



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

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

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

$$=0$$

$$=0$$

Next page



Question 2

Not yet answered

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1.00

Flag question

Consider the following linear system of equations.

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

$$2x + 3y - 4z = -4$$

$$3x - 13y + 4z = -11$$

$$\begin{matrix} 1 & -2 & 1 & 0 \end{matrix}$$

$$\begin{matrix} 1 & -2 & 1 & 0 \end{matrix}$$

$$\begin{matrix} 1 & -2 & 1 & 0 \end{matrix}$$

$$\begin{matrix} 1 & -2 & 1 & 0 \end{matrix}$$

$$\begin{matrix} 1 & -2 & 1 & 0 \end{matrix}$$

$$\begin{matrix} 2 & 3 & -4 & -4 \end{matrix}$$

$$\begin{matrix} 0 & 7 & -6 & -4 \end{matrix}$$

$$\begin{matrix} 0 & 7 & -6 & -4 \end{matrix}$$

$$\begin{matrix} 0 & 7 & -6 & -4 \end{matrix}$$

$$\begin{matrix} 0 & 7 & -6 & -4 \end{matrix}$$

$$\begin{matrix} 3 & -13 & 4 & -11 \end{matrix}$$

$$\begin{matrix} 3 & -13 & 4 & -11 \end{matrix}$$

$$\begin{matrix} 0 & -7 & 1 & -11 \end{matrix}$$

$$\begin{matrix} 0 & 0 & -5 & -15 \end{matrix}$$

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

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

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

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

$$r'_3 = r_3 + r_2$$

$$a = : 1 \quad a_1 = : 1 \quad a_2 = : 1 \quad a_3 = : 1$$

$$b = : -2 \quad b_1 = : -2 \quad b_2 = : -2 \quad b_3 = : -2$$

$$c = : 1 \quad c_1 = : 1 \quad c_2 = : 1 \quad c_3 = : 1$$

$$d = : 2 \quad d_1 = : 0 \quad d_2 = : 0 \quad d_3 = : 0$$

$$e = : 3 \quad e_1 = : 7 \quad e_2 = : 7 \quad e_3 = : 7$$

$$f = : -4 \quad f_1 = : -6 \quad f_2 = : -6 \quad f_3 = : -6$$

| | | | |
|-------------|--------------|--------------|--------------|
| $e = : 3$ | $e1 = : 7$ | $e2 = : 7$ | $e3 = : 7$ |
| $f = : -4$ | $f1 = : -6$ | $f2 = : -6$ | $f3 = : -6$ |
| $g = : 3$ | $g1 = : 3$ | $g2 = : 0$ | $g3 = : 0$ |
| $h = : -13$ | $h1 = : -4$ | $h2 = : -7$ | $h3 = : 0$ |
| $i = : 4$ | $i1 = : 0$ | $i2 = : 1$ | $i3 = : -5$ |
| $p = : 0$ | $p1 = : 0$ | $p2 = : 0$ | $p3 = : 0$ |
| $q = : -4$ | $q1 = : -4$ | $q2 = : -4$ | $q3 = : -4$ |
| $r = : -11$ | $r1 = : -11$ | $r2 = : -11$ | $r3 = : -15$ |

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

From row 3,

$$0 *X + 0 *Y + -5 *Z = -15 \quad 0 \quad 0 \quad -5 \quad -15 \quad z = 3$$

$$y = 2$$

$$x = 1$$

From row 2,

$$0 *X + 7 *Y + -6 *Z = -4 \quad 0 \quad 7 \quad -6 \quad -4$$

From row 1,

$$1 *X + 2 *Y + 1 *Z = 0 \quad 1 \quad -2 \quad 1 \quad 0$$



Question 1

Not yet answered

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1.00

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 :

Next

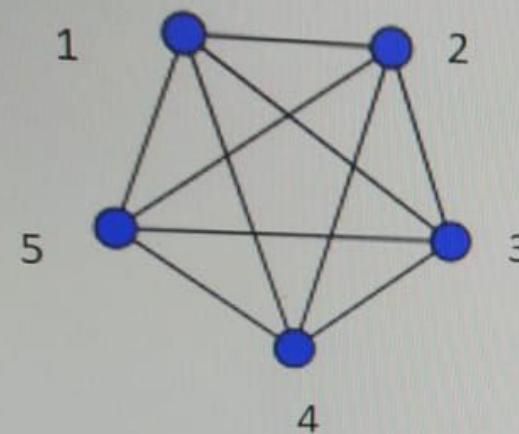
Question 3

Not yet answered

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 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

H.C = yes

≡ Quiz na

Finish attempt...

Time left 1:32:04

| | | |
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| 1 | 2 | 3 |
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| 22 | | |



Question 4

Not yet answered

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1.00

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 2350LKR. On the second day Christy got a revenue of 3300LKR 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).

$$35 * X + 30 * Y = 2350$$

$$50 * X + 40 * Y = 3300$$

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

$$Ax = b$$

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

$$p = : 35 \quad q = : 30$$

$$r = : 50 \quad s = : 40$$

$$t = x$$

$$u = y$$

$$c = 2350$$

$$d = 3300$$

From row 2,

$$0 * X + 7 * Y + -6 * Z = -4$$

From row 1,

$$1 * X + -2 * Y + 1 * Z = 0$$

3. Hence find the solution of the above linear system of equations.

$$X = : 1$$

$$Y = : 2$$

$$Z = : 3$$



$$a_3 = : -30 \quad a_4 = : 35$$

c) Find the determinant of A. : -100

d) Find the adjoint of A.

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

$$p = : 40 \quad q = : -30$$

$$r = : -50 \quad s = : 35$$

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

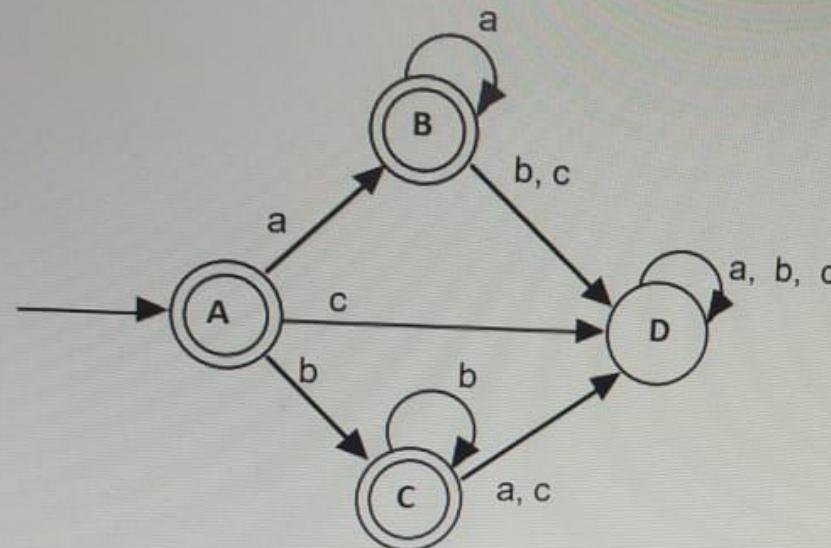
Cost of an adult ticket = : 50

Cost of a child ticket = : 20 I

Finish attempt ...

Time left 1:18:19

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



What is the initial State?

A

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

D

Find $N(C, a)$

D

Find $N(D, b)$

D



$$Ax = b$$

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

$$p = : 35 \quad q = : 30$$

$$r = : 50 \quad s = : 40$$

$$c = : 2350$$

$$d = : 3300$$



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

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

$$a1 = : 40 \quad a2 = : -50$$

$$a3 = : -30 \quad a4 = : 35$$

c) Find the determinant of A.

Method 1: Using the adjoint of A.

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 = : 840 $5 \times 7 \times 4 \times 6$

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

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

Answer = : 140 $5 \times 7 \times 4$ 



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Question 9

Not yet answered

Marked out of
1.00

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 = :

b = :

$$\begin{matrix} 10 & 4 \\ -2 & 0 \end{matrix}$$

c = :

d = :



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ion 6

et answered

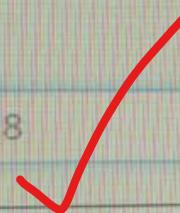
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rag question

Find the following definite integral.

$$\int_{-2}^0 |4x - 5| dx$$

Answer: 18



Next pag



Question 12

Not yet answered

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Flag question

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Finish attempt ...

