 1

The following matrix represents .....

$$\begin{bmatrix} 1 & 7 & 4 & 4 \\ 0 & 1 & 7 & 4 \\ 0 & 0 & 7 & 8 \\ 0 & 0 & 0 & 3 \end{bmatrix}$$

Select one:

- ☒ a. Upper triangular matrix ✓
- ☐ b. Diagonal matrix
- ☐ c. Identity matrix
- ☐ d. Lower triangular matrix

Your answer is correct.

The correct answer is: Upper triangular matrix

Question 15

Correct

Mark 1 out of 1

$$\begin{bmatrix} 3 & -3 \\ -2 & 4 \end{bmatrix}^{-1} =$$

Select one:

- ☒ a.  $\begin{bmatrix} \frac{4}{6} & \frac{3}{6} \\ \frac{2}{6} & \frac{3}{6} \end{bmatrix}$  ✓
- ☐ b.  $\begin{bmatrix} \frac{4}{18} & \frac{3}{18} \\ \frac{2}{18} & \frac{3}{18} \end{bmatrix}$
- ☐ c.  $\begin{bmatrix} \frac{-4}{18} & \frac{3}{18} \\ \frac{2}{18} & \frac{-3}{18} \end{bmatrix}$
- ☐ d.  $\begin{bmatrix} \frac{-4}{6} & \frac{3}{6} \\ \frac{2}{6} & \frac{-3}{6} \end{bmatrix}$

Your answer is correct.

The correct answer is:  $\begin{bmatrix} \frac{4}{6} & \frac{3}{6} \\ \frac{2}{6} & \frac{3}{6} \end{bmatrix}$

Question 16

Correct

Mark 1 out of 1

*The det of the matrix*

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

Select one:

- ☐ a. 2
- ☒ b. 0 ✓
- ☐ c. 1
- ☐ d. -1

Your answer is correct.

The correct answer is: 0



**Question 17**

Correct

Mark 1 out of 1

Determine the number of solutions of the linear system:

$$14x - 5y = 123$$

$$14x - 5y = 73$$

- ☒ a. no solution ✓
- ☐ b. one solution
- ☐ c. infinite solutions
- ☐ d. none of them
- ☐ e. two solutions

Your answer is correct.

The correct answer is:  
no solution

Question 18

Correct

Mark 1 out of 1

Let:

$$\mathbf{A} = \begin{bmatrix} 1 & 1 & 0 \\ 0 & 2 & 3 \end{bmatrix}, \mathbf{B} = \begin{bmatrix} 1 \\ 1 \\ 2 \end{bmatrix}$$

Then:

$$(\mathbf{AB})^T =$$

Select one:

- ☐ a.  $\begin{bmatrix} 1 & 1 & 2 \end{bmatrix}$
- ☐ b.  $\begin{bmatrix} 1 & 1 & 0 \\ 0 & 2 & 3 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \\ 2 \end{bmatrix}$
- ☒ c.  $\begin{bmatrix} 2 & 8 \end{bmatrix}$  ✓
- ☐ d.  $\begin{bmatrix} 1 & 0 \\ 1 & 2 \\ 0 & 3 \end{bmatrix}$

Your answer is correct.

The correct answer is:  $\begin{bmatrix} 2 & 8 \end{bmatrix}$

Question 19

Incorrect

Mark 0 out of 1

*if  $A, B, C$  square matrices  $B = ACA^{-1}$  then  $\det(B) =$*

Select one:

- ☐ a.  $\det(A)$
- ☐ b.  $\det(C)$
- ☒ c. neither  $\det(A)$  nor  $\det(C)$  ✖
- ☐ d.  $\det(A)$  and  $\det(C)$

Your answer is incorrect.

