



NetExam

Sri Lanka Institute of Information Technology

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^2$

a) Is this a one-to-one function?

Yes

No

b) Is this an on to function?

No

b) Does the inverse exist?

Yes

No

b) What is the inverse function?

$f^{-1}(x) = \sqrt{x}$

$f^{-1}(x) = -\sqrt{x}$

$f^{-1}(x) = x^2$

$f^{-1}(x) = x$

$f^{-1}(x) = \frac{1}{x}$

$f^{-1}(x) = \text{not exist}$

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≡ C

Finish

Time

1

EXAM

1

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FEEDBA

23

To buy a computer system, a customer can choose one of 5 monitors, one of 7 keyboards, one of 4 computers and one of 6 printers.

- a) Determine the number of possible systems that a customer can choose from.

Answer = :

- b) Another customer wants to buy a monitor, keyboard and computer only.
Find the possible ways of choosing monitor, keyboard and computer.

Answer = :



Next page

it21099922 Samarasil

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page 11

Sum of the two digits of a two-digit number is 15. When the sum of two and twice the tens digit is divided by 2 gives the unit digit. Write down 2 equations to find the unit digit (Y) and tens digit (X).

(Hint: For 34, 3 is the tens digit and 4 is the unit digit)

$$* X + \boxed{I} * Y = 15$$

$$* X + \boxed{I} * Y = 1$$



a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

≡ Quiz na

Finish attempt

Time left 1:55:



EXAM QUESTI

1 2 3

8 9 10

15 16 17

22



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If $|A| = 43$ then find the cofactor matrix of A.

$$A = \begin{bmatrix} 1 & 2 & 7 \\ 4 & -3 & x \\ 2 & 2 & 5 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

C_{23} Choose... ▾



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

- Yes
- No

EXAM QUEST

1 2

8 9

15 16

22

FEEDBACK

23



Question 1
Not yet answered
Marked out of
200
Flag question

N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = x^4 - 2x + 1$$

Is f a One to one function?

Is f an onto function?

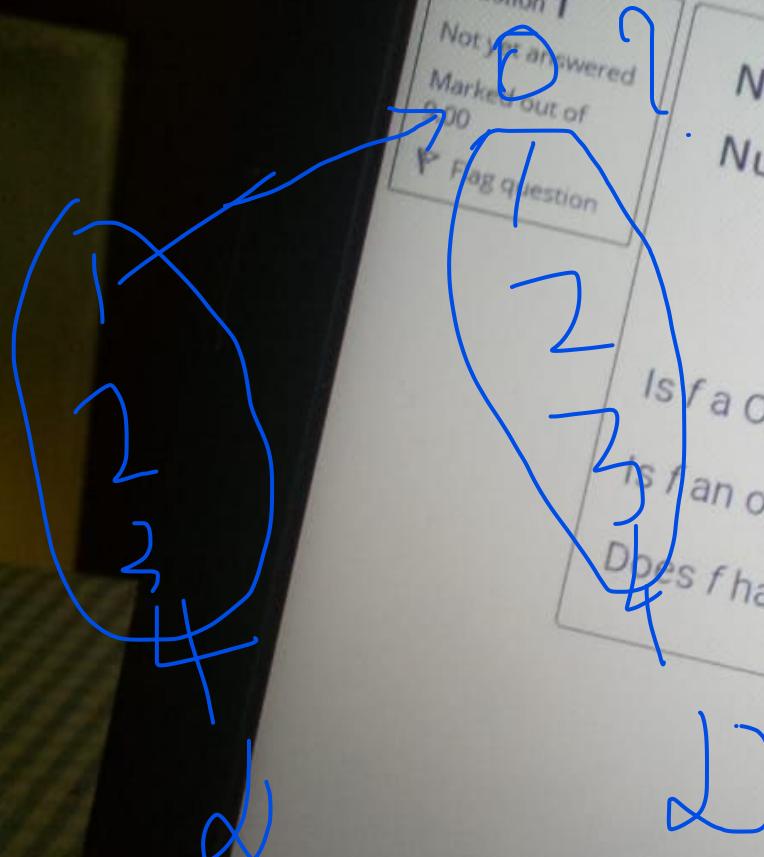
Does f has an inverse function?

No

Choose...

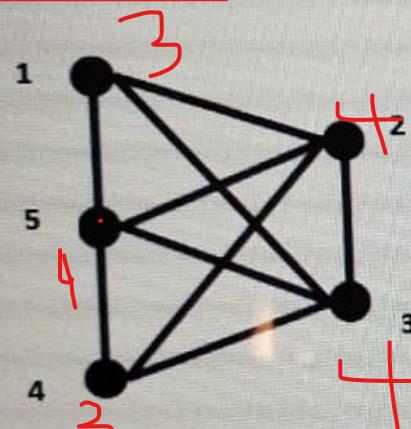
No
Yes

NO
NO
NO



Question 2
Not yet answered
Marked out of 33.00

a) Determine whether the following graph has Euler path, Euler circuit, Hamilton path or Hamilton circuit.



H.p = yes
H.c = yes

Euler Path =

Yes

No

Euler Circuit =

Yes

No

Hamilton Path =

Yes

No

Quiz navigation

Finish attempt ...

Time left 1:56:19

1

EXAM QUESTIONS

1 2 3 4

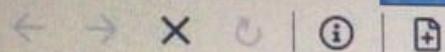
8 9 10 11

15 16 17 18

22

FEEDBACK QUESTIONS

23



b) Consider the following. Find the values of the resulting matrix, when the following elementary row operations are applied in the given order.

$$\begin{bmatrix} 1 & -2 & 3 & 1 & 0 & 0 \\ -2 & 1 & -2 & 0 & 1 & 0 \\ 3 & -3 & 7 & 0 & 0 & 1 \end{bmatrix} \rightarrow \begin{bmatrix} a & b & c & j & k & l \\ d & e & f & m & n & o \\ g & h & i & p & q & r \end{bmatrix}$$

$$1. r'_2 = r_2 + 2r_1$$

$$2. r'_3 = r_3 - 3r_1$$

$$3. r'_3 = r_3 + r_2$$

$$4. r'_3 = r_3 \times \frac{1}{2}$$

$$5. r'_2 = r_2 - 4r_3$$

$$6. r'_2 = r_2 \times -\frac{1}{3}$$

$$7. r'_1 = r_1 - 3r_3$$

$$a = \quad b = \quad c =$$

$$d = \quad e = \quad f =$$

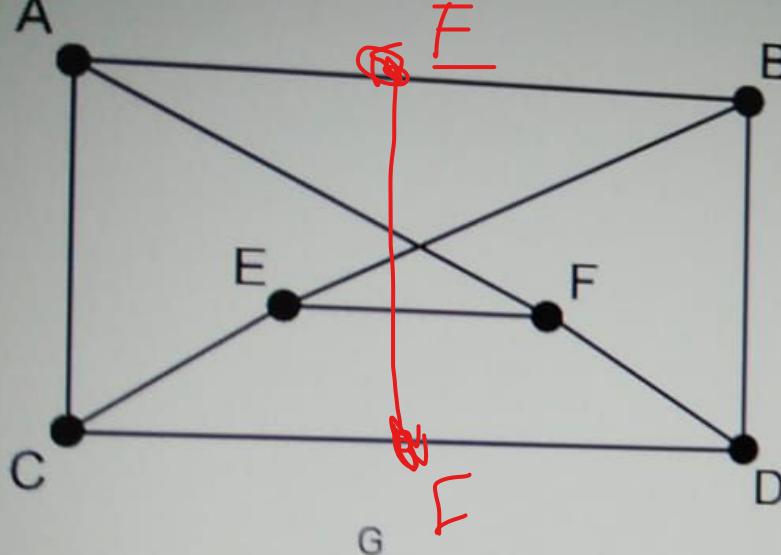
$$g = \quad h = \quad i =$$

$$j = \quad k = \quad l =$$

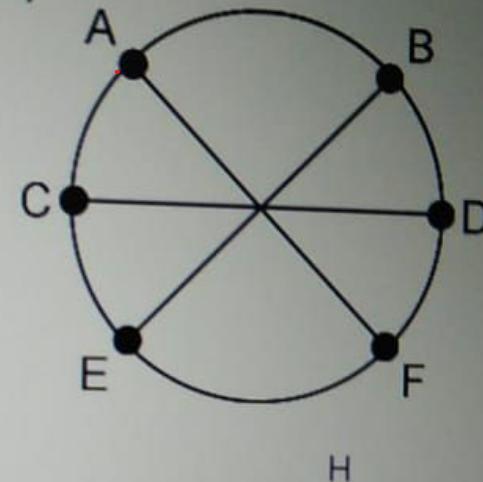
$$m = \quad n = \quad o =$$

Consider the following 2 graphs.

a) A



b)



Number of Components

Number of Vertices

Number of Edges

Degree Sequence

 , , , , , → , , ,

Are they isomorphic?

G and H are no

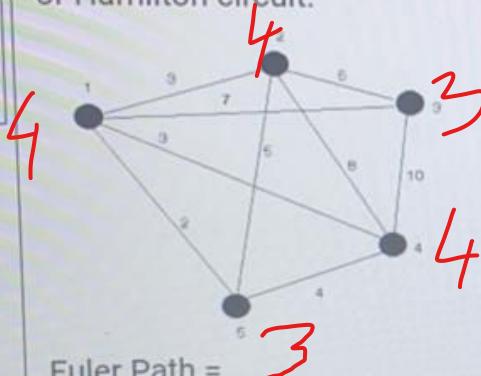


Question 4

Not yet answered

Marked out of
33.00 Flag question

a) Determine whether the following graph has Euler path, Euler circuit, Hamilton path or Hamilton circuit.



Euler Path =

 Yes No

Euler Circuit =

 Yes No

Hamilton Path =

HP = yes

HC= yes

≡ Quiz navigation

Finish attempt ...

Time left 1:24:55

 1

EXAM QUESTIONS

1	2	3	4	5
---	---	---	---	---

8	9	10	11	12
---	---	----	----	----

15	16	17	18	19
----	----	----	----	----

 22

FEEDBACK QUESTION

 23

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{c-qu/r} \quad q = : \boxed{c-pt/r}$$

$$r = : \boxed{d-su/t} \quad s = : \boxed{d-rt/t}$$

$$C = : \boxed{pt+qu}$$

$$d = : \boxed{rt+su}$$

b) Find the cofactor matrix(C) of A.

$$C = \begin{bmatrix} a1 & a2 \\ a3 & a4 \end{bmatrix}$$

$$a1 = : \boxed{} \quad a2 = : \boxed{}$$

$$a3 = : \boxed{} \quad a4 = : \boxed{}$$

c) Find the determinant of A. :

d) Find the adjoint of A.

$$\text{adj } A = \begin{bmatrix} p & q \\ r & s \end{bmatrix}$$

$$p = : \quad q = : \boxed{}$$

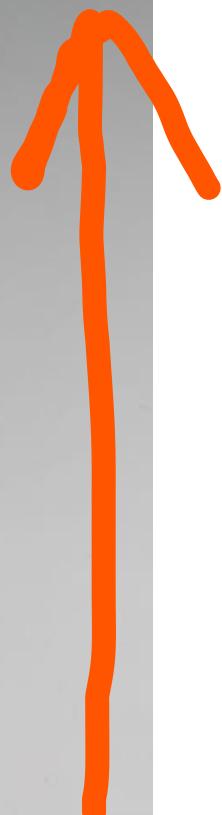
$$r = : \quad s = : \boxed{}$$

d) Find the inverse of A and hence find the price of an adult ticket and

Cost of an adult ticket = : 60

Cost of a child ticket = : 30

page 3





Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

- Yes
- No

EXAM QUEST

1 2

8 9

15 16

22

FEEDBACK

23

Sum of the two digits of a two-digit number
two and twice the tens digit is divided by 2 given
own 2 equations to find the unit digit (Y) and

(Hint: For 34, 3 is the tens digit and 4 is the unit digit)

$$\begin{array}{c} \boxed{} * X + \boxed{} * Y = \boxed{} \\ \downarrow \quad \downarrow \\ \boxed{} * X + \boxed{} * Y = 1 \end{array}$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the hint)

$$Ax =$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} u \\ v \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \quad q = :$$

$$r = : \quad s = :$$

$$c = :$$

$$d = :$$

DELL

Not yet answered

1 out of

33.00

Flag question

b) Determine whether the following graph has Euler path, Euler circuit, Hamilton path, or Hamilton circuit.



Euler Path =

- Yes
 No

Euler Circuit =

- Yes
 No

Hamilton Path =

- Yes
 No

Hamilton Circuit =

- Yes
 No

≡ Quiz

Finish attempt

Time left 1:

1

EXAM QUESTIONS

1

2

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22

FEEDBACK QUESTIONS

23



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Question 8

Not yet answered

Marked out of

0.00

Flag question

Find the following definite integral.

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

$$\int_3^0 15w^4 - 13w^2 + w \, dw = 3w^5 - 13w^3 / 3 + w^2 / 2$$

-1233/2



Answered
of
question

Let $A = \begin{bmatrix} 5 & -2 & 1 \\ 4 & 1 & 0 \\ 1 & -2 & 2 \end{bmatrix}$

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

a = :



5 |

b = :

c = :

d = :

e = :

f = :

g = :

h = :

i = :



Question 5

Not yet answered

Marked out of
9.00

Flag question

N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = n^3 + 3$$

Is f a One to one function?

Y

Is f an onto function?

N

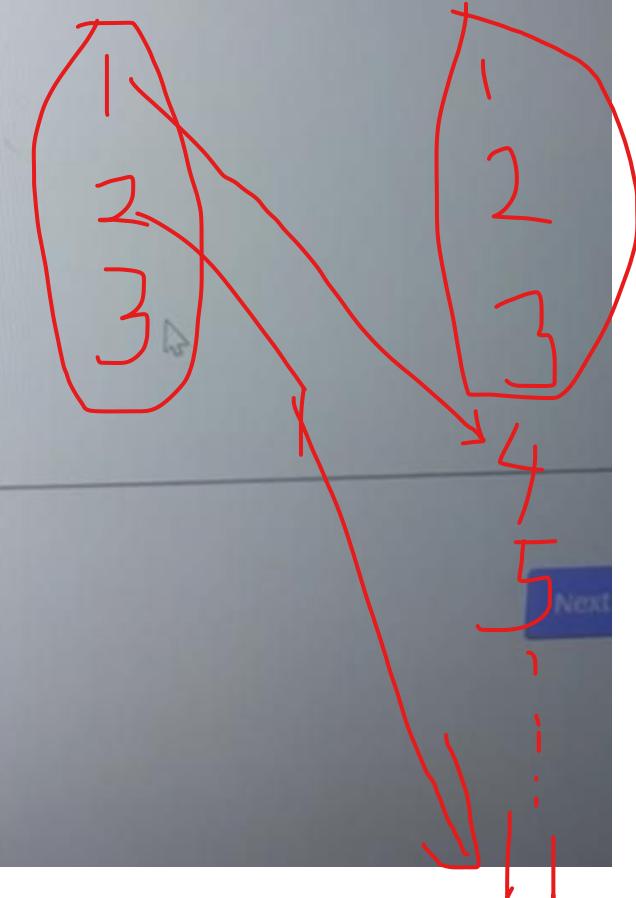
Does f has an inverse function?