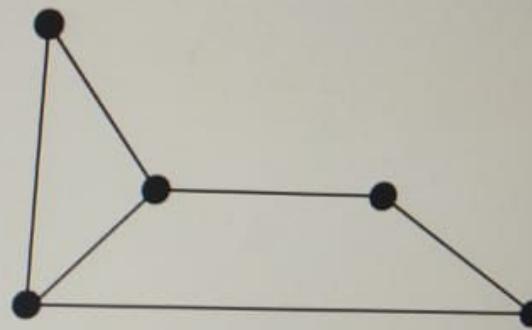
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| 1 | 2 | 3 |
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| 15 | 16 | 17 |
| 22 | | 18 |

Consider the following 2 graphs.



G



H

Number of Components

| |
|---|
| 1 |
| 5 |
| 6 |



Number of Vertices

| |
|---|
| 5 |
|---|



Number of Edges

| |
|---|
| 6 |
|---|



Degree Sequence

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | , | 3 | , | 2 | , | 2 | , | 2 | , | 2 |
|---|---|---|---|---|---|---|---|---|---|---|

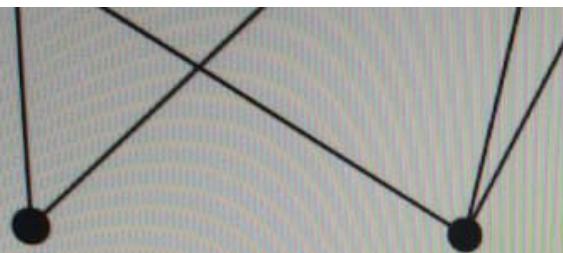


| |
|---|
| 1 |
| 5 |
| 6 |

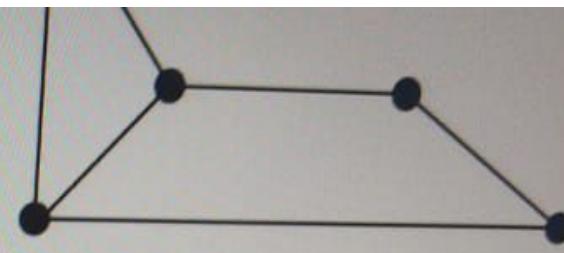


| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3 | , | 3 | , | 2 | , | 2 | , | 2 |
|---|---|---|---|---|---|---|---|---|





G



H

Number of Components

G

H

1

1

5

5

6

6

Number of Vertices

3

3

Number of Edges

3

3

Degree Sequence

2

2

2

2

2

2

Are they isomorphic?

G and H are

Isomorphic

Not Isomorphic





Question 13

yet answered

Marked out of
0

Flag question

Find the derivative of the following function.

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

$$f(t) = \frac{4}{t} - \frac{1}{6t^3} + \frac{8}{t^5}$$

$$f'(t) = \boxed{-4} t^{\boxed{-2}} + \boxed{1/2} t^{\boxed{-4}} - 40 t^{\boxed{-6}}$$



Next page

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1.00

Flag question

$$\begin{bmatrix} 1 & -2 & 2 \end{bmatrix}$$

Finish attempt

Time left 0:33:59

| | | |
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| 1 | 2 | 3 |
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| 15 | 16 | 17 |
| 18 | 19 | 20 |
| 21 | 22 | 23 |

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

Assume I is the identity matrix.

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

$$a = : 5$$

$$b = : 0$$

$$c = : 0$$

$$d = : 0$$

$$e = : 5$$

$$f = : 0$$

$$g = : 0$$

$$h = : 0$$

$$i = : 5$$

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1.00
Flag question

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)

Finish attempt...

Time left 0:20:05

1 2 3 4 5

8 9 10 11 12

15 16 17 18 19

22





Question 2

Not yet answered

Marked out of
1.00 Flag question

Convert 6425_{10} to following number systems.

Equivalent Binary Number (x) =

Equivalent Octal Number (y) =

Equivalent Hexadecimal Number (z) =

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) $11110101 + 10010111 =$ (Write your answer with 9 digits)

ii) $11110101 - 10010111 =$ (Write your answer with 7 digits)

iii) $11110101 \times 10000 =$

Question 1

Not yet answered

Marked out of
1.00

Flag question

Consider the following linear system of equations.

$$\begin{array}{l} x + 2y - 2z = 2 \\ 2x + y - z = -2 \\ 3x + 2y - z = -1 \end{array} \quad \begin{array}{cccc|ccccc} 1 & 2 & -2 & 2 & 1 & 2 & -2 & 2 & 1 & 2 & -2 & 2 \\ 2 & 1 & -1 & -2 & 0 & -3 & 3 & -6 & 0 & -3 & 3 & -6 \\ 3 & 2 & -1 & -1 & 3 & 2 & -1 & -1 & 0 & -4 & 5 & -7 \\ & & & & & & & & 0 & 0 & 1 & 1 \end{array}$$

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

$$\begin{bmatrix} a & b & c & p \\ d & e & f & q \\ g & h & i & r \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & b_1 & c_1 & p_1 \\ d_1 & e_1 & f_1 & q_1 \\ g_1 & h_1 & i_1 & r_1 \end{bmatrix} \rightarrow \begin{bmatrix} a_2 & b_2 & c_2 & p_2 \\ d_2 & e_2 & f_2 & q_2 \\ g_2 & h_2 & i_2 & r_2 \end{bmatrix} \rightarrow \begin{bmatrix} a_3 & b_3 & c_3 & p_3 \\ d_3 & e_3 & f_3 & q_3 \\ g_3 & h_3 & i_3 & r_3 \end{bmatrix} \quad \begin{array}{l} 0*x + 0*y + 1*z = 1 \\ z = 1 \\ 0*x - 3*y + 3*z = -6 \\ y = 3 \end{array}$$

$r'_2 = r_2 - 2r_1$

$r'_3 = r_3 - 3r_1$

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

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

$a = : 2 \quad a_1 = : \boxed{} \quad a_2 = : \boxed{} \quad a_3 = : \boxed{}$

$b = : 2 \quad b_1 = : \boxed{} \quad b_2 = : \boxed{} \quad b_3 = : \boxed{}$

$c = : -2 \quad c_1 = : \boxed{} \quad c_2 = : \boxed{} \quad c_3 = : \boxed{}$

$d = : 2 \quad d_1 = : \boxed{} \quad d_2 = : \boxed{} \quad d_3 = : \boxed{}$

$e = : 1 \quad e_1 = : \boxed{} \quad e_2 = : \boxed{} \quad e_3 = : \boxed{}$

$f = : -1 \quad f_1 = : \boxed{} \quad f_2 = : \boxed{} \quad f_3 = : \boxed{}$

$g = : 3 \quad g_1 = : \boxed{} \quad g_2 = : \boxed{} \quad g_3 = : \boxed{}$

$h = : 2 \quad h_1 = : \boxed{} \quad h_2 = : \boxed{} \quad h_3 = : \boxed{}$

$i = : -1 \quad i_1 = : \boxed{} \quad i_2 = : \boxed{} \quad i_3 = : \boxed{}$

$p = : 2 \quad p_1 = : \boxed{} \quad p_2 = : \boxed{} \quad p_3 = : \boxed{}$

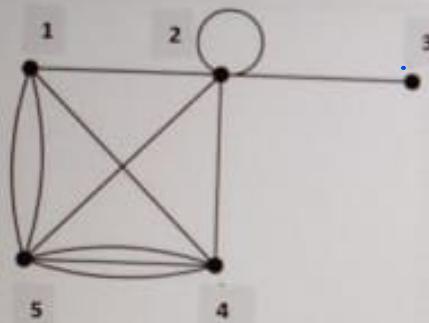
$q = : -2 \quad q_1 = : \boxed{} \quad q_2 = : \boxed{} \quad q_3 = : \boxed{}$

Question 3

Not yet answered

Marked out of
1.00 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 No

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



n 4

answered
out of

question

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

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

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

a = : 18 -12
 -9 12

b = :

c = :

d = :

Consider the following function.

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

1. Find $f'(-3)$: 39

2. Find the definite integral of $f(x)$ from -3 to 3 : 30

Consider the function $f: R \rightarrow R$ $f(x) = x^2$.