The correct answer is:  $\det(C)$

Question 20

Incorrect

Mark 0 out of 1

given the following function  $f(x)$  on the interval  $[2,5]$  the first iteration using the bisection method  $f(m)$  is

$$5x^2 - 5x + 4$$

- ☒ a. 0.687 ✖
- ☐ b. Bisection can not be applied
- ☐ c. 2.25
- ☐ d. -0.687
- ☐ e. None of them



Marked out of 1

Flag question

The value for  $X_2$  if we apply secant method at the function

$$f(x) = 2 - e^x$$

using  $x_0 = 0$  and  $x_1 = 1$

- ☐ a. 0.3324
- ☐ b. 0.987
- ☒ c. 0.7558
- ☐ d. 0.5819

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Next page



Answer saved

Marked out of 1

Flag question

Bisection method can be applied for the function

$$f(x) = x^3 + x - 3$$

at  $[2, 4]$

Select one:

☐ True

☒ False

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◀ Homework #2



The value for  $X_1$  if we apply newton's method at the

function  $f(x) = 2 - e^x$

using  $x_0 = 0$

☒ a. 0.75

☐ b. 0.5

☐ c. 0.2

☐ d. 1

Clear my choice

Previous page

Next page



Find the value for  $X_2$  in the following function using **false-position method** assuming  $x_0 = 0$  and  $x_1 = 0.11$

$$f(x) = x^3 - 0.165x^2 + 3.993 \times 10^{-4}$$

- ☒ a. 0.123
- ☐ b. 0.221
- ☒ c. 0.0660
- ☐ d. 0.311

Clear my choice





Not yet answered

Marked out of 1

Flag question

The value for  $X_1$  if we apply newton's method at the

function  $f(x) = 2 - e^x$

using  $x_0 = 0$

☐ a. 0.75

☐ b. 0.5

☐ c. 0.2

☒ d. 1

علم هذا السؤال

Find the value for  $X_2$  in the following function using **false-position method** assuming  $x_0 = 0$  and  $x_1 = 0.11$

$$f(x) = x^3 - 0.165x^2 + 3.993 \times 10^{-4}$$

- ☒ 0.123 .a ☐
- 0.0660 .b ☒
- 0.311 .c ☐
- 0.221 .d ☐

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Previous activity

Homework #2 ►



الانتقال إلى...

Next activity



تم حفظ الإجابة

الدرجة من 1

علم هذا السؤال

The value for  $X_2$  if we apply secant method at the function

$$f(x) = 2 - e^x$$

using  $x_0 = 0$  and  $x_1 = 1$

0.3324 .a ☐

0.5819 .b ☒

0.7558 .c ☐

0.987 .d ☐

أخِل اختياري

الصفحة التال  
ية

الصفحة السابقة

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Homework #2 ►



الانتقال إلى...

Bisection method can be applied for the function

$$f(x) = x^3 + x - 3$$

at  $[2, 4]$

Select one:

☐ True

☒ False

• E

Round the number to the nearest thousand  $x = 99.9995$

Select one:

☐ a. 99.999



اجل اختياري

Find the value for  $x_2$  in the following function using false-position method assuming  $x_0 = 0$  and  $x_1 = 0.11$

$$f(x) = x^3 - 0.165x^2 + 3.993 \times 10^{-4}$$

0.221

a ☐

0.311

b ☐

0.123

c ☒

0.0660

d ☐

اجل اختياري

given the following function  $f(x)$  on the interval  $[2,5]$  the first iteration using the bisection method  $f(m)$  is

$$5x^2 - 5x + 4$$



Question 18  
yet  
answered  
marked out of  
Flag  
Question

Using Lagrange's interpolation formula to find  $y(10)$  from the following table:

$x$	5	6	9	11
$y$	12	13	14	16

$$x_0 = 5$$

$$x_1 = 6$$

$$x_2 = 9$$

$$x_3 = 11$$

$$y_0 = 12$$

$$y_1 = 13$$

$$y_2 = 14$$

$$y_3 = 16$$

$$y(10) = 14.6663$$

ENG



Question 1

Not yet  
answered

Marked out of  
2

Flag  
question

to truncate the number  $x = 34.3376$  to three decimal places

Select one:

