

X New Tab X



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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 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 data)

$$Ax = b$$

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

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

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

$$c = : 2350$$

$$d = : 3300$$

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

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

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 = : 2304

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

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

Answer = : 576

New Tab

d) Find y using the cramer's rule.

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

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

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

$$g = : 1 : \quad h = : 12 : \quad i = : 3 :$$

$$|A_2| = : -84 :$$

$$y = : 2 :$$

d) Find z using the cramer's rule.

$$z = \frac{|A_3|}{|A|}, A_3 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

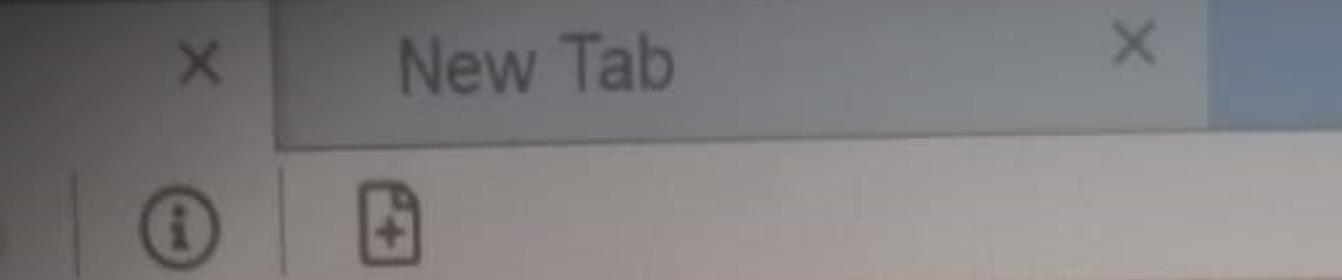
$$a = : 2 : \quad b = : 3 : \quad c = : 1 :$$

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

$$g = : 1 : \quad h = : 2 : \quad i = : 12 :$$

$$|A_3| = : -126 :$$

$$y = : 3 :$$



b) Find the determinant of A. : -42

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 = : 1 b = : 3 c = : -1

d = : 1 e = : -2 f = : 2

g = : 12 h = : 2 i = : 3

|A1| = : 42

x = : -1

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 b = : 1 c = : -1

d = : 3 e = : 1 f = : 2



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

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

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

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

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

$$p = : 1$$

$$q = : 1$$

$$r = : 12$$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

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

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

 C_{11} C_{12} C_{13} C_{21} C_{22} C_{23} C_{31} C_{32}



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





Find the derivative of the following function.

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

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

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



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

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

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

$$= A \cdot 1 + \bar{A}B + \bar{A}C \quad 3$$

$$= A(\bar{A} + 1) + \bar{A}B + \bar{A}C \quad 10$$

$$= A\bar{A} + A + \bar{A}B + \bar{A}C \quad 9$$

$$= \bar{A}(A + B + C) + A \quad 9$$



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Obtain the truth table for the following expression.

$$D = A + \overline{A}B + \overline{A}C$$

A	B	C	$\overline{A}B$	$\overline{A}C$	$A + \overline{A}B + \overline{A}C$
0	0	0	0	0	0
0	0	1	0	1	1
0	1	0	1	0	1
0	1	1	1	1	1
1	0	0	0	0	1
1	0	1	0	0	1
1	1	0	0	0	1
1	1	1	0	0	1

b) Simplify the above expression (D) using the following boolean identity
 the reason (Number of the boolean identity according to 5.1)

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

$$C = \begin{bmatrix} a_1 & a_2 \\ a_3 & a_4 \end{bmatrix}$$

$$a_1 = : 40 \quad a_2 = : -50$$

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

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

Cost of an adult ticket = : 50

Cost of a child ticket = : 20

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 7, 6, 5, 4, 2, 2, 2, 1, 1, 1, 1.

Does this graph exist?