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

Question 14

yet answered
Marked out of
1
Flag question

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

$$x=0$$

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

$$C_{11} \quad \text{Choose...} \quad 4$$

$$C_{12} \quad \text{Choose...} \quad -8$$

$$C_{13} \quad \text{Choose...} \quad 24$$

$$C_{21} \quad \text{Choose...} \quad 41$$

$$C_{22} \quad \text{Choose...} \quad 14$$

$$C_{23} \quad \text{Choose...} \quad -10$$

$$C_{31} \quad \text{Choose...} \quad -23$$

$$C_{32} \quad \text{Choose...} \quad 14$$

$$C_{33} \quad \text{Choose...} \quad -10$$

c) Find x using the cramer's rule.

See 28th PAGE

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

$$a = : 6 \quad b = : 1 \quad c = : -1$$

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

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

$$|A_1| = : 0$$

$$x = : 0$$

$$A3 = \begin{bmatrix} 2 & 1 & 6 \\ 3 & -2 & 3 \\ -1 & 1 & -3 \end{bmatrix}$$

$$|A3| = 18$$

$$z = -9/5$$

d) Find y using the cramer's rule.

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

$$a = : 2 \quad b = : 6 \quad c = : -1$$

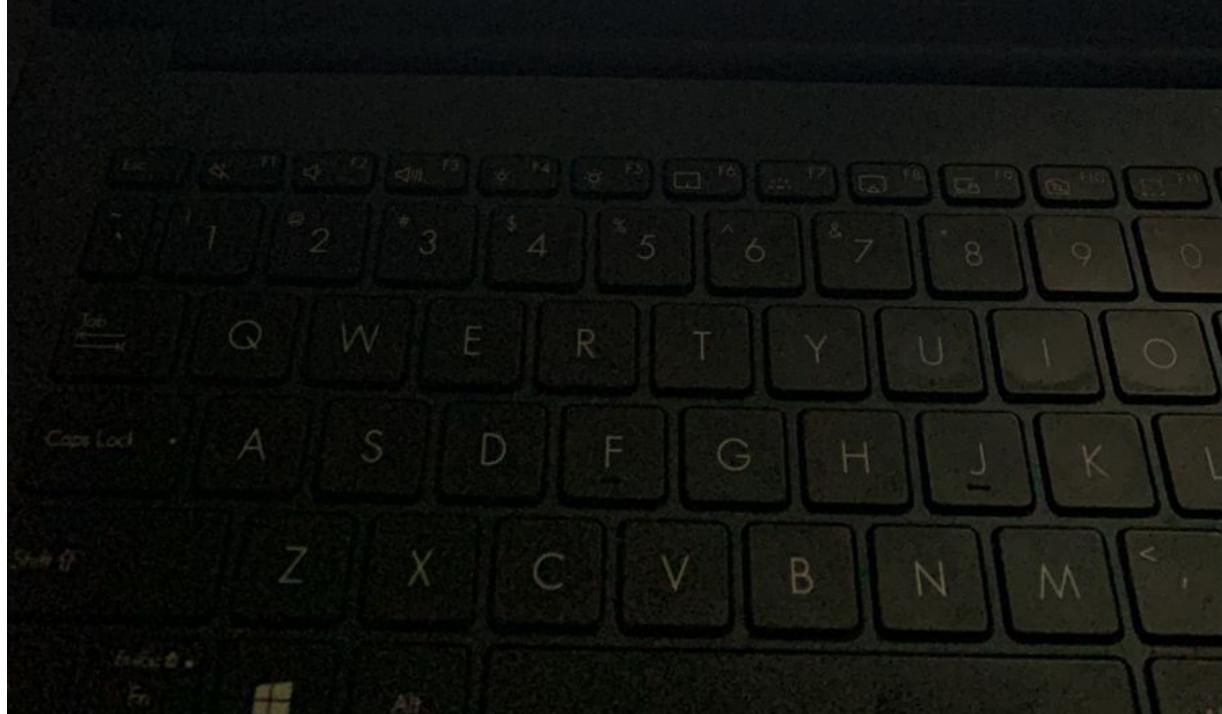
$$d = : 3 \quad e = : 3 \quad f = : -3$$

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

$$|A_2| = : -18$$

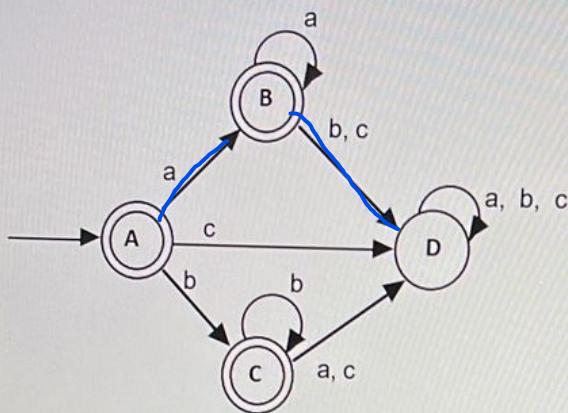
$$y = : 9/5$$

ASUS VivoBook



Question 7
Not yet answered
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1.00
Flag question

Consider the following finite state Machine A.



What is the initial State? **A**

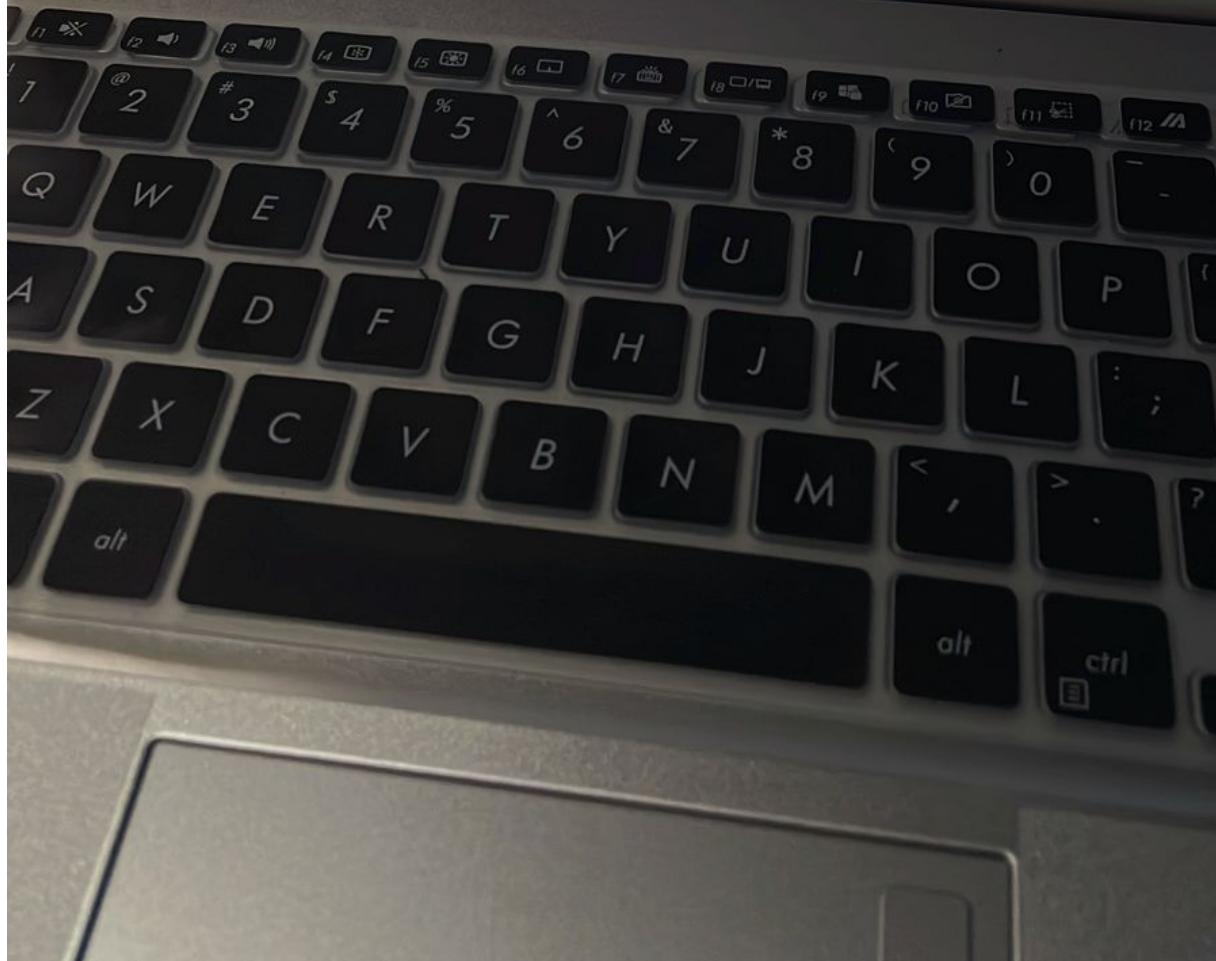
To what state does A go if abcacbac input to A in sequence starting from the initial state? **D**

Find $N(C, a)$ **D**

Find $N(D, b)$ **D**

Choose...
C
B
D
A
Choose...