Choose... ▾

Choose...

Yes

No



b) Consider the following. Find the values of the resulting matrix, when the following elementary row operations are applied in the given order.

$$\begin{bmatrix} 1 & -2 & 3 & 1 & 0 & 0 \\ -2 & 1 & -2 & 0 & 1 & 0 \\ 3 & -3 & 7 & 0 & 0 & 1 \end{bmatrix} \rightarrow \begin{bmatrix} a & b & c & d & e & f \\ g & h & i & j & k & l \\ m & n & o & p & q & r \end{bmatrix}$$

$$1. r_2' = r_2 + 2r_1$$

$$2. r_3' = r_3 - 3r_1$$

$$3. r_3' = r_3 + r_2$$

$$4. r_3' = r_3 \times \frac{1}{2}$$

$$5. r_2' = r_2 - 4r_3$$

$$6. r_2' = r_2 \times -\frac{1}{3}$$

$$7. r_1' = r_1 - 3r_3$$

$$a = \quad b = \quad c =$$

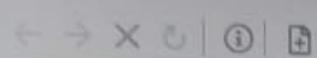
$$d = \quad e = \quad f =$$

John is running a concession stand at a volleyball game. John is selling Noodle packs and Milo packets. Each Noodle pack costs 80LKR and each Milo packet costs 50LKR. At the end John had a total of 5700LKR. John sold a total of 90 Noodle packs and Milo Packets combined. Write down 2 equations to find, number of Noodle packs(x)and Milo packets (y) sold?

$$\boxed{ } * X + \quad * Y =$$

$$90 * X + 1 * Y = 90$$





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Question 10

Not yet answered

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5.00

Flag question

$$f(x) = \frac{x^2 + 1}{5x - 3}$$

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

(Write your answer as a fraction. Eg: 23/2

No spaces should be in the answer)

Answer:



To buy a computer system, a customer can choose one of 7 monitors, one of 6 keyboards, one of 5 computers and one of 3 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = :

b) Another customer wants to buy a monitor, keyboard and computer only.

Find the possible ways of choosing monitor, keyboard and computer.

Answer = :

Next p

Milo packets combined. Write down the equations for Gucci packets (x) and Milo packets (y) sold?

$$[] * X + [] * Y = []$$

$$90 * X + 1 * Y = 90$$

a) Write the above 2 equations in matrix form

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{c+qu} \quad q = :$$

$$r = : \quad s = :$$

$$c = : \quad pt-qu$$

$$d = : \quad rt-su$$



Question 11

yet answered

Marked out of
0.0

Flag question

To buy a computer system, a customer can choose one of 5 monitors, one of 8 keyboards, one of 7 computers and one of 6 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = :

b) Another customer wants to buy 2 monitors and 2 keyboards and a computer.

Find the possible ways of choosing monitor, keyboard and computer.

Answer = :

[Next page](#)

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$x = \frac{|A_1|}{|A|}, A_1 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

$$a = : \boxed{} \quad b = : \boxed{} \quad c = : \boxed{}$$

$$d = : \boxed{} \quad e = : \boxed{} \quad f = : \boxed{}$$

$$g = : \boxed{} \quad h = : \boxed{} \quad i = : \boxed{}$$

$$|A_1| = : \boxed{}$$

$$x = : \boxed{}$$



d) Find y using the cramer's rule.

$$y = \frac{|A_2|}{|A|}, A_2 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

$$a = : \quad b = : \quad c = :$$

$$d = : \quad e = : \quad f = :$$

If $|A| = 128$ then find the cofactor matrix of

$$A = \begin{bmatrix} x & 5 & 7 \\ 2 & 4 & 1 \\ -2 & 8 & 3 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

Find the following definite integral.

$$\int_{-3}^0 |5x - 4| dx$$

(Write the answer as a fraction Eg: 3/2, Please remove spa

Answer:





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Question 8

Not yet answered

Verified answer
0.00

7 Registrations

Consider the following function.

$$f(x) = x^5 + 2x^3 - 5$$

1. Find $f'(-2)$:

2. Find the definite integral of $f(x)$ from -2 to 2:



Let $A = \begin{bmatrix} 5 & -5 & 4 \\ 0 & 3 & 2 \\ 1 & 0 & 7 \end{bmatrix}$

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

a = :

b = :

c = :

d = :

e = :

f = :

g = :

h = :

DELL

on 11

et answered

ed out of

ag question

Consider the following linear system of equations.

$$x + 2y - z = 1$$

$$-x + 3y - z = -4$$

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

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix} \rightarrow \begin{bmatrix} a_3 & b_3 & c_3 & p_3 \\ d_3 & e_3 & f_3 & q_3 \\ g_3 & h_3 & i_3 & r_3 \end{bmatrix}$$

$$r'_2 = r_2 + r_1$$



$$r'_3 = r_3 + 2r_1$$

$$r'_3 = r_3 - r_2$$

$$a = : \boxed{} \quad a_1 = : \boxed{} \quad a_2 = : \boxed{} \quad a_3 = : \boxed{}$$

$$b = : \boxed{} \quad b_1 = : \boxed{} \quad b_2 = : \boxed{} \quad b_3 = : \boxed{}$$

$$c = : \boxed{} \quad c_1 = : \boxed{} \quad c_2 = : \boxed{} \quad c_3 = : \boxed{}$$

$$d = : \boxed{} \quad d_1 = : \boxed{} \quad d_2 = : \boxed{} \quad d_3 = : \boxed{}$$

$$e = : \boxed{} \quad e_1 = : \boxed{} \quad e_2 = : \boxed{} \quad e_3 = : \boxed{}$$

$$f = : \boxed{} \quad f_1 = : \boxed{} \quad f_2 = : \boxed{} \quad f_3 = : \boxed{}$$



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1

Answered
of

Question

Find the following definite integral.

(If your answer is not an integer, then write it as a quotient (eg: 1/2)

$$\int_{-2}^1 5z^2 - 7z + 3 \, dz = \boxed{69/2}$$



acer

F2

F3

F4

F5

F6

F7

F8

F9

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N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = x^3 - 3$$

Is f a One to one function?

Choose... ▾

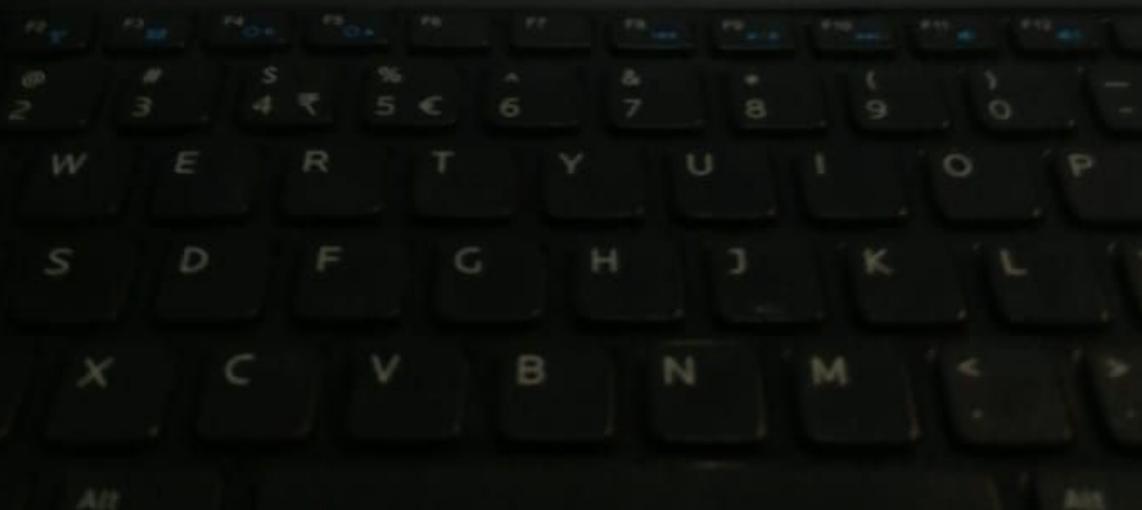
Is f an onto function?

Choose... ▾

Does f has an inverse function?

Choose... ▾

DELL





on 13

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ed out of

lag question

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

Find $B = A^2 - 3A + 2I$

$$B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$



Moodle



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Question 11

Not yet answered
Marked out of
4.00

Flag question

Let $A = \begin{bmatrix} 5 & 2 \\ -1 & 0 \end{bmatrix}$

Find $B = A^2 - 3A + 2I$

$$B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

a = : 10

b = : 4

c = : 2

d = : 0



Dell

a) Convert 6728_{10} to following number systems.

Equivalent Binary Number (x) =

Equivalent Octal Number (y) =

Equivalent Hexadecimal Number (z) =

b) Find:

(Write your answer for 2's complement with 13 digits)

2's Complement of x (x') =

8's Complement of y =

16's Complement of z =

c) Fill in the blanks.

i) $11011001 + 10101110 = \boxed{}$ (Write your answer with 9 digits)

ii) $11011001 - 10101110 = \boxed{}$ (Write your answer with 6 digits)

iii) $11011101 \times 110 = \boxed{}$ (Write your answer with 11 digits)

iv) $11011101 \div 110$

Quotient = (Write your answer with 6 digits)

Remainder = (Write your answer with 3 digits)



Question 14

Not yet answered

Marked out of
9.00

Flag question

If $|A| = 128$ then find the cofactor matrix of A.

$$A = \begin{bmatrix} x & 5 & 7 \\ 2 & 4 & 1 \\ -2 & 8 & 3 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾



n 15

answered

out of

question

Consider the following linear system of equations.

$$2x + y - 3z = 1$$

$$3y - 2z = -1$$

$$3x + y - z = 8$$

a) Represent the above system of linear equations in matrix form $Ax = b$.

$$A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}, x = \begin{bmatrix} x \\ y \\ z \end{bmatrix}, b = \begin{bmatrix} p \\ q \\ r \end{bmatrix}$$



$$a = : \quad \boxed{} \quad b = : \quad \boxed{} \quad c = : \quad \boxed{}$$

$$d = : \quad \boxed{} \quad e = : \quad \boxed{} \quad f = : \quad \boxed{}$$

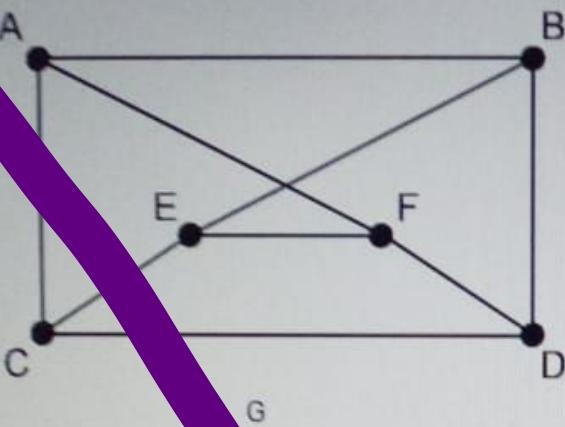
$$g = : \quad \boxed{} \quad h = : \quad \boxed{} \quad i = : \quad \boxed{}$$

$$p = : \quad \boxed{}$$

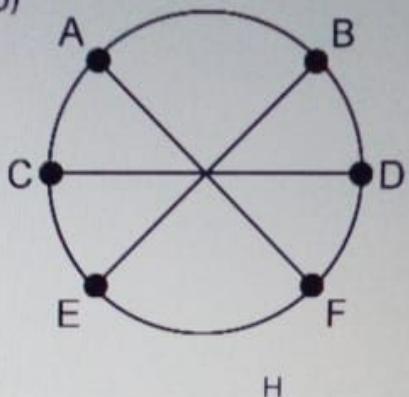
$$q = : \quad \boxed{}$$

Consider the following 2 graphs.

a) A



b)