Yes

No

Number of Edges of the above graph = :

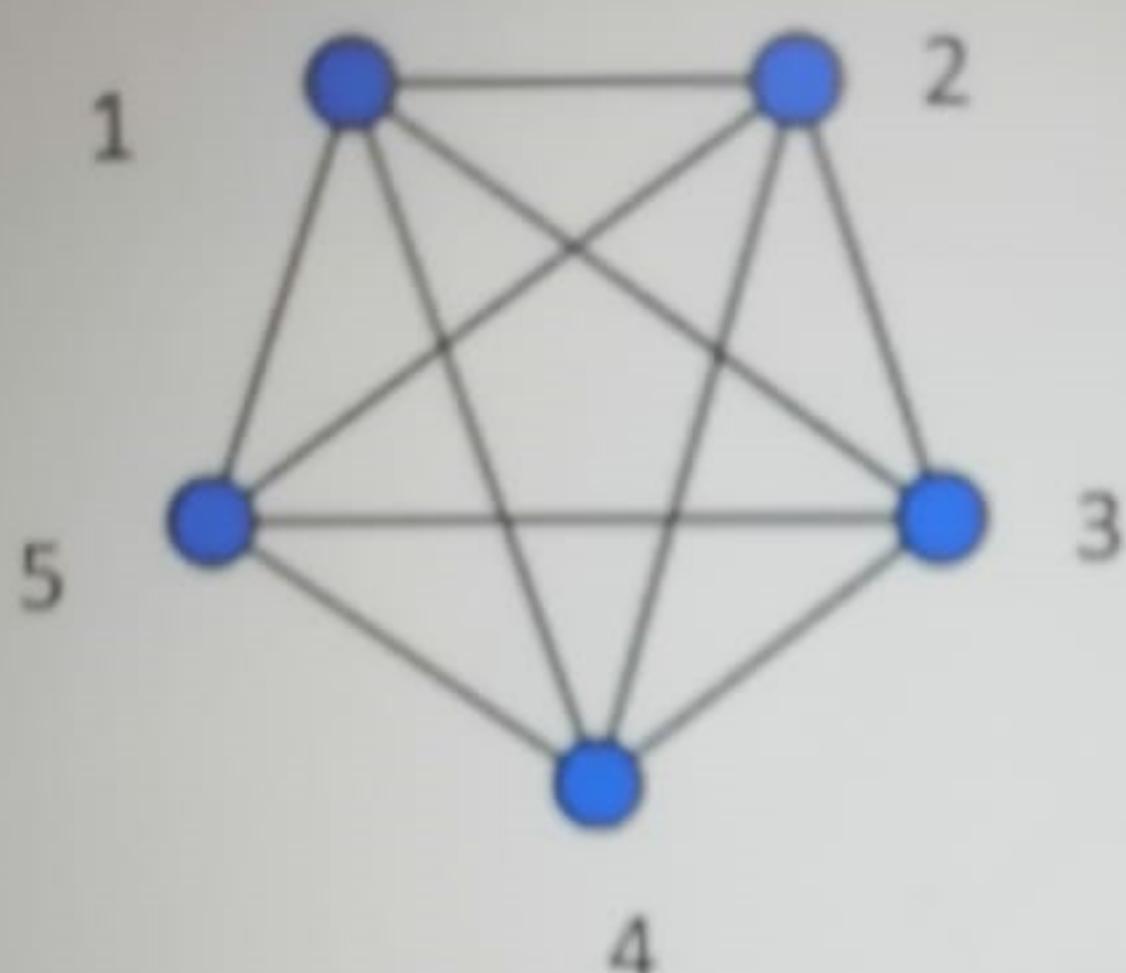
Does it has an Euler path?

Yes

No

Does it has an Euler circuit?