ASUS VivoBook



Moodle

Question 1
Not yet answered
Marked out of 1.00
Flag question

Consider the following linear system of equations.

$$\begin{aligned}2x + y - z &= 6 \\3x - 2y - 3z &= 3 \\-x + y + 2z &= -3\end{aligned}$$

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 = : b = : c = :
d = : e = : f = :
g = : h = : i = :
p = :
q = :
r = :

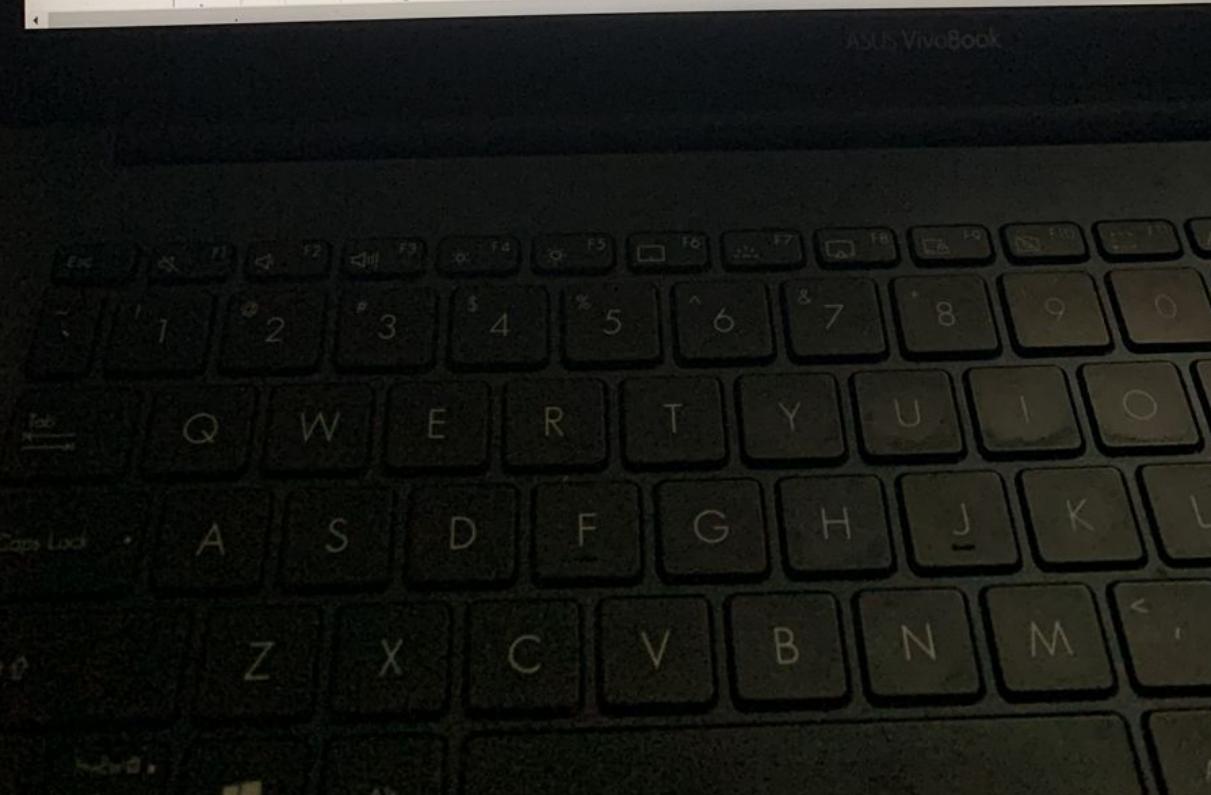
b) Find the determinant of A.:

c) Find x using the cramer's rule.

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

See 26th page

a = : b = : c = :





4

Answered

out of

question

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

$$f: N \rightarrow N \quad f(n) = (x - 2)(x + 3)$$

$$x = 1$$

$$y = -4$$

Is f a One to one function?

Choose... ▾

no

$$x = 2$$

$$y = 0$$

Is f an onto function?

Choose... ▾

no

Does f has an inverse function?

Choose... ▾

no



Question 1

Not yet answered

Marked out of
1.00

Flag question

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



ASUS

Question 1

Not yet answered

Marked out of
1.00

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)

$$1 * X + 1 * Y = 15$$

$$\square * X + \square * Y = 1$$

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

$$Ax = b$$

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

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

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

$$c = : \square$$

≡ Quiz

Finish attempt

Time left 1:5:

| | |
|----|----|
| 1 | 2 |
| 8 | 9 |
| 15 | 16 |
| 22 | |

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(8 - 5x)}{4}$$

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

Hint : Find the inverse of g and substitute 2.

Answer:



acer

metropolitan
Warranty void if Label
Removed / Broken



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:



Question 3

Not yet answered

Marked out of
0

Flag question

Find the following definite integral.

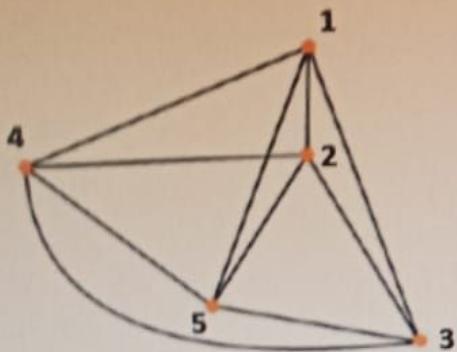
$$\int_{-2}^{0} |4x - 5| dx$$

Answer: 18 | 26 |



5
answered
out of
question

a) Determine whether the following graph has Euler path, Euler



Euler Path =

- No

Euler Circuit =

- Yes
 - No

Hamilton Path =

- Yes
 No

Hamilton Circuit =

- ✓ Yes
○ No



**Question 2**

Not yet answered

Marked out of
1.00

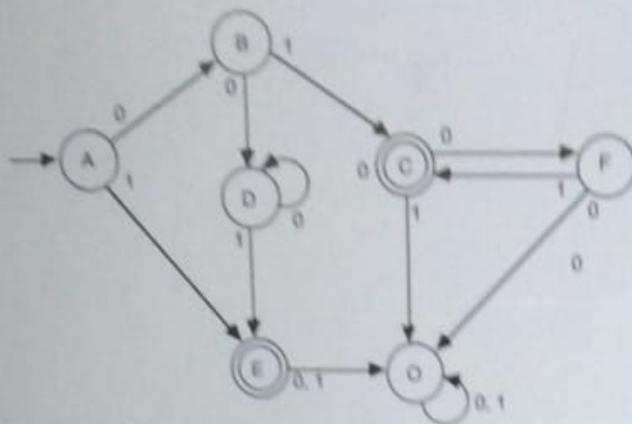
Flag question

Find the following definite integral.

$$\int_{-2}^{0} |4x - 5| dx$$

Answer:

Consider the following finite state Machine A.