- ☒ a. 34.338
- ☐ b. 43.337
- ☐ c. 34.337
- ☐ d. 34.336

[Clear my choice](#)

Question 4

Not yet  
answered

Marked out of  
3

Flag  
question

Given the following table compute  $P(3)$  using Newton Formula

$(-2,15), (-1,-4), (1,0), (3,20)$

☐ a. 24

☒ b. 21

☐ c. 17

☒ d. 20

[Clear my choice](#)



Question 5

Answer saved

Marked out of 3

Remove flag

given the following function  $f(x)$  on the interval  $[2,5]$  the first iteration using the bisection method  $f(m)$  is

$$5x^2 - 5x + 4$$

Bisection can not be applied

☒ a. -0.687

☐ b. -2.25

☒ c. 0.687

☐ d. 2.25

Clear my choice

Question 7

Not yet  
answered

Marked out of  
2

🚩 Flag  
question

$$x^2 = 16$$

given the following equation

- ☐ a. No Solution
- ☐ b. (+4,-2)
- ☒ c. (+4,-4)
- ☐ d. (+2,-4)

[Clear my choice](#)

Question 8

Not yet  
answered

Marked out of  
2

Flag  
question

A vector is a row matrix contains any number of rows but at least one column

Select one:

☐ True

☒ False

Question 9

Not yet  
answered

Marked out of  
2

Flag  
question

Given a matrix  $A = \begin{bmatrix} 1 & -1 \\ 2 & -2 \end{bmatrix}$   $a_{11} + a_{22} = -1$

Select one:

☒ True

☐ False

Question **11**

Not yet  
answered

Marked out of  
2

Flag  
question

A non Zero Matrix is a matrix all entries are zeros

Select one:

☐ True

☒ False

Question 13

Not yet  
answered

Marked out of  
3

Flag  
question

The function  $f(x) = e^x$  using Taylor 5th degree polynomial at  $x_0=0$

☐ a.  $f(x) = 1 + \frac{x^2}{2} - \frac{x^3}{6} + \frac{x^4}{24} + \frac{x^5}{120}$

☐ b.  $f(x) = \frac{x^2}{2} - \frac{x^3}{6} + \frac{x^4}{24} + \frac{x^5}{120}$

☒ c.  $f(x) = 1 + x + \frac{x^2}{2} + \frac{x^3}{6} + \frac{x^4}{24} + \frac{x^5}{120}$

☐ d.  $f(x) = x + x^2 + x^3 + x^4 + x^5$

Clear my choice

Question 14

Not yet  
answered

Marked out of  
3

Flag  
question

***if  $B$  is  $(n \times n)$  Matrix then  $\det(B) = \det(B^T)$***

Select one:

☒ True

☐ False

Question **15**

Not yet  
answered

Marked out of  
2

Flag  
question

A developer claims that a program costs 98 US Dollar, and the True cost is 100 US Dollar. One of the following is True

Select one:

- ☐ a. The claimed cost was too low by 1%
- ☒ b. The claimed cost was too low by 2%
- ☐ c. The claim cost was above 1%
- ☐ d. The claim cost was above 2%

[Clear my choice](#)



Question **16**

Not yet  
answered

Marked out of  
2

Flag  
question

A rectangular matrix is a matrix which number of rows equal to number of columns

Select one:

☐ True

☒ False

Question **18**

Not yet  
answered

Marked out of  
2

Flag  
question

If C,D are two (n×n) matrices then  $\det(CD) = \det(C) \cdot \det(D)$

Select one:

☒ True

☐ False

Question 19

Not yet  
answered

Marked out of  
3

Flag  
question

The root (if exists) for the following function  $f(x) = e^{2x}$  on the interval  $[-2,0]$  start with  $x_1 = -2$

Select one:

- ☒ a. There is no root in this interval
- ☐ b. -1.758
- ☐ c. 2.242
- ☐ d. -2.242

Clear my choice

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Question 18

Answer saved  
Marked out of 1

Flag question

Assume that:

$$\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix} \times \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \\ b_{31} & b_{32} \end{bmatrix} = \begin{bmatrix} c_{11} & c_{12} \\ c_{21} & c_{22} \end{bmatrix}$$

The value of  $c_{21}$  is equal to:

Select one:

- ☒ a.  $(a_{21} \times b_{11}) + (a_{22} \times b_{21}) + (a_{23} \times b_{31})$
- ☐ b.  $(a_{11} \times b_{11}) + (a_{12} \times b_{21}) + (a_{13} \times b_{31})$
- ☐ c.  $(a_{11} \times b_{12}) + (a_{12} \times b_{22}) + (a_{13} \times b_{32})$
- ☐ d.  $(a_{21} \times b_{12}) + (a_{22} \times b_{22}) + (a_{23} \times b_{32})$

Clear my choice

Absolute error increases with increasing in difference between true value and approximated value

DELL

Question 12  
Answer saved  
Marked out of

If  $A = \begin{bmatrix} 1 & 4 & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} 3 \\ 6 \\ 5 \end{bmatrix}$ , then  $AB = 37$

Select one:

- ☒ True  
☐ False

To solve a set of linear equations using matlab, you can write the equations in the form  
 $A \cdot X = b$   
where  $A = [a_{11}, a_{12}, \dots, a_{1n}; a_{21}, a_{22}, \dots, a_{2n}; \dots, a_{n1}, a_{n2}, \dots, a_{nn}]$   
and  $b = [b_1, b_2, \dots, b_n]$

DELL



Flag question

this matrix is a diagonal matrix

Select one:

☐ True

☒ False

Question 12

Answer saved

Marked out of 1

Remove flag

Diagonal matrix is a square Matrix is where all elements are zero's except those on the first row

Select one:

☒ True

☐ False

Question 13

Not yet answered

Marked out of 4

Flag

Given the following set of discrete data in Table below

$x$	0.2	0.3	0.4	0.5	0.6
$f(x)$	1.0832	1.1972	1.3771	1.6487	2.05

$f'(0.4)$  using 3-point endpoint formula

Finish attempt

Time left 0:

ENG



- ☒ True  
☐ False

Question 2

Answer saved

Marked out of 2

Flag question

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

this matrix is a diagonal matrix

Select one:

- ☐ True  
☒ False

Let  $A = \begin{bmatrix} a & -7 \\ 2 & -b \end{bmatrix}$ ,  $|A| = \dots$

Select one:

- ☐ a.  $14 - ab$



To solve a set of linear equations using matlab, you can write the equations in the form

$$A.X = b$$

```
>>A= [a11, a12, .....,a1n;
```

```
a21, a22,....., a2n;
```

```
.....;
```

```
an1,.....ann]
```

```
>>b=[b1;b2;.....;bn]
```

```
>>inv(A)*b
```

Select one:

☒ True

☐ False

Previous page

Finish attempt ...



☐ d. (0,0)

Question 4

Not yet answered

Marked out of 1

Flag question

The determinant of the following matrix is:

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

Select one:

☒ a. 6

☐ b. 4

☐ c. 3

☐ d. -1

Clear my choice

Question 5

Not yet answered

The determinant of zero matrix of order (2x3) is zero

Select one:

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Question 14

Answer saved

Marked out of 1

Remove flag

Round the number to the nearest thousand  $x = 99.9995$

Select one:

- ☐ a. 99.999
- ☐ b. 10.000
- ☒ c. 100.000
- ☐ d. 99.9996

Clear my choice

Approximate the integrals

a. 0.8790

b. 0.4578

$\int_0^1 \sin(x) dx$  using the simple trapezium rule

DELL



4



Assume that:  $\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix} \times \begin{bmatrix} b \\ b \\ b \end{bmatrix}$