a) Determine whether the following graph has Euler path



Euler Path =

- Yes
- No



Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

- Yes
- No

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

$$r'_2 = r_2 + r_1$$

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

$$r'_3 = r_3$$

$$a = : 1$$

$$a1 = : 1$$

$$a2 = : 1$$

$$a3 = : 1$$

$$b = : 2$$

$$b1 = : 2$$

$$b2 = : 2$$

$$b3 = : 2^I$$

$$c = : -1$$

$$c1 = : -1$$

$$c2 = : -1$$

$$c3 = : -1$$

$$d = : -1$$

$$d1 = : 0$$

$$d2 = : 0$$

$$d3 = : 0$$

$$e = : 3$$

$$e1 = : 5$$

$$e2 = : 5$$

$$e3 = : 5$$

$$f = : -1$$

$$f1 = : -2$$

$$f2 = : -2$$

$$f3 = : -2$$

$$g = : -2$$

$$g1 = : -2$$

$$g2 = : 0$$

$$g3 = : 0$$

$$h = : 1$$

$$h1 = : 1$$

$$h2 = : 5$$

$$h3 = : 0$$

$$i = : 2$$

$$i1 = : 2$$

$$i2 = : 0$$

$$i3 = : 2$$

$$p = : 1$$

$$p1 = : 1$$

$$p2 = : 1$$

$$p3 = : 1$$

$$q = : -4$$

$$q1 = : -3$$

$$q2 = : -3$$

$$q3 = : -3$$

$$r = : 3$$

$$r1 = : 3$$

$$r2 = : 5$$

$$r3 = : 8$$

2. To find the solution, of the above linear system, obtain the augmented matrix.

From row 3,

1

*X +

2

*Y +

1

*7 =

17

New Tab

$$g = : -2 \quad g1 = : -2 \quad g2 = : 0 \quad g3 = : 0$$

$$h = : 1 \quad h1 = : 1 \quad h2 = : 5 \quad h3 = : 0$$

$$i = : 2 \quad i1 = : 2 \quad i2 = : 0 \quad i3 = : 2$$

$$p = : 1 \quad p1 = : 1 \quad p2 = : 1 \quad p3 = : 1$$

$$q = : -4 \quad q1 = : -3 \quad q2 = : -3 \quad q3 = : -3$$

$$r = : 3 \quad r1 = : 3 \quad r2 = : 5 \quad r3 = : 8^I$$

2. To find the solution, of the above linear system, obtain the thr augmented matrix.

From row 3,

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

From row 2,

$$0 *X + 5 *Y + -2 *Z = -3$$

From row 1,

$$0 *X + 0 *Y + 2 *Z = 8$$

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

$$X = : 3$$

$$Y = : 1$$

$$Z = : 4$$

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 eq form.

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

$$r'_2 = r_2 + r_1$$

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

$$r'_3 = r_3 - r_2$$

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

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

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

$$d = : -1 \quad d_1 = : 0 \quad d_2 = : 0 \quad d_3 = : 0$$

$$e = : 3 \quad e_1 = : 5 \quad e_2 = : 5 \quad e_3 = : 5$$

$$f = : -1 \quad f_1 = : -2 \quad f_2 = : -2 \quad f_3 = : -2$$

$$g = : -2 \quad g_1 = : -2 \quad g_2 = : 0 \quad g_3 = : 0$$

$$h = : 1 \quad h_1 = : 1 \quad h_2 = : 5 \quad h_3 = : 0$$

$$i = : 2 \quad i_1 = : 2 \quad i_2 = : 0 \quad i_3 = : 2$$

$$p = : 1 \quad p_1 = : 1 \quad p_2 = : 1 \quad p_3 = : 1$$

$\alpha = : 4$

$\alpha_1 = : 1$

$\alpha_2 = : 1$

$\alpha_3 = : 1$



n 3

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 on to function?

Yes

No

b) Does the inverse exist?

Yes

No

b) What is the inverse function?

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

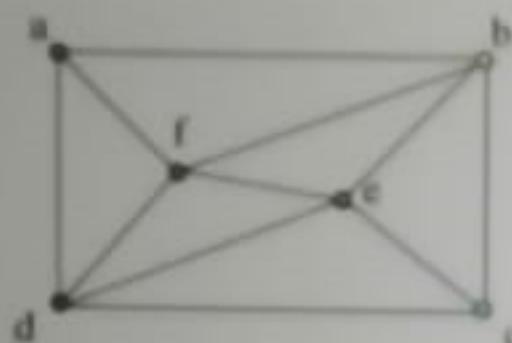
$f^{-1}(x) = 1/x$

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

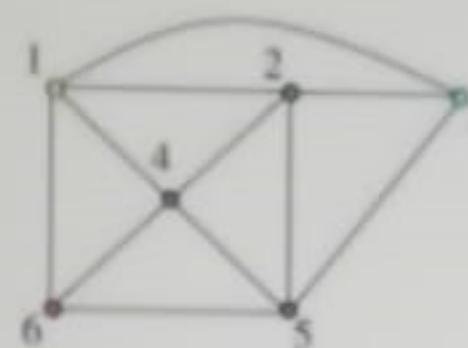
Does not exist



Consider the following 2 graphs.