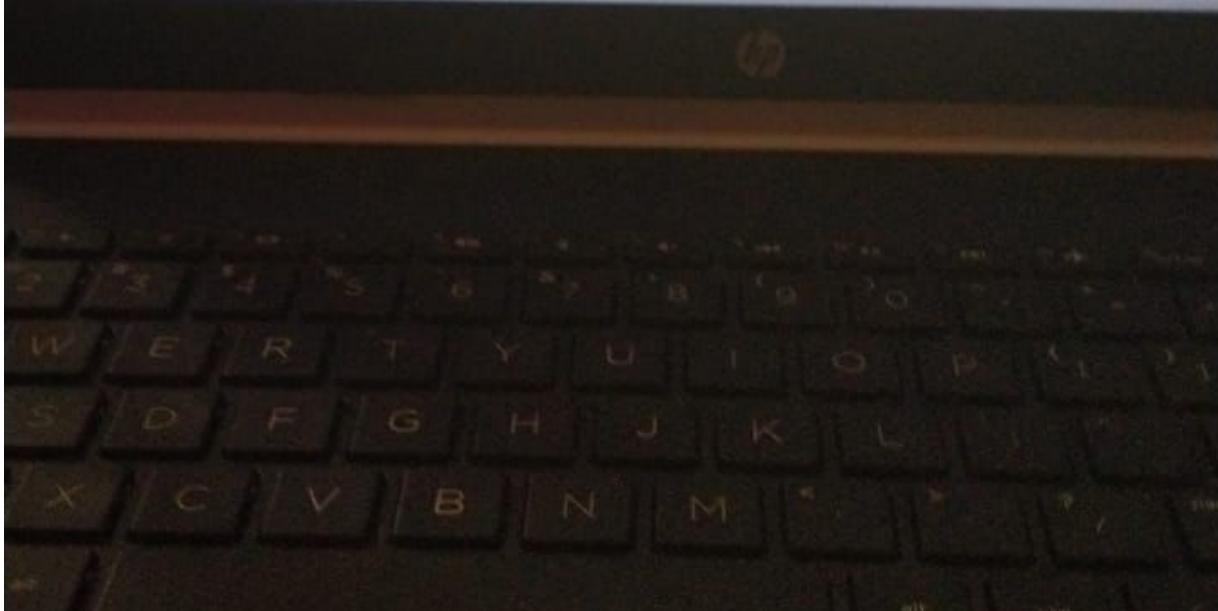
What is the initial State? A B

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

Find $N(C, 1)$ 0 1

Find $N(F, 0)$ 0 1

| | |
|---|-----------------------|
| A | <input type="radio"/> |
| O | <input type="radio"/> |
| D | <input type="radio"/> |
| O | <input type="radio"/> |



Question 4

Not yet answered
Marked out of
1.00

Flag question

Consider the function $f: \mathbb{R} \rightarrow \mathbb{R}$ $f(x) = x^2 + 5$

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

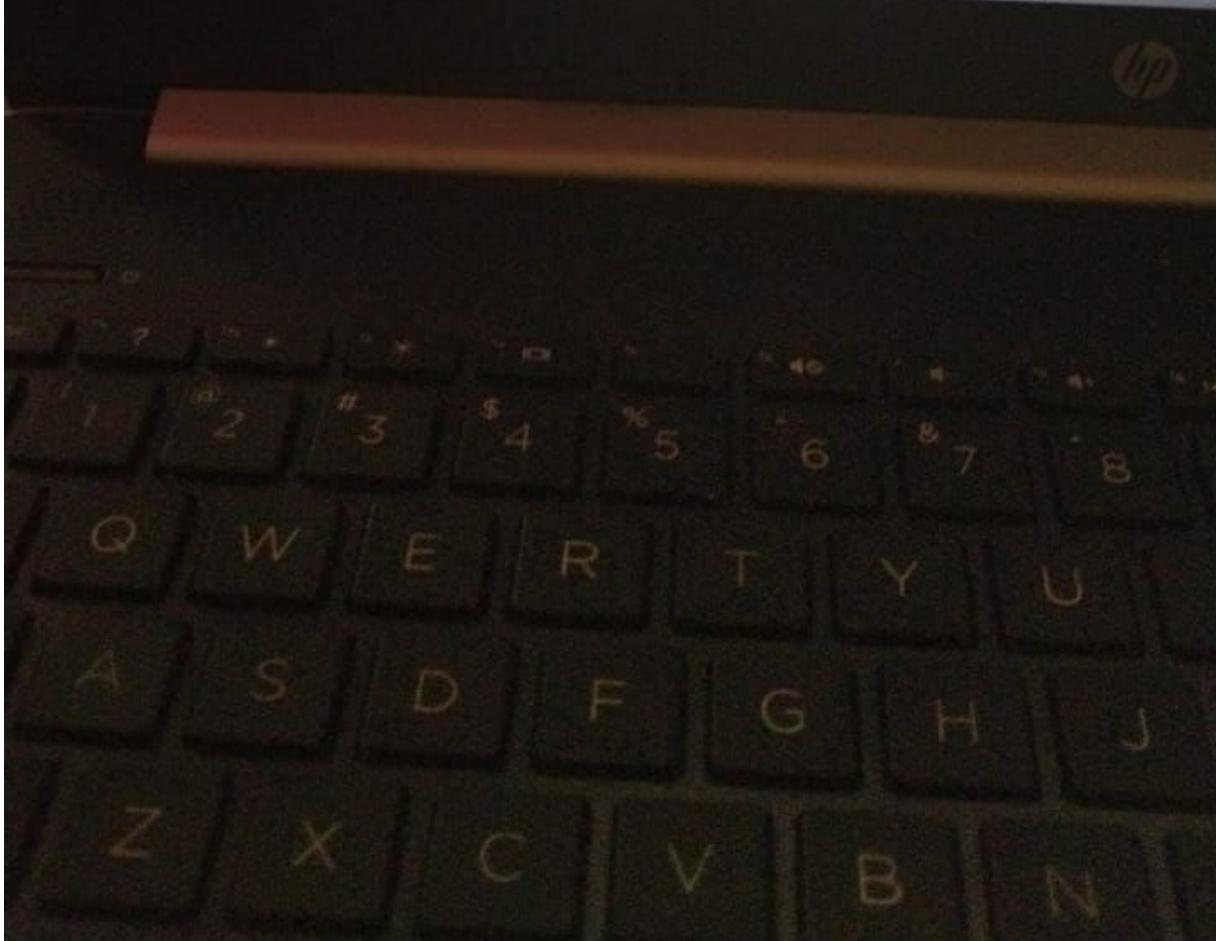
b) What is the inverse function?

$f^{-1}(x) = (x-5)^{(1/2)}$

$f^{-1}(x) = 1/(x-5)^{1/2}$

$f^{-1}(x) = (x-5)^2$

Does not exist



Question 5

Not yet answered

Marked out of
0

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 onto 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

c) Degree sequence of a graph is 7, 6, 6, 4, 2, 2, 2, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = : 15

Does it has an Euler path?