The value of  $c_{21}$  is equal to:

Select one:

- ☐ a.  $(a_{11} \times b_{11}) + (a_{12} \times b_{21}) + (a_{13}$
- ☐ b.  $(a_{11} \times b_{12}) + (a_{12} \times b_{22}) + (a_{13}$
- ☒ c.  $(a_{21} \times b_{11}) + (a_{22} \times b_{21}) + (a_{23}$
- ☐ d.  $(a_{21} \times b_{12}) + (a_{22} \times b_{22}) + (a_{23}$

[Clear my choice](#)

Flag question

$a_{m \times n}$

is column matrix contains  $m$  column

Select one:

☐ True

☒ False

Question 17

Answer saved

Marked out of 2

Remove flag

The determinant of zero matrix of order  $(2 \times 3)$  is zero

Select one:

☒ True

☒ False

Question 18

Not yet answered

Marked out of 9

Flag

Using Lagrange's interpolation formula to find  $y(10)$  from the following table:

$x$	5	6	9	11
$y$	12	13	14	16

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1 2

4 5

7 8

10 11

13 14

16 17

19 20

22

Finish attempt

Time left 0:39

ENG





Solve  $2x^3 - 2.5x - 5 = 0$  for the root in  $[1, 2]$  by Newton Raphson method using  $x_0 = 2$

The value for  $X_1$  after the first iteration 1.6601046324 1.7209302187

The value for  $X_2$  after the second iteration 1.7209302187 1.6625729799

The value for  $X_3$  after the third iteration 1.6625729799 1.6601046324



*The solution of system*

$$2x - y = 8$$

$$x - 2y = 4$$

$$(x, y) =$$

Select one:

☒ a. (4,0)

☐ b. (0,4)

☐ c. (0,0)

☐ d. (2,2)

tion 10

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Flag  
question

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

this matrix is a diagonal matrix

Select one:

☒ True

☐ False





Select one

☐ True

☒ False

Question 20

Not yet  
answered

Marked out of

Flag  
question

Solve the following system of equations:

$$6x - 2y + 2z = 4$$

$$4x + 2y = 2$$

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

Select one:

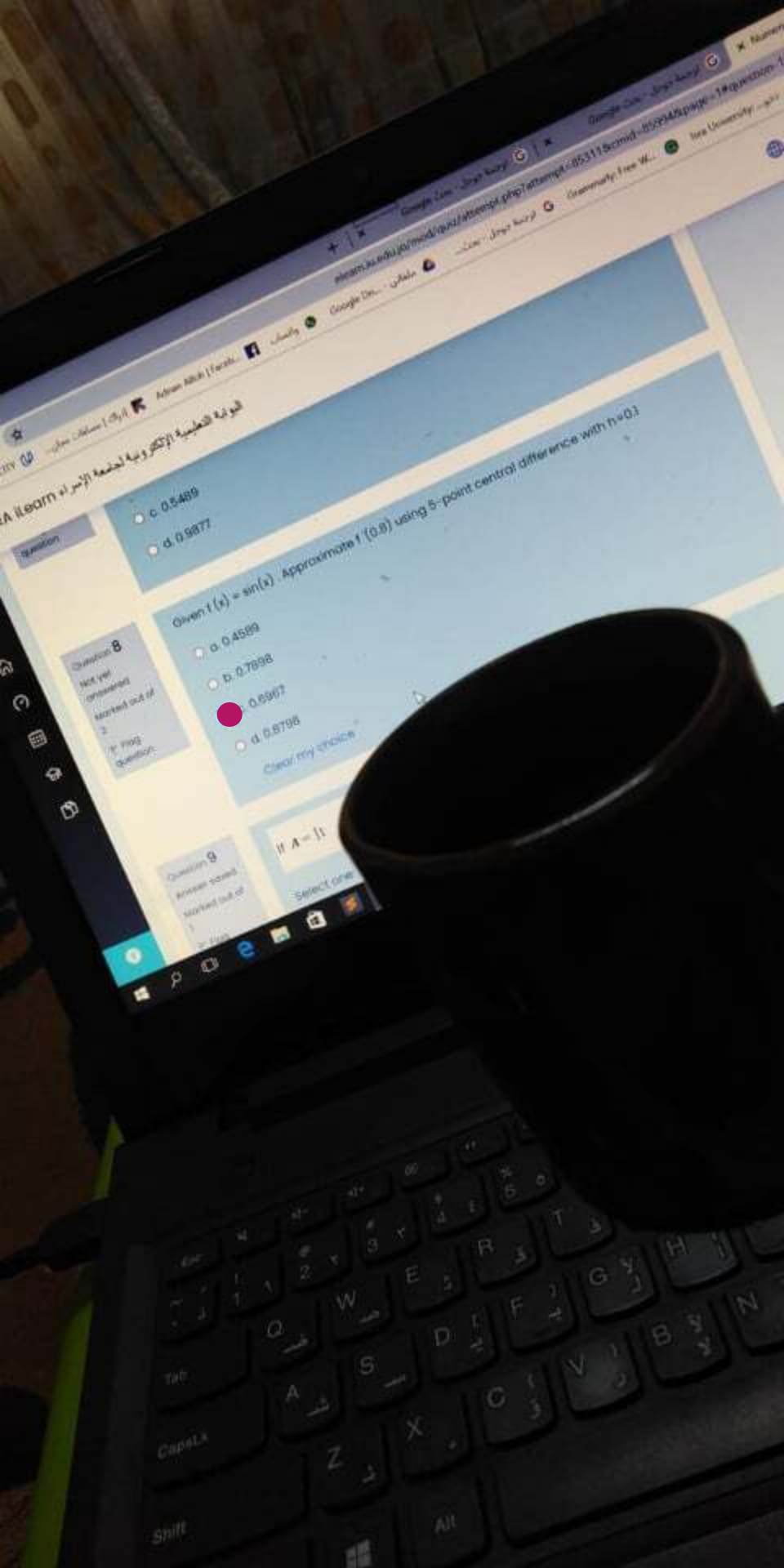
☐ a.  $x = 4$ ,  $y = 4$ , and  $z = -6$

☒ b.  $x = 2$ ,  $y = -3$ , and  $z = -7$

☐ c.  $x = 1$ ,  $y = 4$ , and  $z = 11$

☐ d.  $x = 3$ ,  $y = -5$ , and  $z = -10$





Blackboard LMS

c. 0.5489

d. 0.9877

Given  $f(x) = \sin(x)$ . Approximate  $f'(0.8)$  using 5-point central difference with  $h=0.1$

a. 0.4589

b. 0.7898

c. 0.8967

d. 0.8798

Clear my choice

Question 9

Answer saved

Marked out of 1

on flag

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

Select one

Clear my choice

12

d  
out of

If we want to find a solution for X in the following set of equations using

$$3x + 4y + 5z = 9$$

$$2x + 7y + z = 8$$

$$x + 6y + 4z = 12$$

then x =

Select one:

☐ a.

$$\begin{array}{r|rrr} 9 & 1 & 3 \\ 8 & 5 & 2 \\ 12 & 4 & 1 \\ \hline 3 & 4 & 5 \\ 2 & 7 & 1 \end{array}$$

☐ d. (0,4)

Clear my choice

### Question 8

Not yet  
answered

Marked out of  
4

Flag  
question

Given the following set of discrete data in Table below

$x$	0.2	0.3	0.4	0.5	0.6	0.7
$f(x)$	1.0832	1.1972	1.3771	1.6487	2.0544	2.6644

$f'(0.4)$  using 3-point endpoint formula

2.1285

$f'(0.4)$  using 5-point midpoint formula

2.2007

2.1285

2.2007

### Question 9

Answer saved

If  $A = \begin{bmatrix} 1 & 4 & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} 3 \\ 6 \end{bmatrix}$ , then  $AB = 37$