G

Number of Components

0

Number of Vertices

6

Number of Edges

9

Degree Sequence

3, 3, 3, 3, 3, 3

H

0

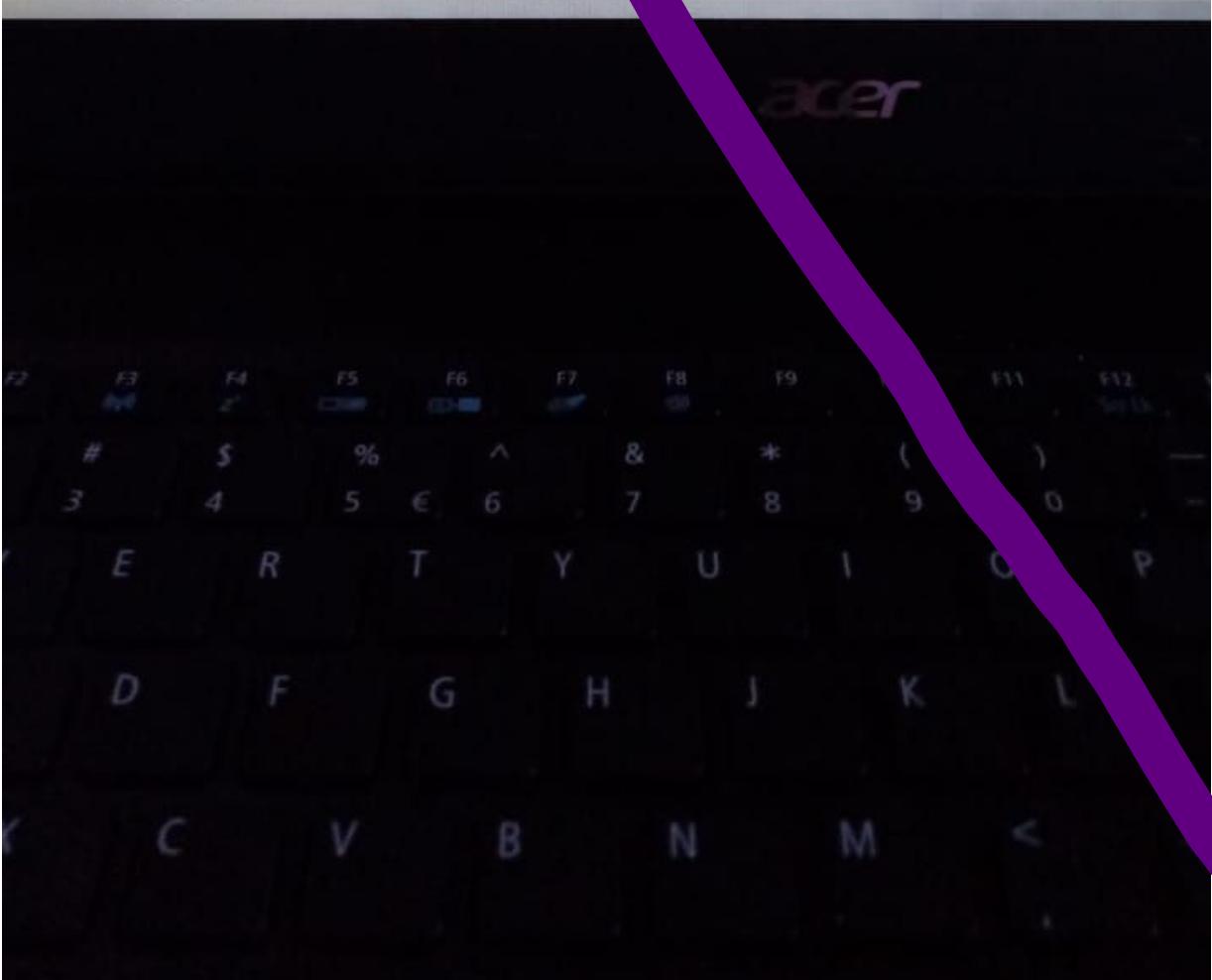
6

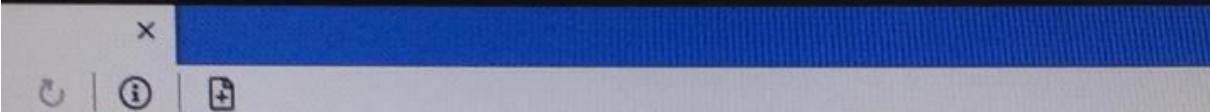
9

Are they isomorphic?

G and H are

isomorphic





Find the derivative of the following function.

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

$$R(z) = \frac{6}{\sqrt{z^3}} + \frac{1}{8z^4} - \frac{1}{3z^{10}}$$

$$R'(z) = \boxed{} z^{\boxed{}} - \boxed{} z^{-5} + (10/3) z^{\boxed{}}$$

Let $A = \begin{bmatrix} 5 & -2 & 1 \\ 4 & 1 & 0 \\ 1 & -2 & 2 \end{bmatrix}$

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$

$$e = :$$

$$f = :$$

$$g = :$$

$$h = :$$

Question 12

Not yet answered

Marked out of
63.00

Flag question

Consider the following linear system of equations.

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

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

$$3x + 2y - z = -1$$

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix} \rightarrow \begin{bmatrix} a_3 & b_3 & c_3 & p_3 \\ d_3 & e_3 & f_3 & q_3 \\ g_3 & h_3 & i_3 & r_3 \end{bmatrix}$$

$$r'_2 = r_2 - 2r_1$$

$$r'_3 = r_3 - 3r_1$$

$$r'_3 = r_3 - \frac{4}{3}r_2$$

$$a = : \quad a_1 = : \quad a_2 = : \quad a_3 = :$$

$$b = : \quad b_1 = : \quad b_2 = : \quad b_3 = :$$

$$c = : \quad c_1 = : \quad c_2 = : \quad c_3 = :$$

$$d = : \quad d_1 = : \quad d_2 = : \quad d_3 = :$$

$$e = : \quad e_1 = : \quad e_2 = : \quad e_3 = :$$

$$f = : \quad f_1 = : \quad f_2 = : \quad f_3 = :$$

Finish attempt

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EXAM QUESTI

1 2 3

8 9 10

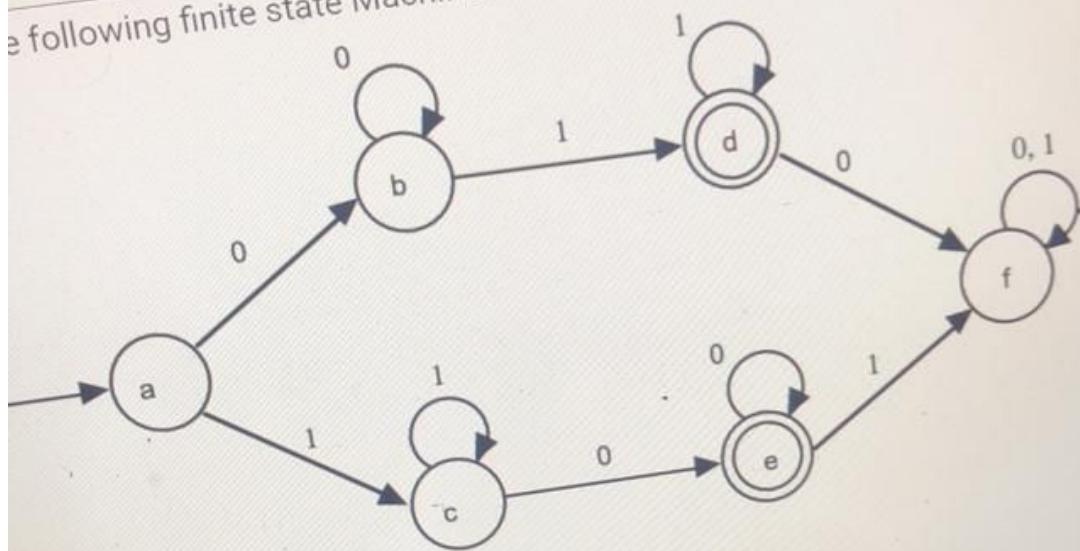
15 16 17

22

FEEDBACK QU

23

the following finite state Machine A.



What is the initial State?

What state does A go if 1000111 input to A in sequence starting from the initial state?

Find $N(d, 1)$

Find $N(f, 0)$

DELL

F10 F9 F8

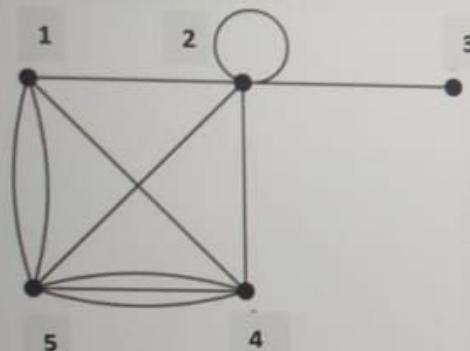


Question 9

Not yet answered

Marked out of
33.00 Flag question

a) Determine whether the following graph has Euler path, Euler circuit, Hamilton path or Hamilton circuit.



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

- Yes

≡ Quiz navigation

Finish attempt ...

Time left 0:09:52

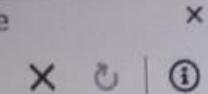
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EXAM QUESTIONS

1	2	3	4	5
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9	10	11	12	13
17	18	19	20	21
2	3	4	5	6

FEEDBACK QUESTION

23



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14
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out of
question

N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = x^3 - 3$$

Is f a One to one function?

Choose... ▾

Is f an onto function?

Choose... ▾

Does f has an inverse function?

Choose... ▾

acer

F1 F2 F3 F4 F5 F6 F7 F8 F9

@ # \$ % ^ & *
2 3 4 5 € 6 7 8

Q W E R T Y U I

page 83 ta

Moodle

1 2 3 4 5

1 $\begin{bmatrix} a & b & c & d & e \\ f & g & h & i & j \\ k & l & m & n & o \\ p & q & r & s & t \\ u & v & w & x & y \end{bmatrix}$

a = : b = : c = : d = : e = :
f = : g = : h = : i = : j = :
k = : l = : m = : n = : o = :
p = : q = : r = : s = : t = :
u = : v = : w = : x = : y = :

c) Degree sequence of a graph is 8, 6, 6, 4, 2, 2, 2, 2.

Does this graph exist?

Yes
 No

Number of Edges of the above graph = :

Does it has an Euler path?

Yes
 No

Does it has an Euler circuit?

Yes
 No

V V



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Simplify the following boolean expression.

$$(\overline{A} + B)(\overline{C} + B)(B + (\overline{B} + \overline{C})) + A + B + C$$

Select one:

- B
- A+B+C
- 1
- A(B+C)
- None of the above

Let $A = \begin{bmatrix} 0 & 1 \\ -1 & 5 \end{bmatrix}$

Find $B = A^2 - 3A + 2I$

$$B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

a = :

b = :

c = :

d = :



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Consider the following function.

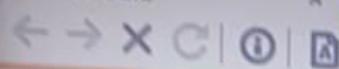
$$g: R \rightarrow R \quad g(x) = \frac{(12 - 3x)}{4}$$

Find $g^{-1}(-3)$

Hint : Find the inverse of g and substitute -3.

Answer: -16

I



Question 1

Not yet answered
Marked out of
9.00

Flag question

Let $A = \begin{bmatrix} 7 & 2 & 0 \\ 1 & 3 & -1 \\ 3 & 2 & 5 \end{bmatrix}$

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

a = :

b = :

c = :

d = :

e = :

f = :

g = :

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2

Answered
out of

question

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x$.

a) Is this a one-to-one function?

Yes

No

b) Is this an onto function?

Yes

No



b) Does the inverse exist?

Yes

No

b) What is the inverse function?

$f^{-1}(x) = x$

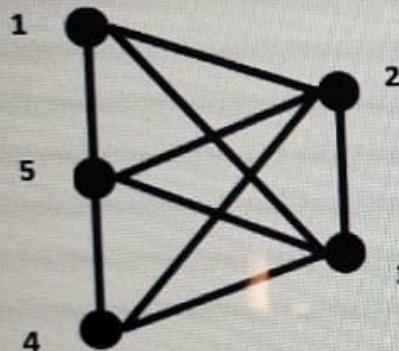
$f^{-1}(x) = 1/x$

$f^{-1}(x) = x-1$

Does not exist

Question 2
Not yet answered
Marked out of
33.00
 Flag question

a) Determine whether the following graph has Euler path, Euler circuit, Hamilton path or Hamilton circuit.



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

≡ Quiz navigation

Finish attempt ...

Time left 1:56:19

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EXAM QUESTIONS

1	2	3	4
8	9	10	11
15	16	17	18
22			
23			

FEEDBACK QUESTIONS

23

Question 1

Not yet answered

Marked out of
48.00

Flag question

Obtain the truth table for the following expression.

$$D = A\bar{B}C + \bar{A}\bar{B}\bar{C} + AB$$

A	B	C	$A\bar{B}C$	$\bar{A}\bar{B}\bar{C}$	AB	D
0	0	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	0	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						
<input type="checkbox"/>						

b) Simplify the above expression (D) using the following boolean identities. In front of each step write the reason (Number of the boolean identity according to following numbers).

Consider the following Boolean identities.

1. Double Complement Law
2. Idempotent Law
3. Identity Law
4. Universal Bound Law
5. Commutative Law
6. Associative Law
7. Distributive Law

page 53 ithiri tika

$p = .$ $q = .$ $r = .$ $s = .$ $t = .$
 $u = :$ $v = :$ $w = :$ $x = :$ $y = :$

c) Degree sequence of a graph is 6, 5, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph =

Does it has an Euler path?

Yes

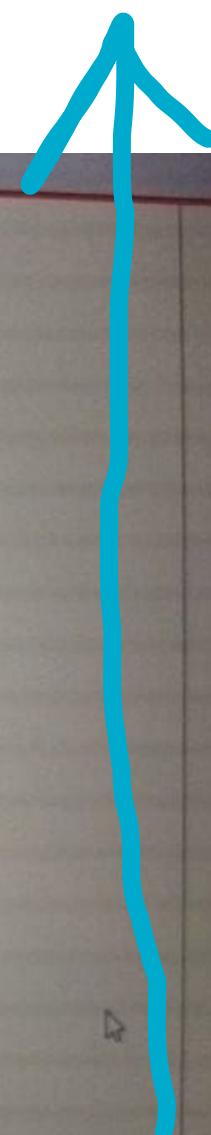
No

Does it has an Euler circuit?

Yes

No

Next



b) Write down the adjacency matrix for the above graph.

$$\begin{array}{ccccc} & 1 & 2 & 3 & 4 & 5 \\ \begin{matrix} 1 \\ 2 \\ 3 \\ 4 \\ 5 \end{matrix} & \left[\begin{matrix} a & b & c & d & e \\ f & g & h & i & j \\ k & l & m & n & o \\ p & q & r & s & t \\ u & v & w & x & y \end{matrix} \right] \end{array}$$

a = : b = : c = : d = : e = :

f = : g = : h = : i = : j = :

k = : l = : m = : n = : o = :

p = : q = : r = : s = : t = :

u = : v = : w = : x = : y = :

c) Degree sequence of a graph is 6, 5, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :



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lag question

Consider the following linear system of equations.

$$x + 2y - z = -1$$

$$3y + z = 2$$

$$2x + y - z = 0$$

1. Write down the augmented matrix for the above system of linear equations and reduce it to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix}$$

$$r'_3 = r_3 - 2r_1 \quad . \quad r'_3 = r_3 + r_2$$

$$a = : \boxed{} \quad a_1 = : \boxed{} \quad a_2 = : \boxed{}$$

$$b = : \boxed{} \quad b_1 = : \boxed{} \quad b_2 = : \boxed{}$$

$$c = : \boxed{} \quad c_1 = : \boxed{} \quad c_2 = : \boxed{}$$

$$d = : \boxed{} \quad d_1 = : \boxed{} \quad d_2 = : \boxed{}$$

$$e = : \boxed{} \quad e_1 = : \boxed{} \quad e_2 = : \boxed{}$$

$$f = : \boxed{} \quad f_1 = : \boxed{} \quad f_2 = : \boxed{}$$

$$g = : \boxed{} \quad g_1 = : \boxed{} \quad g_2 = : \boxed{}$$

$$h = : \boxed{} \quad h_1 = : \boxed{} \quad h_2 = : \boxed{}$$

$$i = : \boxed{} \quad i_1 = : \boxed{} \quad i_2 = : \boxed{}$$

$$p = : \boxed{} \quad p_1 = : \boxed{} \quad p_2 = : \boxed{}$$

$$q = : \boxed{} \quad q_1 = : \boxed{} \quad q_2 = : \boxed{}$$

$$r = : \boxed{} \quad r_1 = : \boxed{} \quad r_2 = : \boxed{}$$

2. To find the solution, of the above linear system, obtain the three equations from the echelon form.

From row 3,

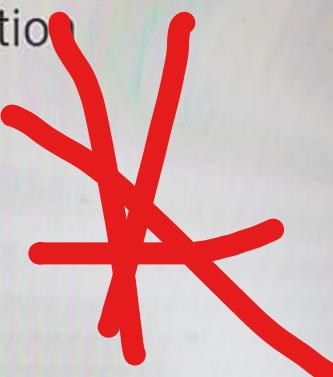
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≡ Quiz navigation

Finish attempt ...