Yes

No

Does it has an Euler circuit? no

FULL HD ▶ 1080 ◀

acer

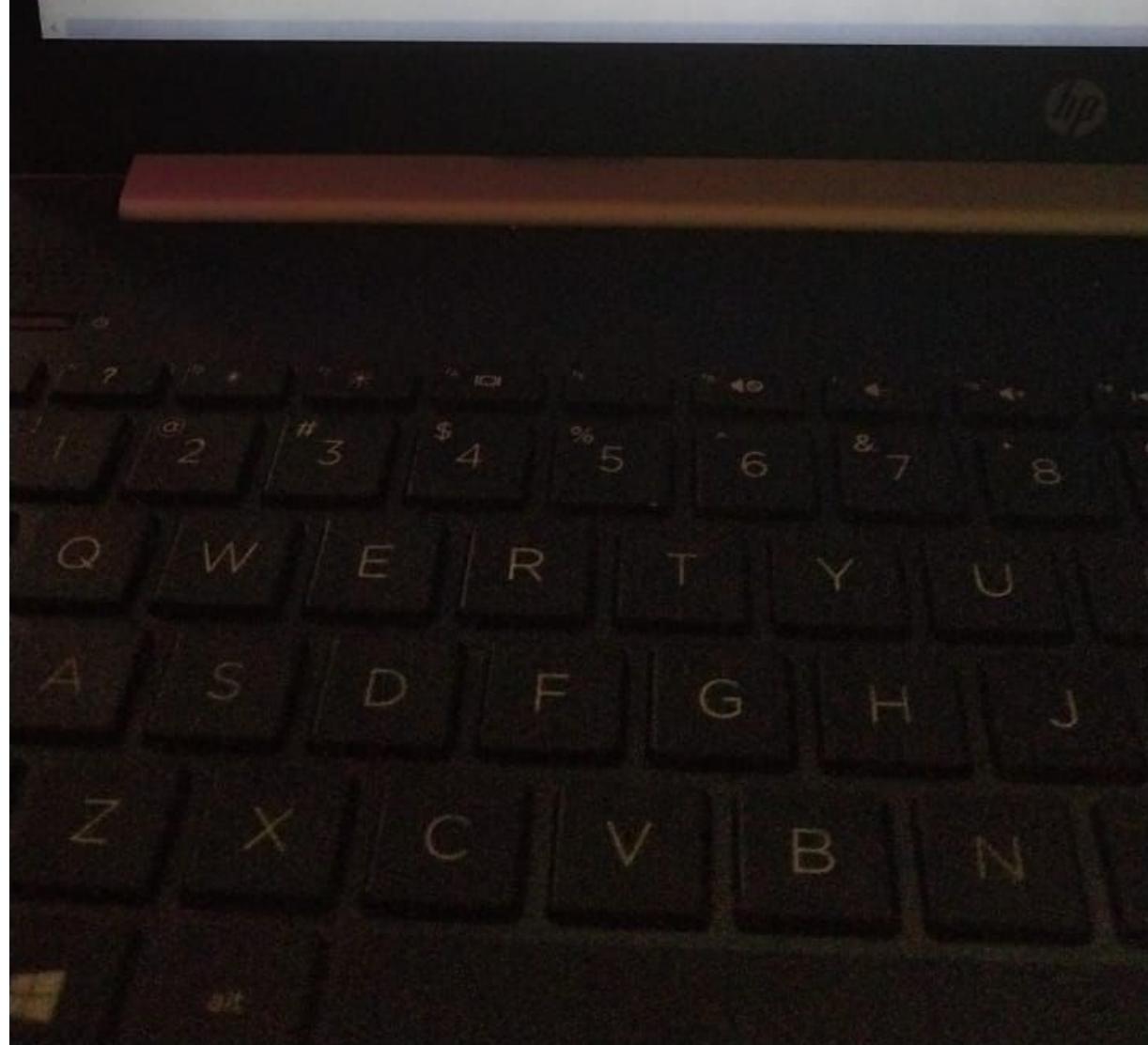
tion 6yet answered
marked out of
1

Flag question

Find the derivative of the following function.
(If your answer is not an integer, then write it as a quotient (eg:

$$h(x) = \frac{4x^3 - 7x + 8}{x}$$

$$h'(x) = 8 \quad x - 8 \quad x^{-2}$$



X

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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)

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

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

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

$Ax = b$

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

$p = \dots \quad q = \dots$

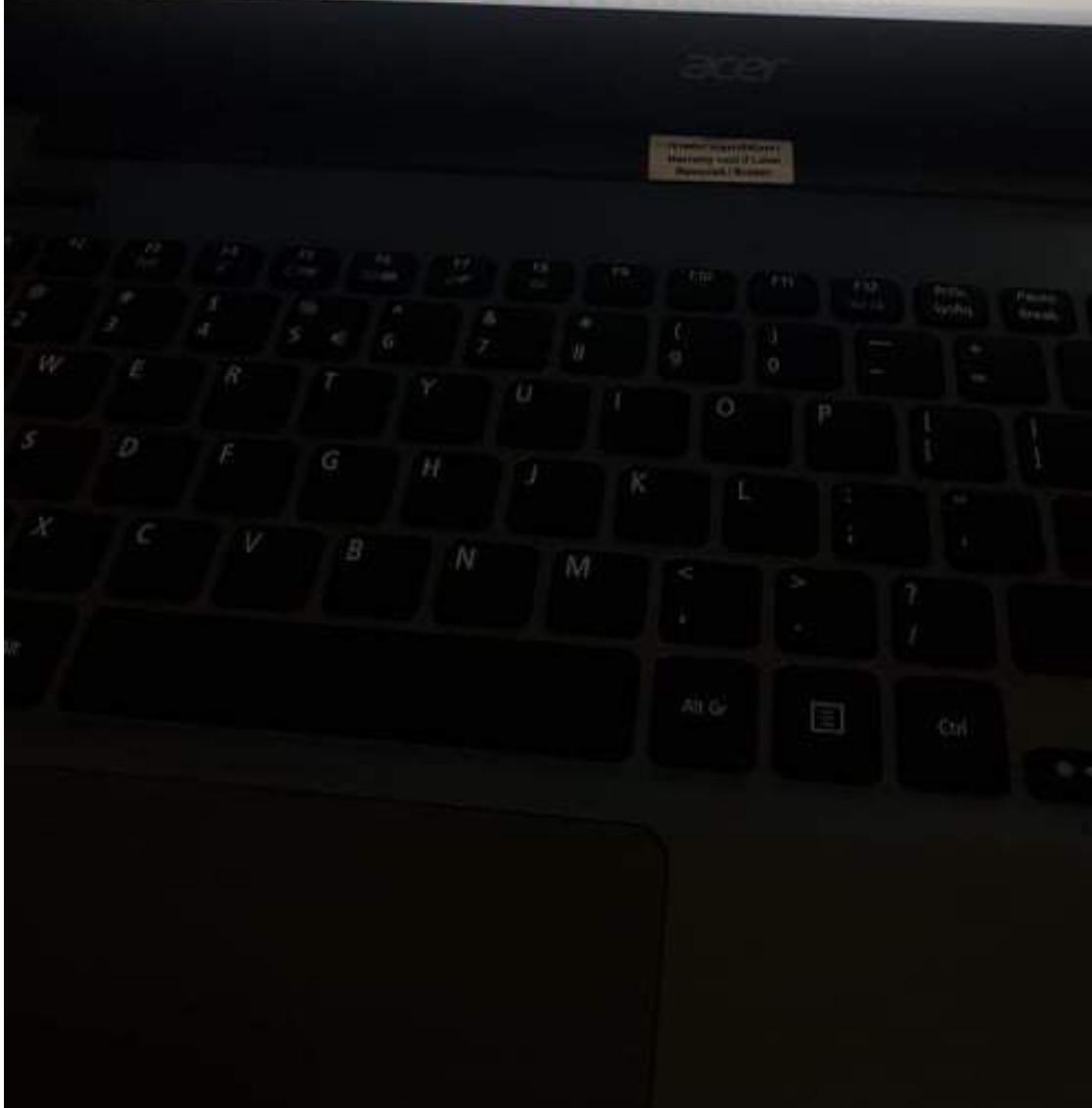
$r = \dots \quad s = \dots$

$t = \dots$

$u = \dots$

$c = \dots$

$d = \dots$



Question 2

Not yet answered

Marked out of
1.00

Flag question

Consider the following linear system of equations.

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

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

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

$$\begin{array}{cccc|c} 1 & 2 & -1 & 1 \\ -1 & 3 & -1 & -4 \\ -2 & 1 & 2 & 3 \end{array}$$

$$\begin{array}{cccc|c} 1 & 2 & -1 & 1 \\ 0 & 5 & -2 & -3 \\ -2 & 1 & 2 & 3 \end{array}$$

$$\begin{array}{cccc|c} 1 & 2 & -1 & 1 \\ 0 & 5 & -2 & -3 \\ 0 & 5 & 0 & 5 \end{array}$$

$$\begin{array}{cccc|c} 1 & 2 & -1 & 1 \\ 0 & 5 & -2 & -3 \\ 0 & 0 & 2 & 8 \end{array}$$

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

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

$$r'_2 = r_2 + r_1$$

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

$$r'_3 = r_3 - r_2$$

$$z = 4$$

$$y = 1$$

$$x = 3$$

$$a = : \boxed{1} \quad a1 = : \boxed{} \quad a2 = : \boxed{} \quad a3 = : \boxed{}$$

$$b = : \boxed{2} \quad b1 = : \boxed{} \quad b2 = : \boxed{} \quad b3 = : \boxed{}$$

$$c = : \boxed{-1} \quad c1 = : \boxed{} \quad c2 = : \boxed{} \quad c3 = : \boxed{}$$

$$d = : \boxed{-1} \quad d1 = : \boxed{} \quad d2 = : \boxed{} \quad d3 = : \boxed{}$$

$$e = : \boxed{3} \quad e1 = : \boxed{} \quad e2 = : \boxed{} \quad e3 = : \boxed{}$$

$$f = : \boxed{-1} \quad f1 = : \boxed{} \quad f2 = : \boxed{} \quad f3 = : \boxed{}$$

$$g = : \boxed{-2} \quad g1 = : \boxed{} \quad g2 = : \boxed{} \quad g3 = : \boxed{}$$

$$h = : \boxed{1} \quad h1 = : \boxed{} \quad h2 = : \boxed{} \quad h3 = : \boxed{}$$

b) Simplify the above expression (D) using the following boolean identities
the reason (Number of the boolean identity according to following number)