Question 5

Not yet  
answered

Marked out of

Flag  
question

Find a root of an equation  $f(x) = 2x^3 - 2x - 5$  using False Position method (regula falsi method) at  $[0, 2]$

The value for  $X_2$  using  $X_0 = 1$ ,  $X_1 = 2$  after the first iteration  1.41667

The value for  $X_3$  after the second iteration  1.55359

The value for  $X_4$  after the third iteration  1.58924

 1.58924 1.55359 1.41667

Question 6

Determine the root of the given equation  $x^2 - 3 = 0$  for  $x \in [1, 2]$  using Bisection method



Clear my choice

When simplified with Boolean Algebra  $(x + y)(x + z)$  simplifies to

Select one:

☐ a.  $x + x(y + z)$

☒ b.  $x + yz$

☐ c.  $x(1 + yz)$

☐ d.  $x$

Clear my choice

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رابط مختصر لرفصل البرمجة

Jump to...

here to search

Question 17

Answer saved

Marked out of  
2

Flag  
question

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

this matrix is a diagonal matrix

Select one:

☐ True

☒ False

# rical Analysis

My courses

Numerical Analysis

10 June - 16 June

Numerical Analysis Mid Exam Section I

The equation  $f(x)$  is given as  $x^2 - 4 = 0$ . Considering the initial approximation at  $x = 4$  then the value of  $x_1$  is given as \_\_\_\_\_

- ☒ a. 2
- ☐ b. 1.5
- ☐ c. 2.5
- ☐ d. 1

The dimensions of the following matrix is:



Question **2**

Answer saved

Marked out of  
3

🚩 Flag  
question

The determinant of the following matrix is:

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

Select one:

- ☐ a. -1
- ☒ b. 4
- ☐ c. 3
- ☐ d. 6

[Clear my choice](#)



Question 1

Not yet  
answered

Marked out of  
3

Flag  
question

Find the root of the function  $f(x) = x^3 - x - 1$  using secant method with

$x_0 = 0$  and  $x_1 = 1$

- ☐ a.  $x_2 = 2.86667$
- ☒ b.  $x_2 = 1.16667$
- ☐ c.  $x_2 = 2.36667$
- ☐ d.  $x_2 = 1.96667$

Clear my choice



Flag question

The bisection method of finding roots of non linear equations falls under the category of an ----- method

Select one:

- ☐ a. Graphical
- ☐ b. open
- ☐ c. random
- ☒ d. bracketing

both an iterative method and a bracketing

Question 2

Not yet answered

Marked out of 2

Flag question

Question 15

Not yet answered

Marked out of 2

Flag question

$$\begin{bmatrix} a_{11} \\ a_{21} \\ \vdots \\ a_{m1} \end{bmatrix}$$

is column matrix contains m  
column

Select one:

- ☐ True
- ☒ False

Question 16

Answer saved

Marked out of 2

Flag question

Question 6

Answer saved

Marked out of  
2

Flag  
question

Given the function  $f(x) = x^3 - 5$  on the interval  $[1, 4]$  Number of iterations needed to find the root using bisection method with error=.0001 is approximated to

Select one:

- ☐ a. 22 times
- ☐ b. 3 times
- ☒ c. 15 times
- ☐ d. 12 times

[Clear my choice](#)

Not yet answered

Marked out of 1

Flag question

given the following non linear equation

$$f(z) = -z + \cos(z) \text{ on } [0.5, \pi/4]$$

and using secant method of solving, given the two starting points

$$z_0 = 0.5 \quad z_1 = 0.7854$$

$$f(z_1) =$$

Answer: -.0783

Previous page

Finish attempt ...

Question 9

Answer saved

Marked out of  
2

Flag  
question

The following matrix is .....