Time left 1:51:41



EXAM QUESTIONS

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22		

Next page

FEEDBACK QUESTION

23

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b) Write down the adjacency matrix for the above graph.

	1	2	3	4	5
1	b	c	d	e	
2	f	g	h	i	j
3	k	l	m	n	o
4	p	q	r	s	t
5	u	v	w	x	y

a = : b = : c = : d = : e = :

f = : g = : h = : i = : j = :

k = : l = : m = : n = : o = :

p = : q = : r = : s = : t = :

u = : v = : w = : x = : y = :

c) Degree sequence of a graph is 6, 5, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :



Question 2

Not yet answered

Marked out of
0.00

* Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(12 - 3x)}{4}$$

Find $g^{-1}(-3)$

Hint : Find the inverse of g and substitute -3.

Answer: 4/21

I

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

a = :

b = :

c = :

d = :

e = :

f = :

g = :

h = :

i = :

EXAM QUESTIONS

1 2 3

8 9 10

15 16 17 18

22

FEEDBACK QUESTIONS

23

$p = : \square$ $q = : \square$ $r = : \square$ $s = : \square$
 $u = : \square$ $v = : \square$ $w = : \square$ $x = : \square$ $y = : \square$

c) Degree sequence of a graph is 6, 5, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

- Yes
- No

Number of Edges of the above graph = :

Does it has an Euler path?

- Yes
- No

Does it has an Euler circuit?

- Yes
- No

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Question 3

Not yet answered

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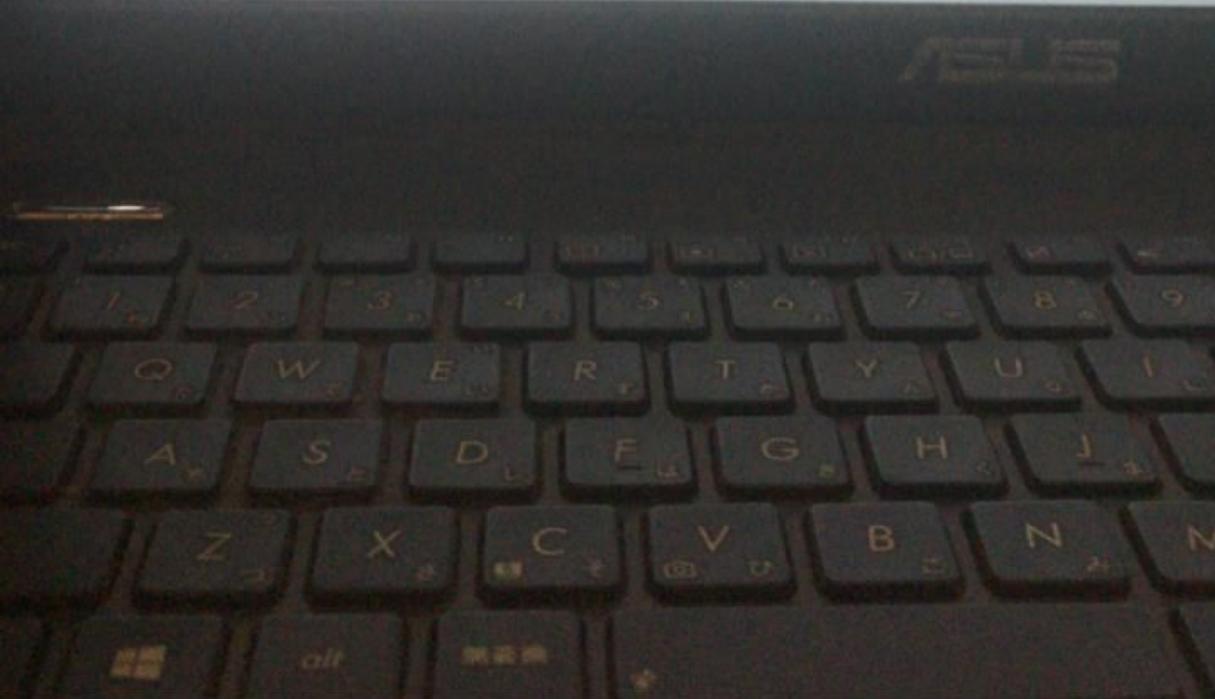
Flag question

Consider the following function.

$$f(x) = x^3 - 2x^2 + 5$$

1. Find $f'(-3)$:

2. Find the definite integral of $f(x)$ from -3 to 3 :



Question 3

Not yet answered

Marked out of
8.00

Flag question

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^2 - 1$

a) Is this a one-to-one function?

- Yes
- No

b) Is this an on to function?

- Yes
- No

b) Does the inverse exist?

- Yes
- No

b) What is the inverse function?

- $f^{-1}(x) = x^{1/2}$
- $f^{-1}(x) = 1/x^2$
- $f^{-1}(x) = x-1$
- Does not exist

Quiz navigation

Finish attempt ...

Time left 1:32:28



EXAM QUESTIONS

1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22				

FEEDBACK QUESTION





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Christy is selling tickets for an Exhibition. On the first day of the exhibition 35 adult tickets and 30 child tickets were sold for a total of 3000LKR. On the second day Christy got a revenue of 4200LKR by selling 50 adult tickets and 40 child tickets. Find the price of an adult ticket(X) and the price of a child ticket(Y).

$$35 * X + 30 * Y = 3000$$

$$50 * X + 40 * Y = 4200$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$

$$r = : \boxed{} \quad s = : \boxed{}$$

$$c = : \boxed{} \quad d = : \boxed{}$$

b) Find the cofactor matrix(C) of A.

$$C = \begin{bmatrix} a1 & a2 \\ a3 & a4 \end{bmatrix}$$

$$a1 = : \boxed{} \quad a2 = : \boxed{}$$

$$a3 = : \boxed{} \quad a4 = : \boxed{}$$

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page 63 n

b) Write down the adjacency matrix for the above graph

	1	2	3	4	5
1	a	b	c	d	e
2	f	g	h	i	j
3	k	l	m	n	o
4	p	q	r	s	t
5	u	v	w	x	y

$a = :$ $b = :$ $c = :$ $d = :$ $e = :$
 $f = :$ $g = :$ $h = :$ $i = :$ $j = :$
 $k = :$ $l = :$ $m = :$ $n = :$ $o = :$
 $p = :$ $q = :$ $r = :$ $s = :$ $t = :$
 $u = :$ $v = :$ $w = :$ $x = :$ $y = :$

c) Degree sequence of a graph is 8, 6, 6, 4, 2, 2, 2, 2.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :

Does it has an Euler path?

Yes

No

Does it has an Euler circuit?

Simplify the following boolean expression.

$$(\overline{A + B})(\overline{C + B})(B + (\overline{B + C})) + A + B + C$$

Select one:

- B
- A+B+C
- 1
- A(B+C)
- None of the above

(Simplify your answer as much as possible. eg: Do not keep 2/6, write 1/3 (No common factors should be there in numerator and denominator))

a) Write down the above three equations in matrix form $Ax = b$.

$$A = \begin{bmatrix} & & \\ & & \\ & & \\ & & \\ & & \end{bmatrix}$$

$$b = \begin{bmatrix} \\ \\ \\ \end{bmatrix}$$

b) Consider the following. Find the values of the resulting matrix, when the following elementary row operations are applied in the given order.

$$\begin{bmatrix} 1 & -2 & 3 & 1 & 0 & 0 \\ -2 & 1 & -2 & 0 & 1 & 0 \\ 3 & -3 & 7 & 0 & 0 & 1 \end{bmatrix} \rightarrow \begin{bmatrix} a & b & c & j & k & l \\ d & e & f & m & n & o \\ g & h & i & p & q & r \end{bmatrix}$$

$$1. r'_2 = r_2 + 2r_1$$

$$2. r'_3 = r_3 - 3r_1$$

$$3. r'_1 = r_1 + r_2$$



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d out of
ag question

Green Leaf landscaping company got two orders from a Kindergarten. The first order was for 15 bushes and 8 trees, and the cost was 3850LKR. The second order was for 8 bushes and 5 trees, and the cost was 2200LKR. Write down 2 equations to find the cost of a bush (X) and a tree (Y).

$$\boxed{} * X + \boxed{} * Y = \boxed{}$$

$$\boxed{} * X + \boxed{} * Y = 2200$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \quad q = :$$

$$r = : \quad s = :$$

$$c = :$$





Consider the following linear system of equations.

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

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

$$3x - 3y + 7z = -2$$

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

(Simplify your answer as much as possible. eg: Do not keep 2/6, write 1/3 (No common factors should be there in numerator and denominator))

- a) Write down the above three equations in matrix form $Ax = b$.

$$A = \begin{matrix} & y & z \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \\ \boxed{} & \boxed{} & \boxed{} \end{matrix}$$

$$b = \begin{matrix} 1 \\ 2 \\ 1 \end{matrix}$$

- b) Consider the following. Find the values of the resulting matrix, when the following elementary row operations are applied in the given order.



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Question 7

Not yet answered
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Flag question

$$f(x) = \frac{x^2 + 7}{3x - 1}.$$

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

Answer:



a) Convert 7452_{10} to following number systems.

Equivalent Binary Number (x) =

Equivalent Octal Number (y) =

Equivalent Hexadecimal Number (z) =

b) Find:

(Write your answer for 2's complement with 13 digits)

2's Complement of x (x') =

8's Complement of y =

16's Complement of z =

c) Fill in the blanks.

i) $10101010 + 11001100 =$ (Write your answer with 9 digits)

ii) $11001100 - 10101010 =$ (Write your answer with 6 digits)

iii) $1001100 \times 1010 =$ (Write your answer with 10 digits)

iv) $1001100 \div 101$

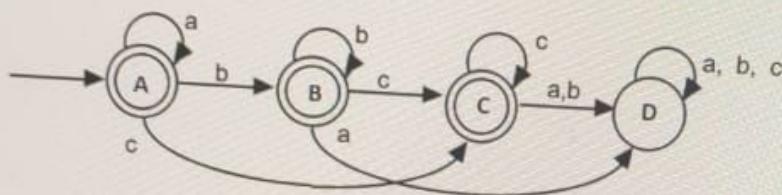
Quotient = (Write your answer with 4 digits)

Remainder = (Write your answer with 2 digits)

NetExam

Sri Lanka Institute of Information Technology

Consider the following finite state Machine A.



What is the initial State?

To what state does A go if abcacbac input to A in sequence starting from the initial state?
Find $N(C, a)$

Find $N(D, b)$

Choose...

Choose...

Choose...

Choose...

a) Convert 7452_{10} to following number systems.

Equivalent Binary Number (x) =

Equivalent Octal Number (y) =

Equivalent Hexadecimal Number (z) =

b) Find:

(Write your answer for 2's complement with 13 digits)

2's Complement of x (x') =

8's Complement of y =

16's Complement of z =

c) Fill in the blanks.

i) $10101010 + 11001100 =$ (Write your answer with 9 digits)

ii) $11001100 - 10101010 =$ (Write your answer with 6 digits)

iii) $1001100 \times 1010 =$ (Write your answer with 10 digits)

iv) $1001100 \div 101$

Quotient = (Write your answer with 4 digits)

Remainder = (Write your answer with 2 digits)



on 8

t answered

d out of

g question

Simplify the following boolean expression.

$$\overline{(A + B)}(\overline{C + B + \bar{C}})(B + (\bar{C} + B + C)) + A + B + C$$

Select one:

- B
- A+B+C
- 1
- A(B+C)
- None of the above

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Let $A = \begin{bmatrix} 5 & -2 & 1 \\ 4 & 1 & 0 \\ 1 & -2 & 2 \end{bmatrix}$

and $B=3A$; $C=B+2A-5I$. Find matrix D such that $D=2A+B-C$.

Assume I is the identity matrix.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

a = :

b = :

c = :

d = :

e = :

f = :

g = :

h = :

i = :

Not yet answered

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8.00

 Flag question

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^3$.

a) Is this a one-to-one function?

- Yes
- No

b) Is this an onto function?

- Yes
- No

b) Does the inverse exist?

- Yes
- No

b) What is the inverse function?

- $f^{-1}(x) = x^{1/3}$
- $f^{-1}(x) = 1/x^3$
- $f^{-1}(x) = x/3$
- Does not exist



on 9

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g question

Consider the following function.

$$f(x) = x^4 - x^2 + 20$$

1. Find $f'(-4)$:
2. Find the definite integral of $f(x)$ from -3 to 3 :
(Round your answer to one decimal place)

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**Question 9**

Not yet answered

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Flag question

Consider the following linear system of equations.

$$x + 2y - z = -1$$

$$3y + z = 2$$

$$2x + y - z = 0$$

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix}$$

$$r'_3 = r_3 - 2r_1 \quad , \quad r'_3 = r_3 + r_2$$

$$a = : \quad a_1 = : \quad a_2 = :$$

$$b = : \quad b_1 = : \quad b_2 = :$$

$$c = : \quad c_1 = : \quad c_2 = :$$

$$d = : \quad d_1 = : \quad d_2 = :$$

$$e = : \quad e_1 = : \quad e_2 = :$$

$$f = : \quad f_1 = : \quad f_2 = :$$

$$g = : \quad g_1 = : \quad g_2 = :$$

$$h = : \quad h_1 = : \quad h_2 = :$$

$$i = : \quad i_1 = : \quad i_2 = :$$



Finish attempt...