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

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

$$= (A + (BC))(\bar{A} + \bar{B}) \quad 7$$

$$= (A + (BC)).\bar{A} + (A + (BC)).\bar{B} \quad 7$$

$$= (A\bar{A} + (BC)\bar{A}) + (A\bar{B} + (BC)\bar{B}). \quad 7$$

$$= (0 + (BC)\bar{A}) + (A\bar{B} + 0) \quad 10$$

$$= (BC)\bar{A} + A\bar{B} \quad 3$$

DELL



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.

$$D = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix} \quad \begin{matrix} 5 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{matrix}$$

$$a = : \boxed{}$$

$$b = : \boxed{}$$

$$c = : \boxed{}$$

$$d = : \boxed{}$$

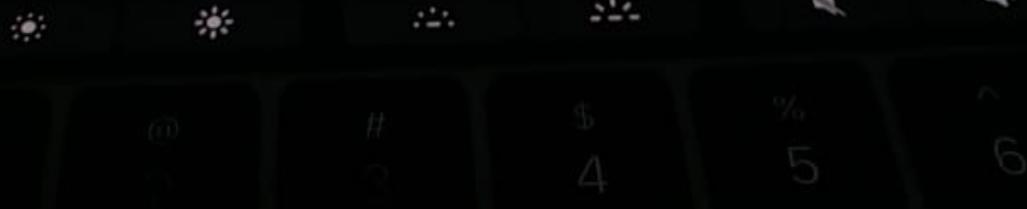
$$e = : \boxed{}$$

$$f = : \boxed{}$$

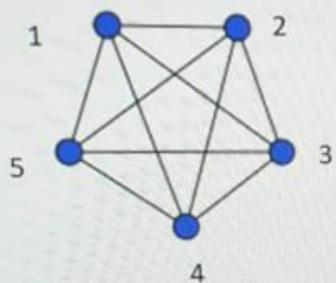
$$g = : \boxed{}$$

$$h = : \boxed{}$$

$$i = : \boxed{}$$



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

No

144Hz

acer



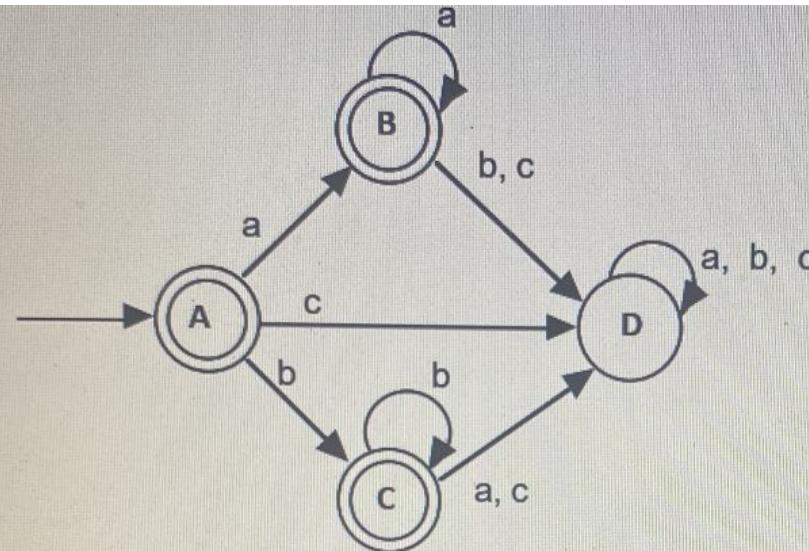
1.00

Flag question

Finish after

Time left 1:

| | |
|----|----|
| 1 | 2 |
| 8 | 9 |
| 15 | 16 |
| 22 | |



What is the initial State? **A**

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

Find $N(C, a)$ **D**

Find $N(D, b)$ **D**

A ▾

Choose... ▾
Choose...
D.
B.
A.
C.

Next page

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... ▾ no

Is f an onto function?

Choose... ▾ NO

Does f has an inverse function?

Choose... ▾ No

Q) Consider the following. Find the values of the unknowns.

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

$$1. r'_2 = r_2 - 3r_1$$

$$2. r'_3 = r_3 - 2r_1 \quad \begin{matrix} 1 & -2 & 0 & 1/2 & -1/10 & 2/5 \\ 0 & 1 & 0 & 0 & 1/10 & -3/5 \\ 0 & 0 & 1 & -1/2 & -1/10 & 2/5 \end{matrix}$$

$$3. r'_3 = r_3 - \frac{1}{4}r_2$$

$$4. r'_3 = r_3 \times \frac{2}{5}$$

$$5. r'_2 = r_2 - 6r_3$$

$$6. r'_2 = r_2 \times \frac{1}{4}$$

$$7. r'_1 = r_1 + r_3$$

| | | |
|-----|-----|-----|
| a = | b = | c = |
| d = | e = | f = |
| g = | h = | i = |
| | k = | l = |
| m = | n = | o = |
| q = | r = | |



Arrange the given sentences into a well-structured paragraph by ordering them from 01 - 06 accordingly.

If they are observed closely, this allows to undue pressure on their mind due to unhealthy competitions and sky rocketing expectations of their parents and teachers from them.

Choose... ▾

According to psychologists it is the result of fear due to inexperience, deprivation, isolation and feeling of inferiority among them.

Choose... ▾

It is a matter of grave concern that 'stress' or 'mental pressure' has emerged as a deadly and silent killer for teenagers of the day.

Choose... ▾

Whatever the reasons may be, the effects are disastrous leading to both physical and mental ailments like insomnia, hypertension and nervous breakdown etc.

Choose... ▾

In order to prevent these catastrophic diseases, children need to be taught to 'de-stress themselves' through meditation or cultural activities and this will inculcate feelings of self confidence in them and inspire them to face the realities of life in a better way.

Choose... ▾

Finally, the society as a whole must be aware of the importance of stress management.

Choose... ▾

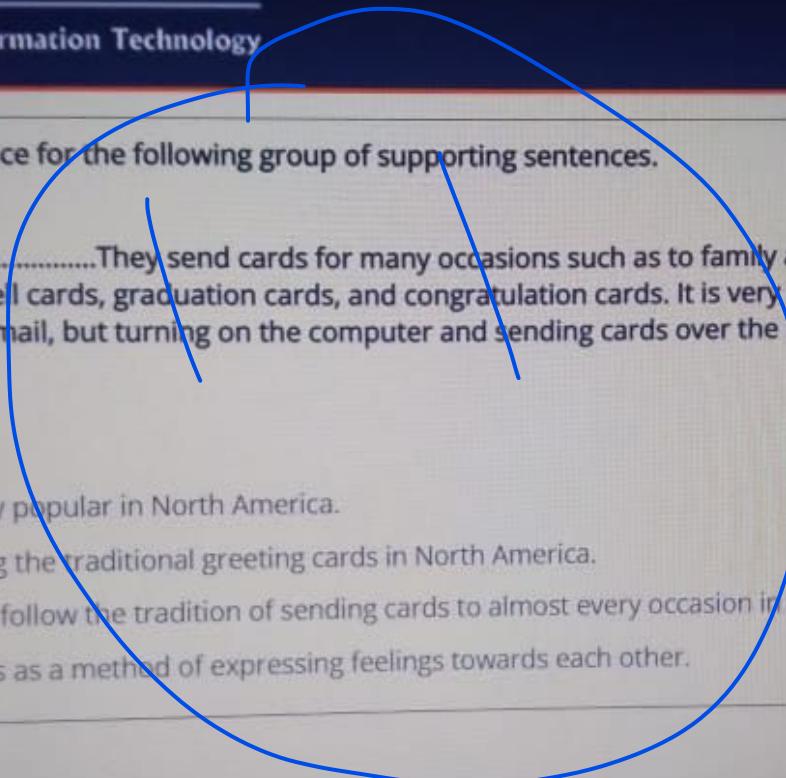


Choose the best topic sentence for the following group of supporting sentences.

.....They send cards for many occasions such as to family and friends on birthdays and holidays. They also send thank-you cards, get well cards, graduation cards, and congratulation cards. It is very common to buy cards in stores in North America and send them through the mail, but turning on the computer and sending cards over the internet is so popular.

Select one:

- a. Sending cards is very popular in North America.
- b. E-cards are replacing the traditional greeting cards in North America.
- c. All North Americans follow the tradition of sending cards to almost every occasion in their lives.
- d. Americans use cards as a method of expressing feelings towards each other.


Next page

≡ Quiz nav

Finish attempt...
Time left 0:13:36

- 1
- 2
- 3
- 4

expressive

modest

long

mid-twenties

optimistic

bold



Next page

Arrange the given sentences into a well-structured paragraph by ordering them from 01 - 06 accordingly.