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 3 & 1 & 0 & 0 \\ 6 & 5 & 7 & 0 \\ 2 & 8 & 1 & 3 \end{bmatrix}$$

Select one:

- ☐ a. Diagonal matrix
- ☐ b. Scalar matrix
- ☒ c. Lower triangular matrix
- ☐ d. Row matrix

[Clear my choice](#)



Question **16**

Answer saved

Marked out of  
2

🚩 Flag  
question

for a real continuous function  $f(x)$  ,  $f(a)*f(b)<0$  then the range of  $[a, b]$  for  $f(x)=0$  there is-----

Select one:

- ☒ a. at least one root
- ☐ b. no root
- ☐ c. one root
- ☐ d. three roots

[Clear my choice](#)

Question **19**

Answer saved

Marked out of  
2

🚩 Flag  
question

The bisection method of finding roots of non linear equations falls under the category of an ----- method

Select one:

- ☐ a. random
- ☐ b. Graphical
- ☐ c. open
- ☒ d. bracketing

[Clear my choice](#)



Question 7

Answer saved

Marked out of  
1

Flag  
question

The roots of the equation  $x^2 - 5x + 6 = 0$

Select one:

- ☐ a.  $(-2, 3)$
- ☐ b.  $(2, -3)$
- ☐ c.  $(-2, -3)$
- ☒ d.  $(2, 3)$

Clear my choice

Question 11

Answer saved

Marked out of  
1

Flag  
question

The dimensions of the following matrix is:

$$\begin{bmatrix} 2 & 6 & 1 \\ 4 & 7 & 8 \\ 1 & 0 & 6 \\ 7 & 4 & 2 \\ 6 & 1 & 9 \end{bmatrix}$$

Select one:

☐ a.  $3 \times 5$

☒ b.  $5 \times 3$

☐ c.  $5 \times 15$

☐ d.  $15 \times 3$

[Clear my choice](#)

Question 10

Answer saved

Marked out of  
2

Flag  
question

$$\begin{bmatrix} a_{11} \\ a_{21} \\ \vdots \\ a_{m1} \end{bmatrix}$$

is column matrix contains m column

Select one:

☐ True

☒ False

Question **13**

Answer saved

Marked out of  
1

Flag  
question

The equation  $f(x)$  is given as  $x^2 - 4 = 0$ . Considering the initial approximation at  $x = 4$  then the value of  $x_1$  is given as

-----

- ☐ a. 2
- ☒ b. 2.5
- ☐ c. 1
- ☐ d. 1.5

[Clear my choice](#)

Question 12

Answer saved

Marked out of  
1

Flag  
question

Bisection method can be applied for the function

$$f(x) = x^3 + x - 3$$

at  $[1, 4]$

Select one:

☒ True

☐ False



### Question 10

Not yet answered

Marked out of 1

Flag question

The Newton Raphson method is also called as

-----

- ☐ a. Diameter method
- ☐ b. Chord method
- ☒ c. Tangent method
- ☐ d. Secant

### Question 11

Answer saved

Marked out of 2

Flag question

Question 18

Answer saved

Marked out of  
2

Flag  
question

$$x^2 = 16$$

given the following equation

- ☐ a. No Solution
- ☐ b. (+4,-2)
- ☐ c. (+2,-4)
- ☒ d. (+4,-4)

[Clear my choice](#)



Question **15**

Answer saved

Marked out of  
2

🚩 Flag  
question

**[1 4 4]**

a row matrix with three columns

Select one:

☒ True

☐ False

Using Newton's Forward formula, find  $f(0.1604)$  from the following table.

x	0.160	0.161	0.162
f(x)	0.1593182066	0.1603053541	0.1612923412

$$f(0.1604) = 0.159713084$$

$$f(0.160) = 0.1612923412$$

$$x_0 = 0.1600$$

$$h = 0.001$$



The determinant of zero matrix of order  $(2 \times 3)$  is zero