Time left 0:46:09



EXAM QUESTIONS

1 2 3 4

8 9 10 11

15 16 17 18



FEEDBACK QUESTION



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15 16 17

22

FEEDBACK QU

23

$$Ax = b$$

$$\begin{bmatrix} p & q \\ r & s \end{bmatrix} x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

p = : .

r = : s = :

. c = :

d = :

b) Find the cofactor matrix(C) of A.

$$C = \begin{bmatrix} a1 & a2 \\ a3 & a4 \end{bmatrix}$$

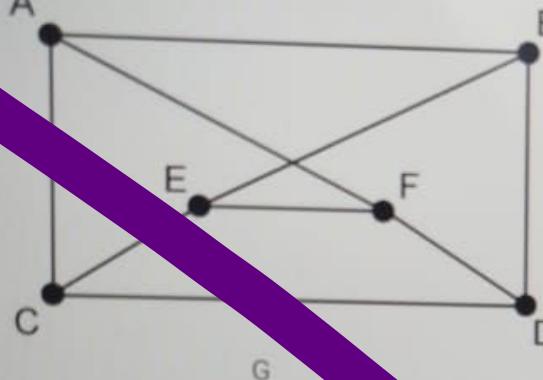
a1 = : a2 = :

a3 = : a4 = :

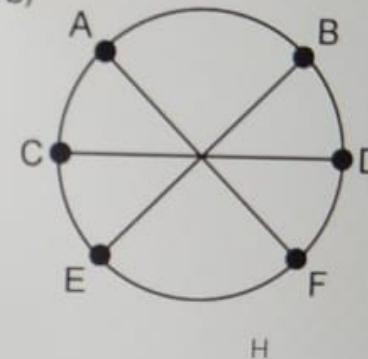
c) Find the determinant of A. :

Consider the following 2 graphs.

a)



b)



Number of Components

Number of Vertices

Number of Edges

Degree Sequence

6	6	6	6	6	6
---	---	---	---	---	---

Are they isomorphic?

G and H are

- isomorphic
- Not Isomorphic

Quiz navigation

Finish attempt...

Time left 0:48:43



EXAM QUESTIONS

1	2	3	4	5	6
▲					
9	10	11	12	13	14
17	18	19	20	21	22

FEEDBACK QUESTION

23

Question 6

Not yet answered

Marked out of
22.00

Flag question

John is running a concession stand at a volleyball game. John is selling Noodle packs and Milo packets. Each Noodle pack costs 80LKR and each Milo packet costs 50LKR. At the end John had a total of 5700LKR. John sold a total of 90 Noodle packs and Milo Packets combined. Write down 2 equations to find, number of Noodle packs(x)and Milo packets (y) sold?

$$\boxed{} * X + \boxed{} * Y = \boxed{}$$

$$\boxed{} * X + \boxed{} * Y = 90$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \qquad q = :$$

$$r = : \qquad s = :$$

c) Find the determinant of A. :

d) Find the adjoint of A.

$$\text{adj } A = \begin{bmatrix} p & q \\ r & s \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$

$$r = : \boxed{} \quad s = : \boxed{}$$

d) Find the inverse of A and hence find the number of Noodle Packs and number of Milo Packets.

Number of Noodle Packs = :

Number of Milo Packets = :





Question 14

Not yet answered

Marked out of
100

Flag question

To buy a computer system, a customer can choose one of 8 monitors, one of 8 keyboards, one of 9 computers and one of 6 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = :



b) Another customer wants to buy a 2 monitors or 2 keyboards or 3 computers.

Find the possible ways of choosing monitor, keyboard and computer.

Answer = :

[Next page](#)

1

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23



NetExam

Sri Lanka Institute of Information Technology

2

solved

it of

question

$$f(x) = \left(\frac{x-1}{x+3}\right)^3$$

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

Answer:



Consider the following function.

$$f(x) = x^4 - x^2 + 20$$

1. Find $f'(-4)$:

2. Find the definite integral of $f(x)$ from -3 to 3 :

(Round your answer to one decimal place)

DELL



Find the following definite integral.

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

$$\int_{-2}^1 5z^2 - 7z + 3 \, dz = \boxed{69/2}$$



Question 11

Not yet answered

Marked out of
22.00

Flag question

Christy is selling tickets for an Exhibition. On the first day of the exhibition 35 adult tickets and 30 child tickets were sold for a total of 3000LKR. On the second day Christy got a revenue of 4200LKR by selling 50 adult tickets and 40 child tickets. Find the price of an adult ticket(X) and the price of a child ticket(Y).

$$\boxed{ } * X + \boxed{ } * Y = \boxed{ }$$

$$\boxed{ } * X + \boxed{ } * Y = 4200$$

- a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \quad q = :$$

≡ Q

Finish

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EXAM C

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FEEDBACK

23

Consider the following 2 graphs.

Graph G:

```
graph LR; A((A)) --- B((B)); A --- C((C)); B --- C; B --- D((D)); B --- E((E)); C --- D; C --- E; C --- F((F)); D --- E; D --- F; E --- F;
```

Graph H:

```
graph TD; A((A)) --- B((B)); A --- C((C)); A --- D((D)); A --- E((E)); A --- F((F)); B --- C; B --- D; B --- E; B --- F; C --- D; C --- E; C --- F; D --- E; D --- F; E --- F;
```

Number of Components: G (6), H (1)

Number of Vertices: G (6), H (6)

Number of Edges: G (9), H (9)

Degree Sequence: G (3, 3, 3, 3, 3, 3), H (3, 3, 3, 3, 3, 3)

Are they isomorphic?

G and H are

isomorphic

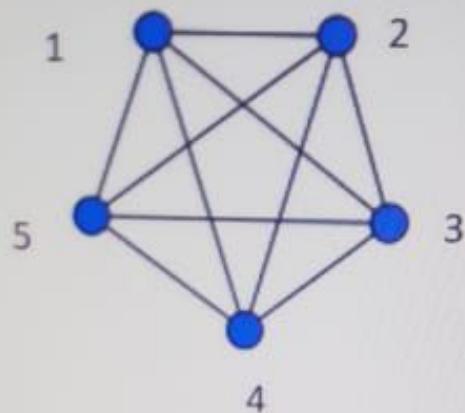
Acer

Not yet answered

Marked out of
3.00

Reg question

Hamilton circuit.



Euler Path =

- Yes
 No

Euler Circuit =

- Yes
 No

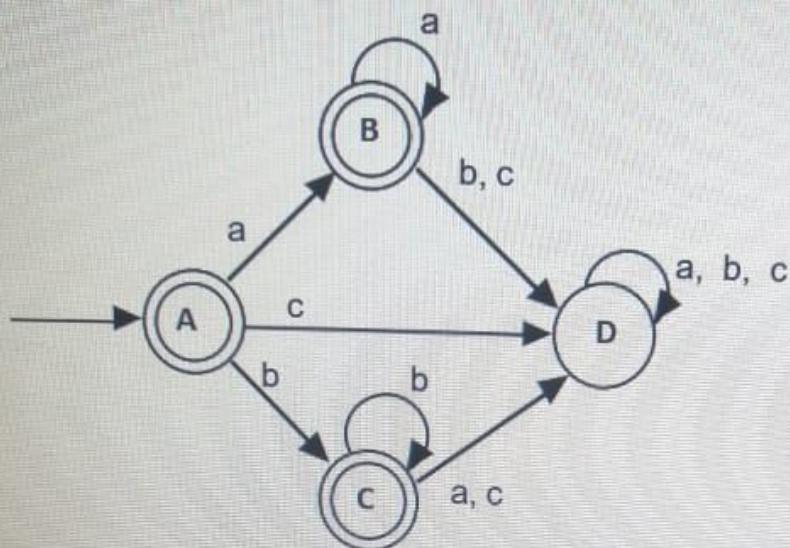
Hamilton Path =

- Yes
 No

Hamilton Circuit =

- Yes
 No

Consider the following finite state Machine A.



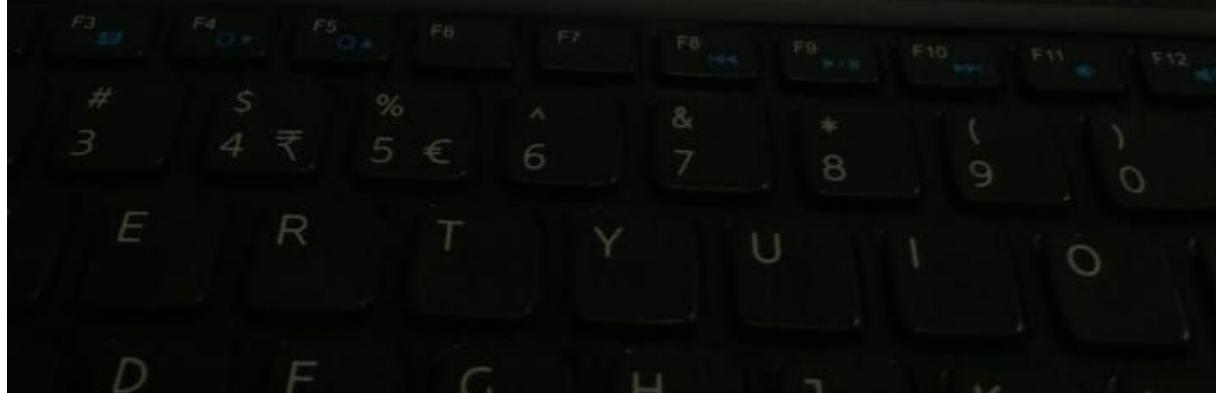
What is the initial State?

To what state does A go if abcacbac input to A in sequence starting from the initial state?

Find N(C, a)

Find N(D, b)

DELL



Question 11

Not yet answered

Marked out of
22.00

Flag question

Green Leaf landscaping company got two orders from a Kindergarten. The first order was for 15 bushes and 8 trees, and the cost was 3850LKR. The second order was for 8 bushes and 5 trees, and the cost was 2200LKR. Write down 2 equations to find the cost of a bush (X) and a tree (Y).

$$\boxed{} * X + \boxed{} * Y = \boxed{}$$

$$\boxed{} * X + \boxed{} * Y = 2200$$

- a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$

$$r = : \boxed{} \quad s = : \boxed{}$$

$$c = : \boxed{}$$

$$d = : \boxed{}$$

Quiz nav

Finish attempt ..

Time left 0:26:45



EXAM QUESTION

1	2	3
---	---	---

8	9	10
---	---	----

15	16	17
----	----	----

22

FEEDBACK QUESTION

23

**Question 10**

Not yet answered

Marked out of
10.00

Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(9+x)}{3}$$

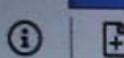
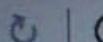
Find $g^{-1}(2)$

Hint : Find the inverse of g and substitute 2.

Answer: [Next page](#)



x



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Sri Lanka Institute of Information Technology

Consider the following linear system of equations.

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

$$3x + 2y - z = -1$$

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

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

(Simplify your answer as much as possible. eg: Do not keep 2/6, write 1/3 (No common factors should be there in numerator and denominator))

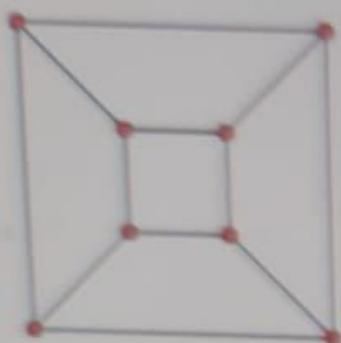
- a) Write down the above three equations in matrix form $Ax = b$.

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

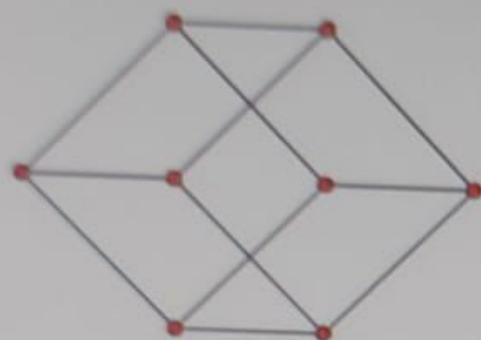
$$b = \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$$



Consider the following 2 graphs.



G



H

Number of Components

Number of Vertices

 12

Number of Edges

 8

Degree Sequence

6	6	6	6	6	6	6
---	---	---	---	---	---	---

Are they isomorphic?

H

6	6	6	6
---	---	---	---

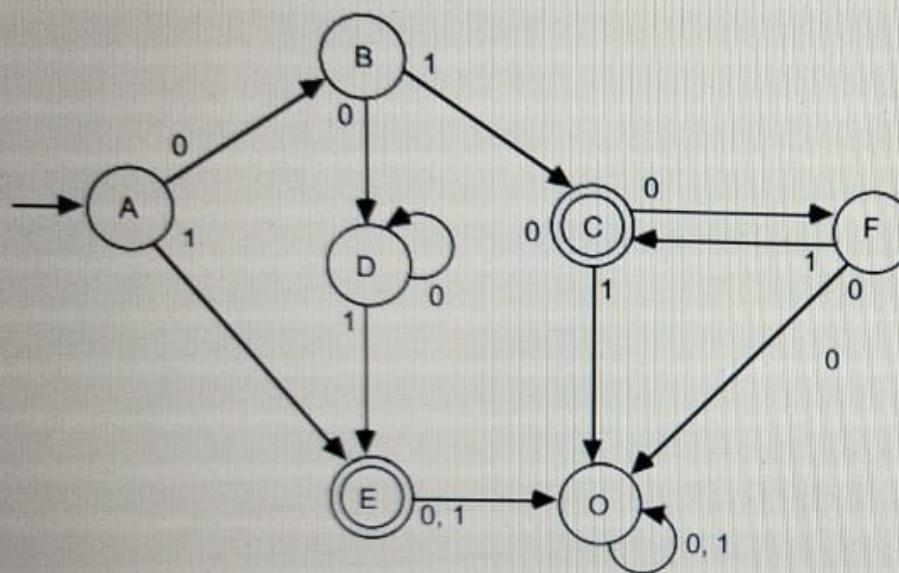
tion 13

yet answered

ted out of

flag question

Consider the following finite state Machine A.



What is the initial State?