G



H

Number of Components

1

1

Number of Vertices

6

6

Number of Edges

11

11

Degree Sequence

4 , 4 , 4 , 4 3 , 3

4 , 4 , 3 , 3 3 , 3

Are they isomorphic?

G and H are

isomorphic

Not Isomorphic

1
answered
out of
question

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

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 = :

3	<i>k</i>	<i>t</i>	<i>m</i>	<i>n</i>
4	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
5	<i>u</i>	<i>v</i>	<i>w</i>	<i>x</i>

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 7, 6, 5, 4, 2, 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

← → X | ① | 

C_{21} v

C_{22} v

C_{23} v

C_{31} v

C_{32} v

C_{33} v

X



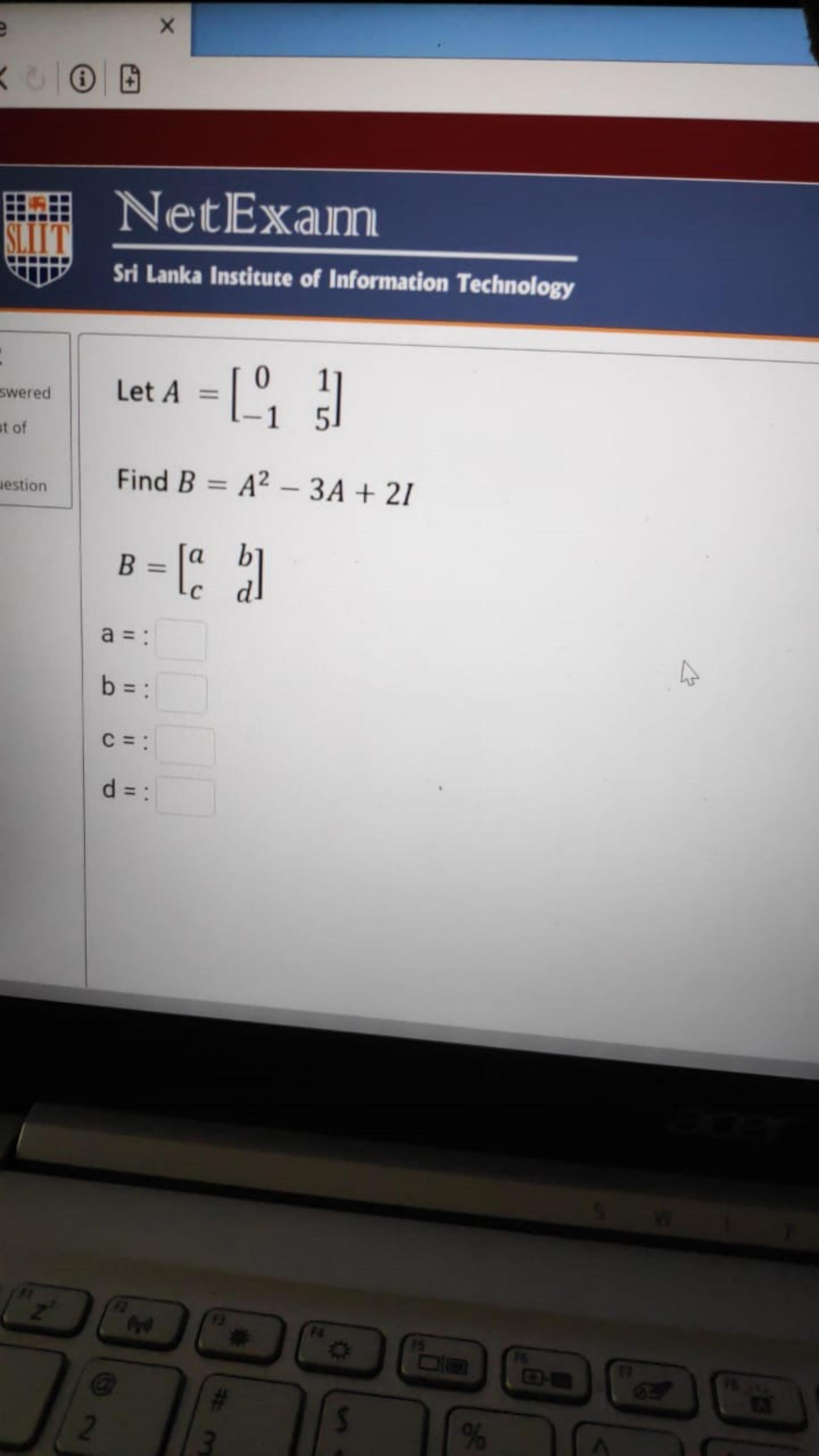
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Find the following definite integral.