The main flavonoids present in cocoa have been shown to relax blood vessels and lower blood pressure (Stresing 2004).

Choose... ▾

Chocolate has been shown to improve cardiovascular health.

Choose... ▾

Therefore, research indicates that small amounts of chocolate can indeed offer heart health benefits.

Choose... ▾

Cocoa, from which chocolate is made, contains flavonoids.

Choose... ▾

A study (Taubert et al. 2007) into the body's response to the low consumption of cocoa found that these health benefits are comparable to those achieved through the use of conventional blood pressure medicine.

Choose... ▾

When blood pressure is lowered, there is a reduced risk of health problems such as stroke and coronary heart disease.

Choose... ▾

Choose... ▾

3
4
6
1
2
5

Arrange the given sentences into a well-structured paragraph by ordering them from 01 - 06 accordingly.

The main flavonoids present in cocoa have been shown to relax blood vessels and lower blood pressure (Stresing 2004).

Chocolate has been shown to improve cardiovascular health.

Therefore, research indicates that small amounts of chocolate can indeed offer heart health benefits.

Cocoa, from which chocolate is made, contains flavonoids.

A study (Taubert et al. 2007) into the body's response to the low consumption of cocoa found that these health benefits are comparable to those achieved through the use of conventional blood pressure medicines.

When blood pressure is lowered, there is a reduced risk of health problems such as stroke and coronary heart disease.

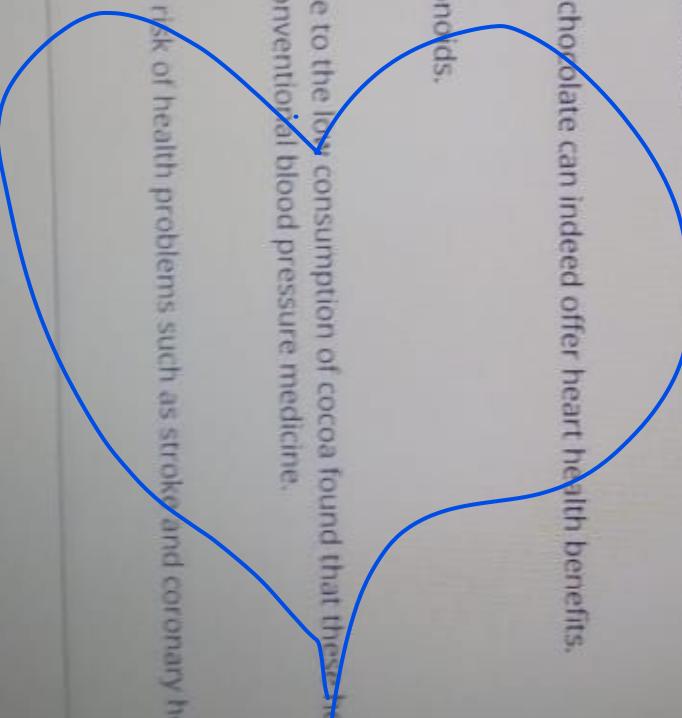
Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾



Question 16

Not yet answered

Marked out of
1.00

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).

$$15 * X + 8 * Y = 3850$$

$$8 * X + 5 * Y = 2200$$

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

$$Ax = b$$

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

$$p = : 15 \quad q = : 8$$

$$r = : 8 \quad s = : 5$$

$$c = : 3850$$

$$d = : 2200$$

Module 15

0 answered
0 out of 10

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Consider the following linear system of equations.

$$\begin{aligned}2x + y - z &= 6 \\3x - 2y - 3z &= 3 \\-x + y + 2z &= -3\end{aligned}$$

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 = : b = : c = :
d = : e = : f = :
g = : h = : i = :
p = :
q = :
r = :

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$|A_1| = \begin{bmatrix} a & b & c \\ x & y & z \end{bmatrix}$$



Question 2

Not answered.
0 out of
18 question

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

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:

68/9

ion 4

et answered

d out of

g question:

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... ▾

C_{31} Choose... ▾

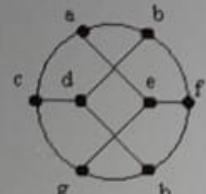
Question 5

Not yet answered

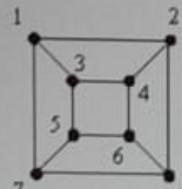
Marked out of
1.00

 Flag question

Consider the following 2 graphs.



G



H

Number of Components

1

H

Number of Vertices

8

1

Number of Edges

12

8

Degree Sequence

3, 3, 3, 3, 3, 3, 3, 3

3, 3, 3, 3, 3, 3, 3, 3

Are they isomorphic?

G and H are

isomorphic

Not isomorphic

3

answered
out of

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



Question 7

Not yet answered

Marked out of
10

Flag question

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 = : 840

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

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

Answer = : 140

Next page



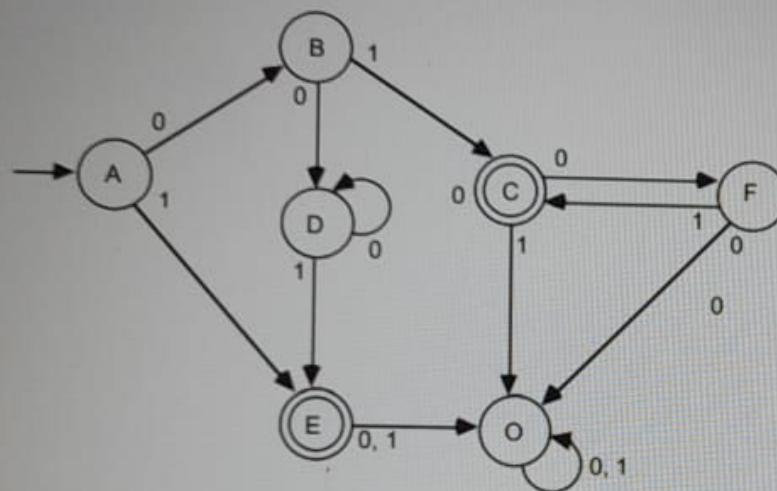
Question 6

Not yet answered

Marked out of
1.00

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... ▾

Choose... ▾

- O
- B
- A
- C
- E
- F
- D

Next page



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Question **8**

Not yet answered

Marked out of
1.00

Flag question

Find the following definite integral.

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

$$\int_1^4 \frac{8}{\sqrt{t}} - 12\sqrt{t^3} dt = \textcolor{red}{-664/5}$$





7
answered
out of
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 4 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



Question 10

Not yet answered

Marked out of

0

Flag question

Find the derivative of the following function.

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

$$y = \sqrt{x} + 8 \sqrt[3]{x} - 2 \sqrt[4]{x}$$

$$y' = \boxed{1/2} x^{\boxed{-1/2}} + \boxed{8/3} x^{\boxed{-2/3}} - \boxed{1/2} x^{\boxed{-3/4}}$$



Question 10

Not yet answered

Marked out of

0

Flag question

Find the derivative of the following function.

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

$$y = \sqrt{x} + 8\sqrt[3]{x} - 2\sqrt[4]{x}$$

$$y' = \boxed{} x^{\boxed{}} + \boxed{} x^{-2/3} - 1/2 x^{\boxed{}}$$

Question 13

Not yet answered
Marked out of
1.00 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.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Quiz navigation

Finish attempt...

Time left 0:28:33

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| 17 | 18 | 19 | 20 | 21 | 22 | | |
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NetExam

Sri Lanka Institute of Information Technology

Question 12

Not yet answered

Marked out of
1.00

Flag question

Find the following definite integral.

$$\int_{-2}^{0} |4x - 5| dx$$

Answer:

18

[Next page](#)



Question 14

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

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

1. Find $f'(-4)$: -248

2. Find the definite integral of $f(x)$ from -3 to 3 : 996/5

(Round your answer to one decimal place)

Next page

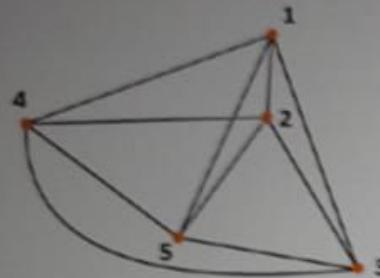
Question 17

Not yet answered

Marked out of
1.00

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
- No

Quiz navigation

Finish attempt ...

Time left 0:05:23

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