To what state does A go if 110101100 input to A in sequence starting from the initial state?

Find $N(C, 1)$

Find $N(F, 0)$

Choose...

O

B

F

D

A

C

E

Choose...

Choose...

Choose...

Choose...

≡ Quiz naviga

Finish attempt ...

Time left 0:20:49

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EXAM QUESTIONS

1 2 3 4

8 9 10 11

15 16 17 18

22

FEEDBACK QUESTION

23

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^2 + 6$

a) Is this a one-to-one function?

Yes

No

b) Is this an on to function?

Yes

No

b) Does the inverse exist?

Yes

No

b) What is the inverse function?

$f^{-1}(x) = (x-6)^{(1/2)}$

$f^{-1}(x) = 1/(x-6)^{1/2}$

$f^{-1}(x) = (x-6)^2$

Does not exist



DELL





Time: 15

Unanswered

Attempted

Log question

Simplify the following boolean expression.

$$(A + \overline{B})(\overline{B} + C + B)(B + (\overline{B} + C + B)) + A + B + C$$

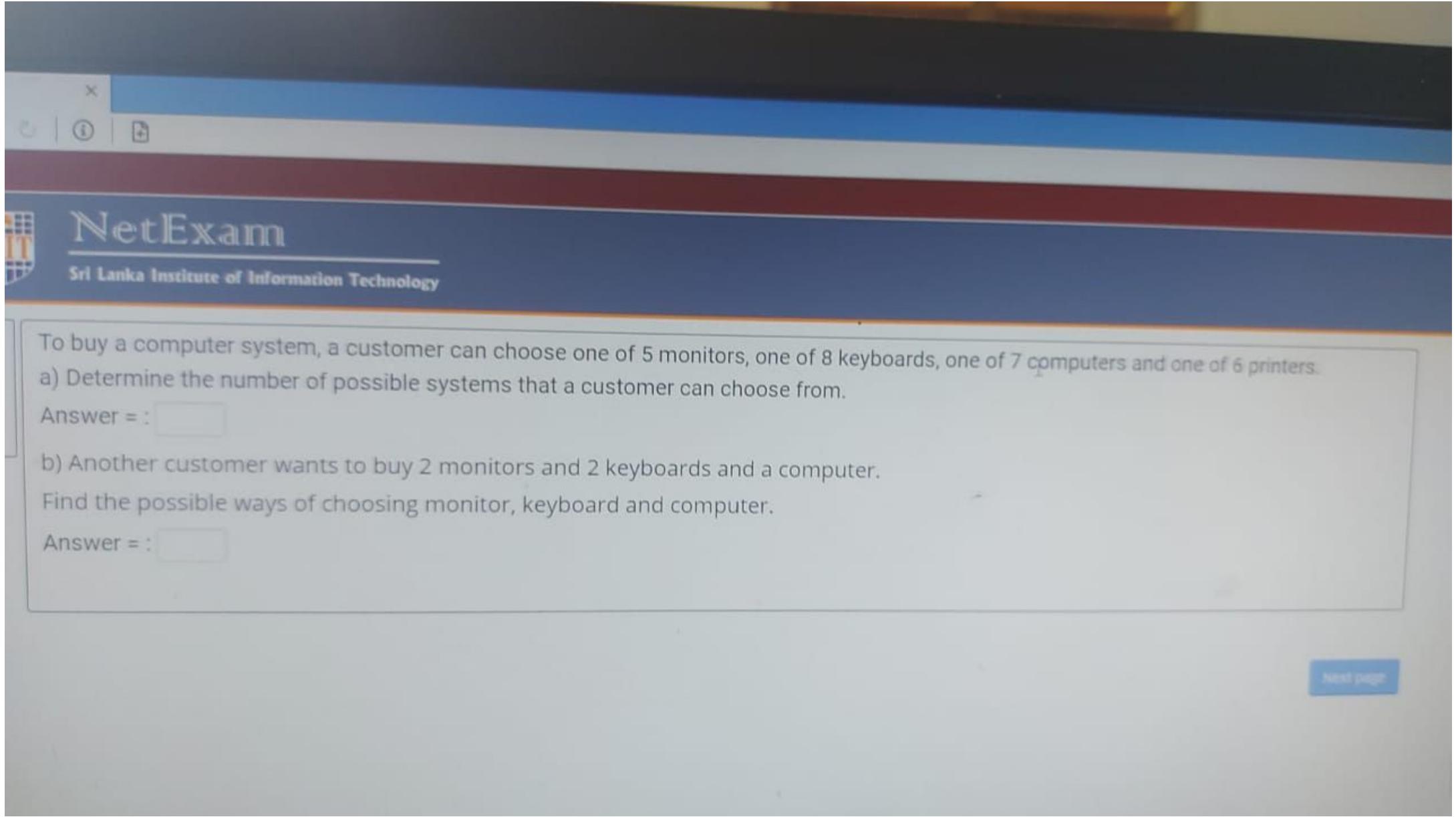
Select one:

- B
- A+B+C
- 1
- A(B+C)
- None of the above

Next page

15

22

A screenshot of a web browser window titled "NetExam" from "Sri Lanka Institute of Information Technology". The page contains a math problem about buying computer systems. The browser has standard window controls (close, minimize, maximize) at the top left.

X

NetExam

Sri Lanka Institute of Information Technology

To buy a computer system, a customer can choose one of 5 monitors, one of 8 keyboards, one of 7 computers and one of 6 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = :

b) Another customer wants to buy 2 monitors and 2 keyboards and a computer.
Find the possible ways of choosing monitor, keyboard and computer.

Answer = :

[Next page](#)

To buy a computer system, a customer can choose one of 5 monitors, one of 8 keyboards, one of 7 computers and one of 6 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = :

b) Another customer wants to buy 2 monitors and 2 keyboards and a computer.

Find the possible ways of choosing monitor, keyboard and computer.

Answer = :

[Next page](#)



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Question 22

Not yet answered

Marked out of
9.00

Flag question

N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = x^5 - 2x + 1$$

Is f a One to one function?

Choose... ▾

Choose...

No

Yes

Choose... ▾

Is f an onto function?

Does f has an inverse function?

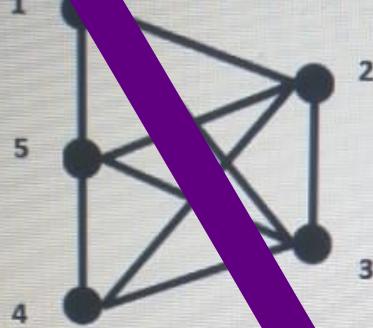
Simplify the following boolean expression.

$$\overline{(A + B)}(\overline{B + C + \bar{B}})((B + D) + (\overline{\bar{B} + C + B})) + A(B + C)$$

Select one:

- B
- A+B+C
- 1
- A(B+C)
- None of the above

2. Determine whether the following graph has Euler path, Euler circuit, Hamilton circuit.



Euler Path =

Yes

No

Euler Circuit =

Yes

No

Hamilton Path =

Yes

No

Hamilton Circuit =

DELL



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QUESTION ID
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View question

Consider the following linear system of equations.

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

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

$$3x + 2y - z = -1$$

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a1 & b1 & c1 & p1 \\ d1 & e1 & f1 & q1 \\ g1 & h1 & i1 & r1 \end{bmatrix} \rightarrow \begin{bmatrix} a2 & b2 & c2 & p2 \\ d2 & e2 & f2 & q2 \\ g2 & h2 & i2 & r2 \end{bmatrix} \rightarrow \begin{bmatrix} a3 & b3 & c3 & p3 \\ d3 & e3 & f3 & q3 \\ g3 & h3 & i3 & r3 \end{bmatrix}$$

$$r_2' = r_2 - 2r_1$$

$$r_3' = r_3 - 3r_1$$

$$r_3' = r_3 - \frac{1}{3}r_1$$

$$a = : \quad a1 = : \quad a2 = : \quad a3 = :$$

$$b = : \quad b1 = : \quad b2 = : \quad b3 = :$$

$$c = : \quad c1 = : \quad c2 = : \quad c3 = :$$

$$d = : \quad d1 = : \quad d2 = : \quad d3 = :$$

$$e = : \quad e1 = : \quad e2 = : \quad e3 = :$$

$$f = : \quad f1 = : \quad f2 = : \quad f3 = :$$

$$g = : \quad g1 = : \quad g2 = : \quad g3 = :$$

$$h = : \quad h1 = : \quad h2 = : \quad h3 = :$$

$$i = : \quad i1 = : \quad i2 = : \quad i3 = :$$

$$p = : \quad p1 = : \quad p2 = : \quad p3 = :$$

$$q = : \quad q1 = : \quad q2 = : \quad q3 = :$$

$$r = : \quad r1 = : \quad r2 = : \quad r3 = :$$





If $|A| = 128$ then find the cofactor matrix of A.

$$A = \begin{bmatrix} x & 5 & 7 \\ 2 & 4 & 1 \\ -2 & 8 & 3 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

C_{23} Choose... ▾

DELL



b) Write down the adjacency matrix for the above graph.

	1	2	3	4	5
1	a	b	c	d	e
2	f	g	h	i	j
3	k	l	m	n	o
4	p	q	r		t
5	u	v	w	x	

a = : b = : c = : d = : e = :

f = : g = : h = : i = : j = :

k = : l = : m = : n = : o = :

p = : q = : r = : s = : t = :

u = : v = : w = : x = : y = :

c) Degree sequence of a graph is 8, 6, 6, 4, 2, 2, 2, 2.

D = {8, 6, 6, 4, 2, 2, 2, 2}



6
Answered
out of
question

Sum of the two digits of a two-digit number is 15. When the sum of two and twice the tens digit is divided by 2 gives the unit digit. Write down 2 equations to find the unit digit (Y) and tens digit (X).

(Hint: For 34, 3 is the tens digit and 4 is the unit digit)

$$\boxed{1} * X + \boxed{1} * Y = \boxed{15}$$

$$\boxed{} * X + \boxed{} * Y = 1$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$

$$r = : \boxed{} \quad s = : \boxed{}$$

$$\begin{matrix} 4 & p & q & r & s & t \\ 5 & u & v & w & x & y \end{matrix}$$

a = : 0 b = : 1 c = : 1 d = : 1 e = : 1
f = : 1 g = : 0 h = : 1 i = : 1 j = : 1
k = : 1 l = : 1 m = : 0 n = : 1 o = : 1
p = : 1 q = : 1 r = : 1 s = : 0 t = : 1
u = : 1 v = : 1 w = : 1 x = : 0 y = : 0

c) Degree sequence of a graph is 5, 4, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :

Does it has an Euler path?

Yes

No



6
Answered
out of
question

Sum of the two digits of a two-digit number is 15. When the sum of two and twice the tens digit is divided by 2 gives the unit digit. Write down 2 equations to find the unit digit (Y) and tens digit (X).

(Hint: For 34, 3 is the tens digit and 4 is the unit digit)

$$\boxed{1} * X + \boxed{1} * Y = \boxed{15}$$

$$\boxed{} * X + \boxed{} * Y = 1$$

a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$

$$r = : \boxed{} \quad s = : \boxed{}$$

Question 5

Not yet answered

Marked out of
3.00

Flag question

a) Determine whether the following graph has Euler path, Euler circuit, Hamilton path or Hamilton circuit.



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

Quiz navigation

Finish attempt...

Time left 1:09:54



EXAM QUESTIONS

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			

FEEDBACK QUESTION

23

X

X



If $|A| = 128$ then find the cofactor matrix of

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stion

$$A = \begin{bmatrix} x & 5 & 7 \\ 2 & 4 & 1 \\ -2 & 8 & 3 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C.

b) Simplify the above expression (D) using the following boolean identities. In front of each step write down the reason (Number of the boolean identity according to following numbers).

Consider the following Boolean identities.

1. Double Complement Law
2. Idempotent Law
3. Identity Law
4. Universal Bound Law
5. Commutative Law
6. Associative Law
7. Distributive Law
8. De Morgan's Law
9. Absorption Law
10. Inverse Law

$$\overline{A} \overline{B} \overline{C} + \overline{A} BC + \overline{A} \overline{B} C$$

$$= \bar{A}B(\bar{C} + C) + \bar{A}\bar{B}C$$

$$= \bar{A}B \cdot 1 + \bar{A}\bar{B}C$$

$$= \bar{A}B + \bar{A}\bar{B}C$$

$$= \bar{A}(B + \bar{B}C)$$

b) Write down the adjacency matrix for the above graph.