(If your answer is not an integer, then write it as

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



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

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

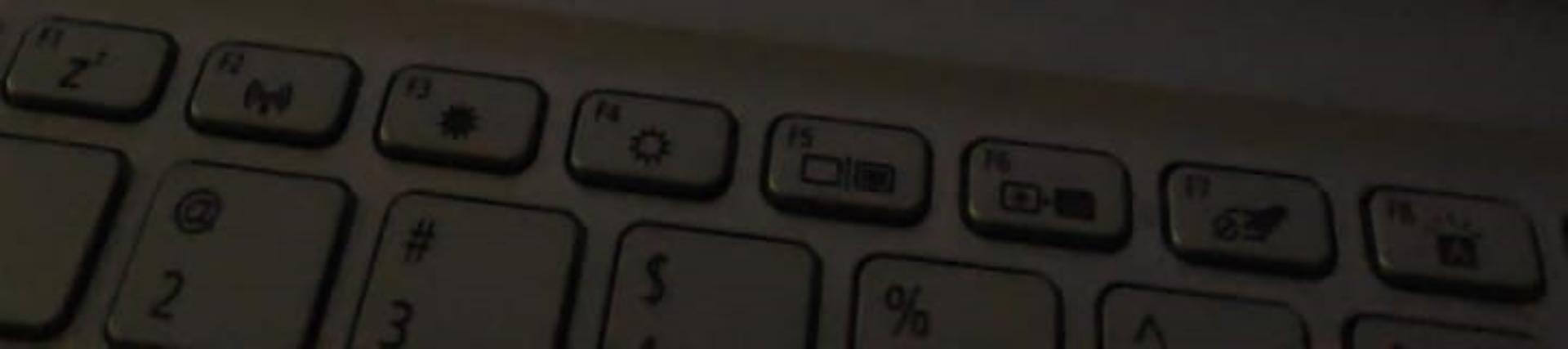
$$B = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

a = :

b = :

c = :

d = :



A	B	C	$\bar{A} \bar{B} C$	$\bar{A} B \bar{C}$	AB	D
0	0	0	0	1	0	1
0	0	1	0	0	0	0
0	1	0	0	0	0	0
0	1	1	0	0	0	0
1	0	0	0	0	0	0
1	0	1	1	0	0	0
1	1	0	0	0	0	1
1	1	1	0	0	1	1

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

DELL

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

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

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

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

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

$$p = : \boxed{}$$

$$q = : \boxed{}$$

$$r = : \boxed{}$$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

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



Consider the following linear system of equations.

$$\begin{aligned}x + 2y - z &= 1 \\-x + 3y - z &= -4 \\-2x + y + 2z &= 3\end{aligned}$$

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

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

$$r'_2 = r_2 + r_1$$

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

$$r'_3 = r_3 - r_2$$

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

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

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

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

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

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

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

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

Obtain the truth table for the following expression.

$$D = A + \overline{A} B + \overline{A} C$$

A	B	C	$\overline{A} B$	$\overline{A} C$	$A + \overline{A} B + \overline{A} C$
0	0	0			
0	0	1			
0	1	0			
0	1	1			

DELL



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stion 2

yet answered

ked out of

Flag question

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 = :



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

$$f: N \rightarrow N \quad f(n) = n^2$$

Is f a One to one function?

Yes

Is f an onto function?

Yes

Does f has an inverse function?