1 2 3 4 5

1 $\begin{vmatrix} a & b & c & d & e \\ f & g & h & i & j \\ k & l & m & n & o \\ p & q & r & s & t \\ u & v & w & x & y \end{vmatrix}$

a = : b = : c = : d = : e = :

f = : g = : h = : i = : j = :

k = : l = : m = : n = : o = :

p = : q = : r = : s = : t = :

u = : v = : w = : x = : y = :

↳

c) Degree sequence of a graph is 5, 4, 4, 3, 3, 2, 2, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :

Consider the following linear system of equations.

$$2x + 3y - z = 1$$

$$3x - y + 2z = 1$$

$$x + 2y + 3z = 12$$

a) Represent the above system of linear equations in matrix form $Ax = b$

$$A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}, x = \begin{bmatrix} x \\ y \\ z \end{bmatrix}, b = \begin{bmatrix} p \\ q \\ r \end{bmatrix}$$

$$a = : 2 : \quad b = : 3 : \quad c = : -1 :$$

$$d = : 3 : \quad e = : -1 : \quad f = : 2 :$$

$$g = : 1 : \quad h = : 2 : \quad i = : 3 :$$

$$p = : 1 :$$

$$q = : 1 :$$

$$r = : 12 :$$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$x = \frac{|A_1|}{|A|}, A_1 = \begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix}$$

Consider the following linear system of equations.

$$\begin{aligned}2x + y - 3z &= 1 \\3y - 2z &= -1 \\3x + y - z &= 8\end{aligned}$$

a) Represent the above system of linear equations in matrix form $Ax = b$.

$$A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}, x = \begin{bmatrix} x \\ y \\ z \end{bmatrix}, b = \begin{bmatrix} p \\ q \\ r \end{bmatrix}$$

$$a = : \boxed{\quad} \quad b = : \boxed{\quad} \quad c = : \boxed{\quad}$$

$$d = : \boxed{\quad} \quad e = : \boxed{\quad} \quad f = : \boxed{\quad}$$

$$g = : \boxed{\quad} \quad h = : \boxed{\quad} \quad i = : \boxed{\quad}$$

$$p = : \boxed{\quad}$$

$$q = : \boxed{\quad}$$

$$r = : \boxed{\quad}$$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$x = \frac{|A_1|}{|A|}, A_1 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

$$a = : \quad b = : \quad c = : \quad$$

$$d = : \quad e = : \quad f = : \quad$$

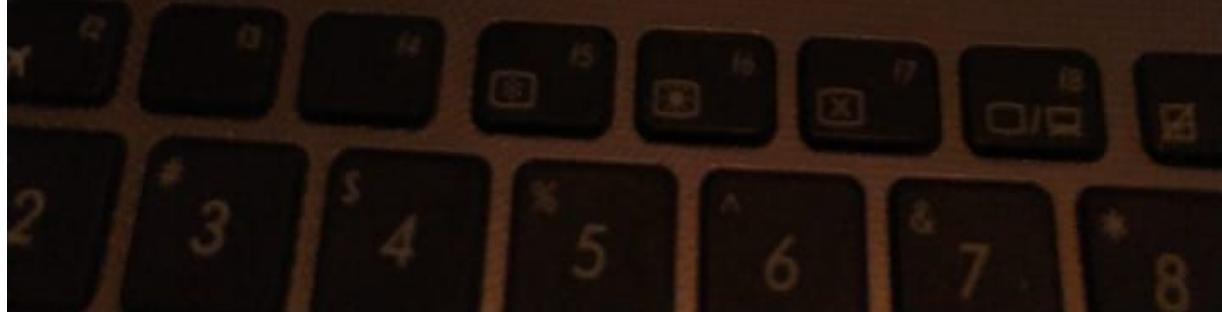


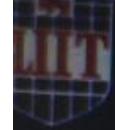
Consider the following function.

$$f(x) = x^5 + 2x^3 - 5$$

1. Find $f'(-2)$:

2. Find the definite integral of $f(x)$ from -2 to 2 :





ed
in

Green Leaf landscaping company got two orders from a Kindergarten. The first order was for 15 bushes and 8 trees, and the cost was 3850LKR. The second order was for 8 bushes and 5 trees, and the cost was 2200LKR. Write down 2 equations to find the cost of a bush (X) and a tree (Y).

$$\boxed{} * X + \boxed{} * Y = \boxed{}$$

$$\boxed{} * X + \boxed{} * Y = 2200$$

- a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \quad q = : \quad$$

$$r = : \quad s = :$$

$$c = :$$

Moodle

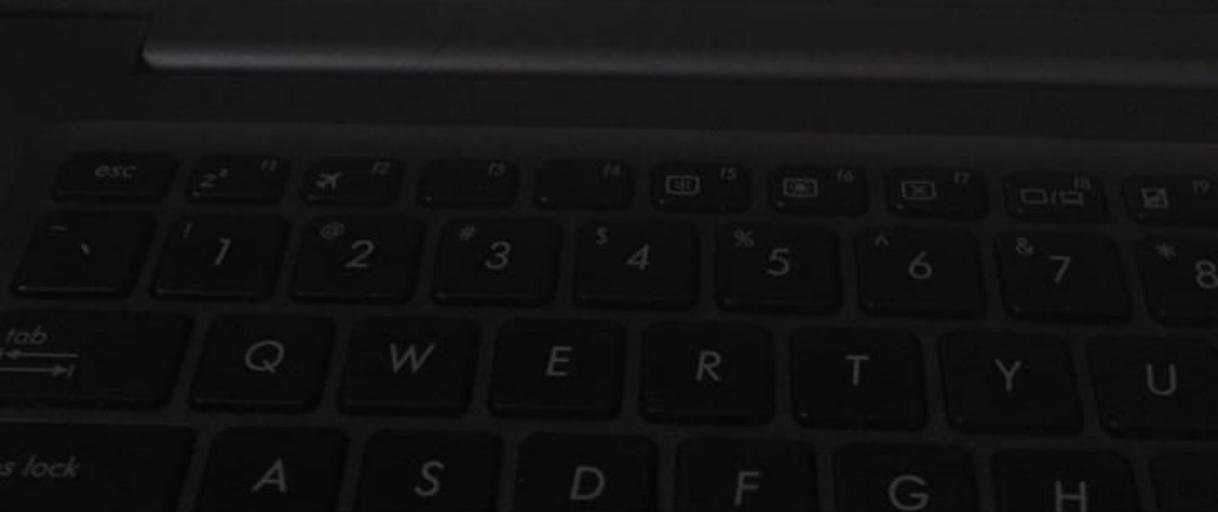
Not yet answered
Marked out of 63.00
Flag question

$x + 2y - z = -1$
 $3y + z = 2$
 $2x + y - z = 0$

1. Write down the augmented matrix for the above system of linear equations and form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix}$$
$$r'_3 = r_3 - 2r_1 \quad . \quad r'_3 = r_3 + r_2$$

a = : a1 = : a2 = :
b = : b1 = : b2 = :
c = : c1 = : c2 = :
d = : d1 = : d2 = :
e = : e1 = : e2 = :
f = : f1 = : f2 = :
g = : g1 = : g2 = :
h = : h1 = : h2 = :
i = : i1 = : i2 = :
p = : p1 = : p2 = :
q = : q1 = : q2 = :
r = : r1 = : r2 = :



NetExam

Sri Lanka Institute of Information Technology

Christy is selling tickets for an exhibition. On the first day of the exhibition 35 adult tickets and 30 child tickets were sold for a total of 3000LKR. On the second day Christy got a revenue of 4200LKR by selling 50 adult tickets and 40 child tickets. Find the price of an adult ticket(X) and the price of a child ticket(Y).

$$\boxed{} * X + \boxed{} * Y = \boxed{}$$

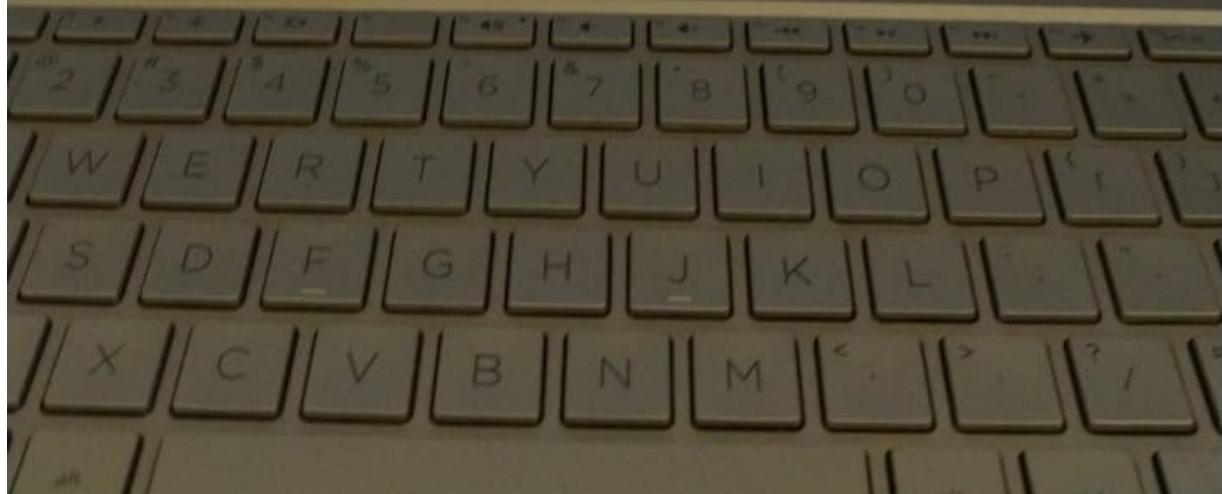
$$\boxed{} * X + \boxed{} * Y = 4200$$

- a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \boxed{} \quad q = : \boxed{}$$



Consider the following linear system of equations.

$$x + 2y - z = -1$$

$$3y + z = 2$$

$$2x + y - z = 0$$

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix}$$

$$r'_3 = r_3 - 2r_1 \quad . \quad r'_3 = r_3 + r_2$$

$$a = : \quad a_1 = : \quad a_2 = :$$

$$b = : \quad b_1 = : \quad b_2 = :$$

$$c = : \quad c_1 = : \quad c_2 = :$$

$$d = : \quad d_1 = : \quad d_2 = :$$

$$e = : \quad e_1 = : \quad e_2 = :$$

$$f = : \quad f_1 = : \quad f_2 = :$$

$$g = : \quad g_1 = : \quad g_2 = :$$

$$h = : \quad h_1 = : \quad h_2 = :$$

$$i = : \quad i_1 = : \quad i_2 = :$$

$$p = : \quad p_1 = : \quad p_2 = :$$

$$q = : \quad q_1 = : \quad q_2 = :$$

$$r = : \quad r_1 = : \quad r_2 = :$$

Question 1

Not yet answered

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9.00

Flag question

If $|A| = 128$ then find the cofactor matrix of A.

$$A = \begin{bmatrix} x & 5 & 7 \\ 2 & 4 & 1 \\ -2 & 8 & 3 \end{bmatrix}$$

C_{11} Choose... ▾

C_{12} Choose... ▾

Choose...

- 4
- 14
- 40
- 41
- 40
- 8
- 24
- 23
- 15
- 23
- 8
- 10
- 4
- 14
- 10

C_{13}

C_{21}

C_{22}

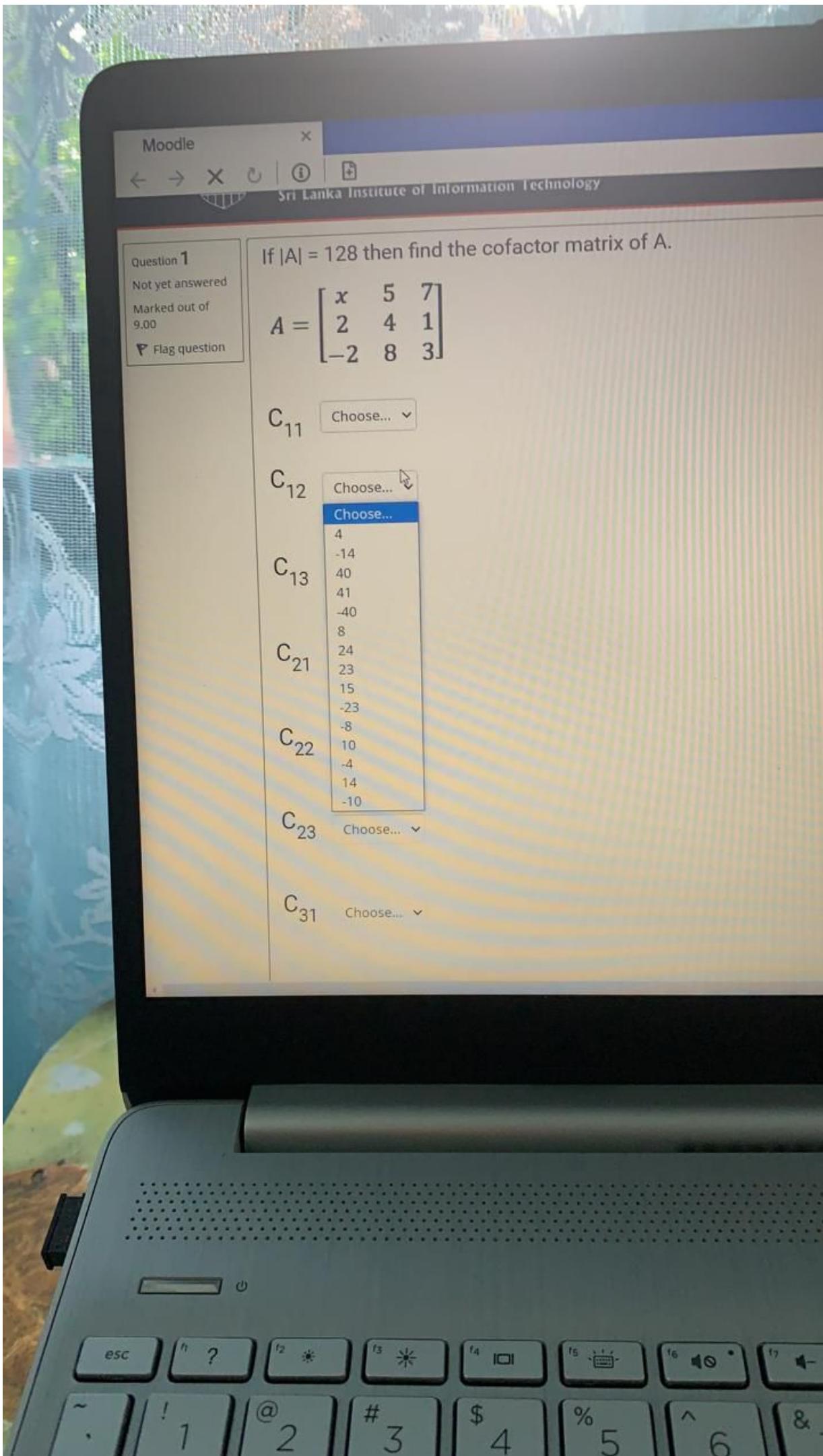
C_{23}

C_{31}

Choose... ▾

Choose... ▾

Choose... ▾



Question 3

Not yet answered
Marked out of
8.00

Flag question

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^2 - 1$

a) Is this a one-to-one function?

- Yes
- No

b) Is this an on to function?

- Yes
- No

b) Does the inverse exist?

- Yes
- No

b) What is the inverse function?

- $f^{-1}(x) = x^{1/2}$
- $f^{-1}(x) = 1/x^2$
- $f^{-1}(x) = x-1$
- Does not exist

Quiz navigation

Finish attempt ...

Time left 1:32:49



EXAM QUESTIONS

1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
		22		
			23	

FEEDBACK QUESTION

23

Question 2

Not yet answered

Marked out of
4.00

Flag question

$$\text{Let } A = \begin{bmatrix} -1 & 4 \\ 3 & 1 \end{bmatrix}$$

$$\text{Find } B = A^2 - 3A + 2I$$

$$B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$a = : \quad 18$$

$$b = : \quad -12$$

$$c = : \quad -9$$

$$d = : \quad 12 |$$

QU

Finish a

Time left

1

EXAM QU

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FEEDBACK Q

23

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(12 - 3x)}{4}$$

Find $g^{-1}(-3)$

Hint : Find the inverse of g and substitute -3.

Answer:

Consider the following linear system of equations.

$$2x + 3y - z = 1$$

$$3x - y + 2z = 1$$

$$x + 2y + 3z = 12$$

a) Represent the above system of linear equations in matrix form $Ax = b$

$$A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}, x = \begin{bmatrix} x \\ y \\ z \end{bmatrix}, b = \begin{bmatrix} p \\ q \\ r \end{bmatrix}$$

$$a = : 2 : \quad b = : 3 : \quad c = : -1 :$$

$$d = : 3 : \quad e = : -1 : \quad f = : 2 :$$

$$g = : 1 : \quad h = : 2 : \quad i = : 3 :$$

$$p = : 1 :$$

$$q = : 1 :$$

$$r = : 12 :$$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$x = \frac{|A_1|}{|A|}, A_1 = \begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix}$$

Sri Lanka Institute of Information Technology

Consider the following finite state Machine A.

M_2

What is the initial State?

To what state does A go if 100101001 input to A in sequence starting from the initial state?

What is the Accepting State?

Find $N(s_1, 0)$

Choose...

Choose...

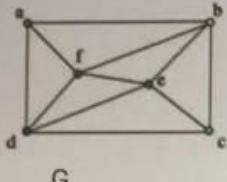
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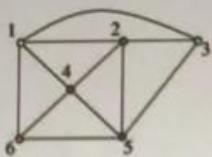
Choose...

Next page

Consider the following 2 graphs.



G



H

Number of Components

G 1

H

I

Number of Vertices

G

H

I

Number of Edges

G 22

H 24

Degree Sequence

G

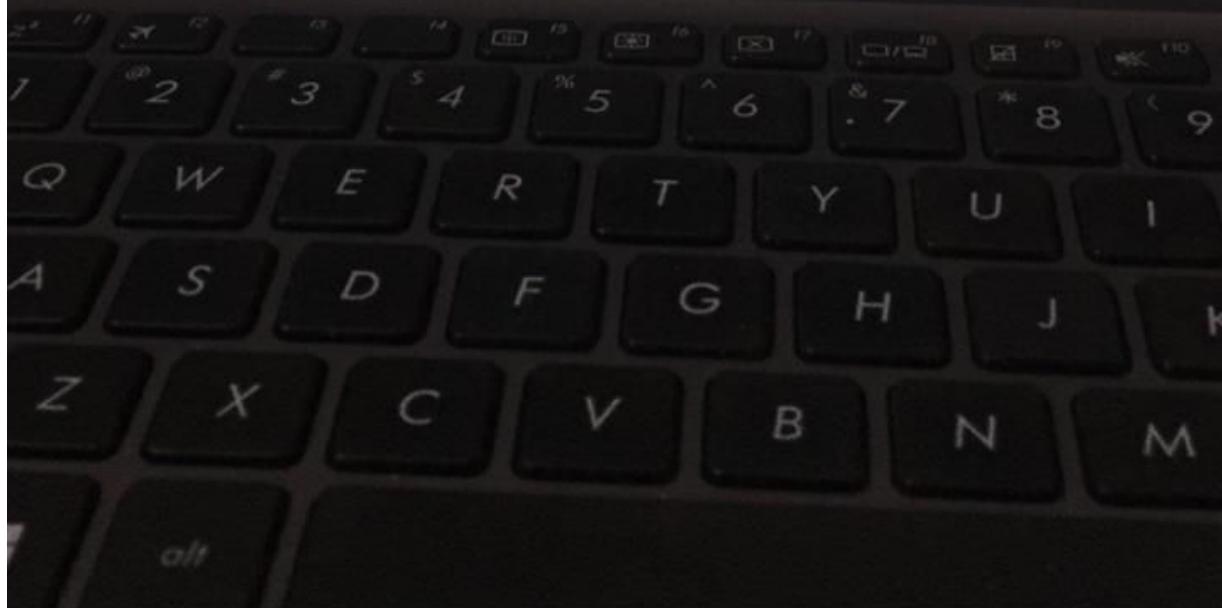
H

Are they isomorphic?

G and H are

isomorphic

Not Isomorphic



Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(12 - 3x)}{4}$$

Find $g^{-1}(-3)$

Hint : Find the inverse of g and substitute -3.

Answer:



3
Answered
out of
question

Consider the following linear system of equations.

$$x + 2y - z = -1$$

$$3y + z = 2$$

$$2x + y - z = 0$$

1. Write down the augmented matrix for the above system of linear equations and

$$\left[\begin{array}{ccc|c} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{array} \right] \rightarrow \left[\begin{array}{ccc|c} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{array} \right] \rightarrow \left[\begin{array}{ccc|c} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{array} \right]$$

$$r'_3 = r_3 - 2r_1 \quad , \quad r'_3 = r_3 + r_2$$

$$a = : \boxed{} \quad a_1 = : \boxed{} \quad a_2 = : \boxed{}$$

$$b = : \boxed{} \quad b_1 = : \boxed{} \quad b_2 = : \boxed{}$$

$$c = : \boxed{} \quad c_1 = : \boxed{} \quad c_2 = : \boxed{}$$

$$d = : \boxed{} \quad d_1 = : \boxed{} \quad d_2 = : \boxed{}$$

$$e = : \boxed{} \quad e_1 = : \boxed{} \quad e_2 = : \boxed{}$$

$$f = : \boxed{} \quad f_1 = : \boxed{} \quad f_2 = : \boxed{}$$

$$g = : \boxed{} \quad g_1 = : \boxed{} \quad g_2 = : \boxed{}$$

$$h = : \boxed{} \quad h_1 = : \boxed{} \quad h_2 = : \boxed{}$$

$$i = : \boxed{} \quad i_1 = : \boxed{} \quad i_2 = : \boxed{}$$

$$p = : \boxed{} \quad p_1 = : \boxed{} \quad p_2 = : \boxed{}$$

$$q = : \boxed{} \quad q_1 = : \boxed{} \quad q_2 = : \boxed{}$$

$$r = : \boxed{} \quad r_1 = : \boxed{} \quad r_2 = : \boxed{}$$

2. To find the solution of the above linear system, obtain the three equations from the
From row 3,

1080p
Full HD

Find the derivative of the following function.

(If your answer is not an integer, then write it as a quotient (eg: 2/5)

$$R(z) = \frac{6}{\sqrt{z^3}} + \frac{1}{8z^4} - \frac{1}{3z^{10}}$$

$$R'(z) = \boxed{} z^{\boxed{}} - \boxed{} z^{-5} + (10/3) z^{\boxed{}}$$



Question 5

yet answered

Marked out of

Flag question

N Refers to all the positive integers. (Called as Natural Numbers)

$$f: N \rightarrow N \quad f(n) = n^3 + 3$$

Is f a One to one function?

Choose... ▾

Choose...

Yes

No

Is f an onto function?



Does f has an inverse function?

Network connection lost. (Autosave failed).

Make a note of any responses entered on this page in the last few minutes, then try to re-connect.

Once connection has been re-established, your responses should be saved and this message will disappear.

Question 7

Not yet answered

Marked out of
10.00

Flag question

To buy a computer system, a customer can choose one of 8 monitors, one of 3 keyboards, one of 9 computers and one of 5 printers.

a) Determine the number of possible systems that a customer can choose from.

Answer = : 216

b) Another customer wants to buy a monitor, keyboard and computer only.

Find the possible ways of choosing monitor, keyboard and computer.

Answer = : 216

≡ Quiz navigation

Finish attempt ...

Time left 1:10:28

1

EXAM QUESTIONS

1 2 3 4 5 6 7
8 9 10 11 12 13 14

15 16 17 18 19 20 21

22

FEEDBACK QUESTIONS

23



Question 7

Not yet answered
Marked out of
22.00

Flag question

Sum of the two digits of a two-digit number is 15. When the sum of two and twice the tens digit is divided by 2 gives the unit digit. Write down 2 equations to find the unit digit (Y) and tens digit (X).

(Hint: For 34, 3 is the tens digit and 4 is the unit digit)

$$\boxed{} * X + \boxed{} * Y = \boxed{15}$$

$$\boxed{} * X + \boxed{} * Y = 1$$

- a) Write the above 2 equations in matrix form $Ax = b$. (According to the given order).

$$Ax = b$$

$$A = \begin{bmatrix} p & q \\ r & s \end{bmatrix} \quad x = \begin{bmatrix} t \\ u \end{bmatrix} \quad b = \begin{bmatrix} c \\ d \end{bmatrix}$$

$$p = : \quad q = :$$

$$r = : \quad s = :$$

$$c = :$$

Question 9

Not yet answered

Marked out of
63.00 Flag question

Consider the following linear system of equations.

$$x + 2y - z = 1$$

$$-x + 3y - z = -4$$

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

≡ Quiz navigation

Finish attempt ...

Time left 1:00:58



EXAM QUESTIONS

1	2	3	4
			▲
8	9	10	11
▲			
15	16	17	18

22

FEEDBACK QUESTION

23

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix} \rightarrow \begin{bmatrix} a_3 & b_3 & c_3 & p_3 \\ d_3 & e_3 & f_3 & q_3 \\ g_3 & h_3 & i_3 & r_3 \end{bmatrix}$$

$$r'_2 = r_2 + r_1$$

$$r'_3 = r_3 + 2r_1$$

$$r'_3 = r_3 - r_2$$

$$a = : \quad a_1 = : \quad a_2 = : \quad a_3 = :$$

$$b = : \quad b_1 = : \quad b_2 = : \quad b_3 = :$$

$$c = : \quad c_1 = : \quad c_2 = : \quad c_3 = :$$

$$d = : \quad d_1 = : \quad d_2 = : \quad d_3 = :$$

$$e = : \quad e_1 = : \quad e_2 = : \quad e_3 = :$$

$$f = : \quad f_1 = : \quad f_2 = : \quad f_3 = :$$

$$g = : \quad g_1 = : \quad g_2 = : \quad g_3 = :$$

$$h = : \quad h_1 = : \quad h_2 = : \quad h_3 = :$$

$$i = : \quad i_1 = : \quad i_2 = : \quad i_3 = :$$

b) Simplify the above expression (D) using the following boolean identities. In front of each step write down the reason (Number of the boolean identity according to following numbers).

Consider the following Boolean identities.

1. Double Complement Law
2. Idempotent Law
3. Identity Law
4. Universal Bound Law
5. Commutative Law
6. Associative Law
7. Distributive Law
8. De Morgan's Law
9. Absorption Law
10. Inverse Law

$$\overline{A} \overline{B} \overline{C} + \overline{A} BC + \overline{A} \overline{B} C$$

$$= \bar{A}B(\bar{C} + C) + \bar{A}\bar{B}C$$

$$= \bar{A}B \cdot 1 + \bar{A}\bar{B}C$$

$$= \bar{A}B + \bar{A}\bar{B}C$$

$$= \bar{A}(B + \bar{B}C)$$

← → × C | ① | A

try to convert form:

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix} \rightarrow \begin{bmatrix} a_3 & b_3 & c_3 & p_3 \\ d_3 & e_3 & f_3 & q_3 \\ g_3 & h_3 & i_3 & r_3 \end{bmatrix}$$

$$r'_2 = r_2 - 2r_1$$

$$r'_3 = r_3 - 3r_1$$

$$r'_3 = r_3 + r_2$$

$$a = : \boxed{} \quad a_1 = : \boxed{} \quad a_2 = : \boxed{} \quad a_3 = : \boxed{}$$

$$b = : \boxed{} \quad b_1 = : \boxed{} \quad b_2 = : \boxed{} \quad b_3 = : \boxed{}$$

$$c = : \boxed{} \quad c_1 = : \boxed{} \quad c_2 = : \boxed{} \quad c_3 = : \boxed{}$$

$$d = : \boxed{} \quad d_1 = : \boxed{} \quad d_2 = : \boxed{} \quad d_3 = : \boxed{}$$

$$e = : \boxed{} \quad e_1 = : \boxed{} \quad e_2 = : \boxed{} \quad e_3 = : \boxed{}$$

$$f = : \boxed{} \quad f_1 = : \boxed{} \quad f_2 = : \boxed{} \quad f_3 = : \boxed{}$$

$$g = : \boxed{} \quad g_1 = : \boxed{} \quad g_2 = : \boxed{} \quad g_3 = : \boxed{}$$

$$h = : \boxed{} \quad h_1 = : \boxed{} \quad h_2 = : \boxed{} \quad h_3 = : \boxed{}$$

$$i = : \boxed{} \quad i_1 = : \boxed{} \quad i_2 = : \boxed{} \quad i_3 = : \boxed{}$$

$$p = : \boxed{} \quad p_1 = : \boxed{} \quad p_2 = : \boxed{} \quad p_3 = : \boxed{}$$

$$q = : \boxed{} \quad q_1 = : \boxed{} \quad q_2 = : \boxed{} \quad q_3 = : \boxed{}$$

$$r = : \boxed{} \quad r_1 = : \boxed{} \quad r_2 = : \boxed{} \quad r_3 = : \boxed{}$$

EXAM QUESTIONS

1	2	3	4	5	6
	▲				▲
8	9	10	11	12	13
▲		▲			
15	16	17	18	19	20
22					

FEEDBACK QUESTION

23

2. To find the solution of the above linear system obtain the three equations from the



Question 7

Not yet answered

Marked out of
63.00

Flag question

Consider the following linear system of equations.

$$x + 2y - z = -1$$

$$3y + z = 2$$

$$2x + y - z = 0$$

1. Write down the augmented matrix for the above system of linear equations and reduce that to echelon form.

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix}$$

$$r'_3 = r_3 - 2r_1$$

$$r'_3 = r_3 + r_2$$

a = : a₁ = : a₂ = :

b = : b₁ = : b₂ = :

c = : c₁ = : c₂ = :

d = : d₁ = : d₂ = :

e = : e₁ = : e₂ = :

f = : f₁ = : f₂ = :

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1

EXAM QUES

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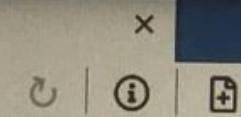
8 9

15 16

22

FEEDBACK Q

23



NetExam

Sri Lanka Institute of Information Technology

Find the following definite integral.

(If your answer is not an integer, then write it as a quotient (eg: 2/5))

$$\int_1^4 \frac{8}{\sqrt{t}} - 12\sqrt{t^3} dt = \boxed{\quad}$$