Yes

DELL

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) $11110101 + 10010111 = \boxed{110001100}$ (Write your answer with 9 digits)

ii) $11110101 - 10010111 = \boxed{1011110}$ (Write your answer with 7 digits)

iii) $11110101 \times 10000 = \boxed{111101010000}$ (Write your answer with 12 digits)

iv) $11110101 \div 111 = \boxed{}$

Quotient = (Write your answer with 6 digits)

Remainder = (Write your answer with 2 digits)

3

answered
out of
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 = :

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

Answer = :

Next page

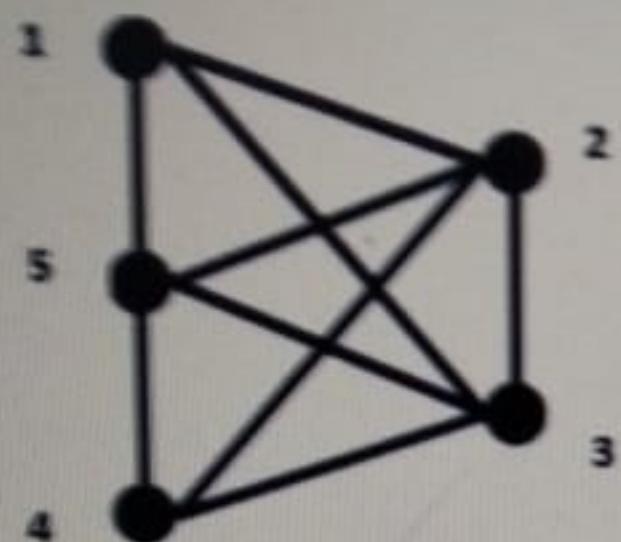
Question 4

Not yet answered

Marked out of
33.33

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

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 = : 0 b = : 1 c = : 1 d = : 0 e = : 0

f = : 1 g = : 0 h = : 1 i = : 1 j = : 1

k = : 1 l = : 1 m = : 0 n = : 1 o = : 1

p = : 0 q = : 1 r = : 1 s = : 0 t = : 1

u = : 1 v = : 1 w = : 1 x = : 1 y = : 0

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 = : 14

Does it has an Euler path?

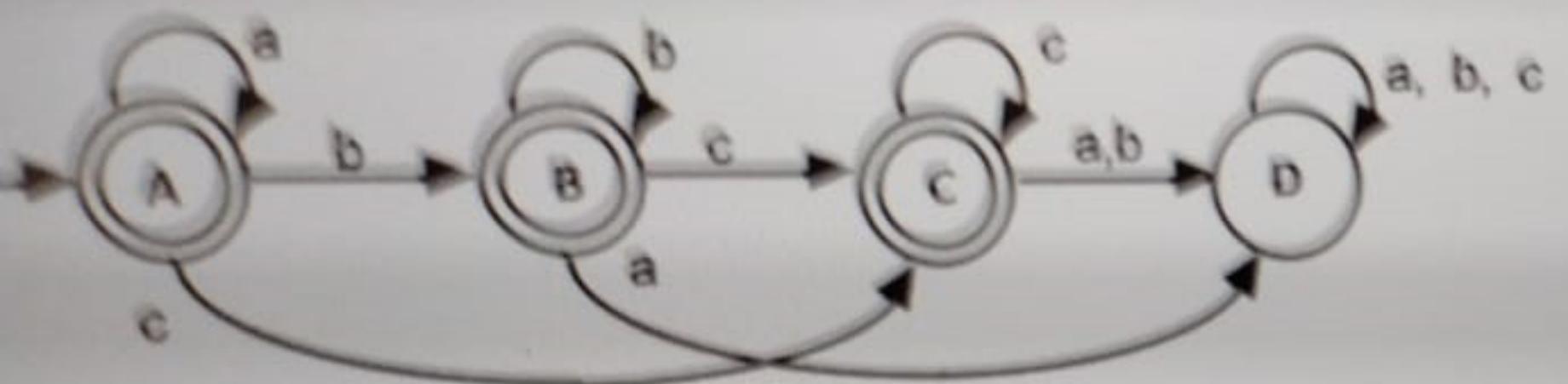
Yes

No

Does it has an Euler circuit?

Yes

the following finite state Machine A.



s the initial State?

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

N(C, a)

N(D, b)

A

D

D

D

Next page

≡ Quiz navigation

Finish attempt...

Time left 1:47:13



EXAM QUESTIONS

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

FEEDBACK QUESTION

23

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

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

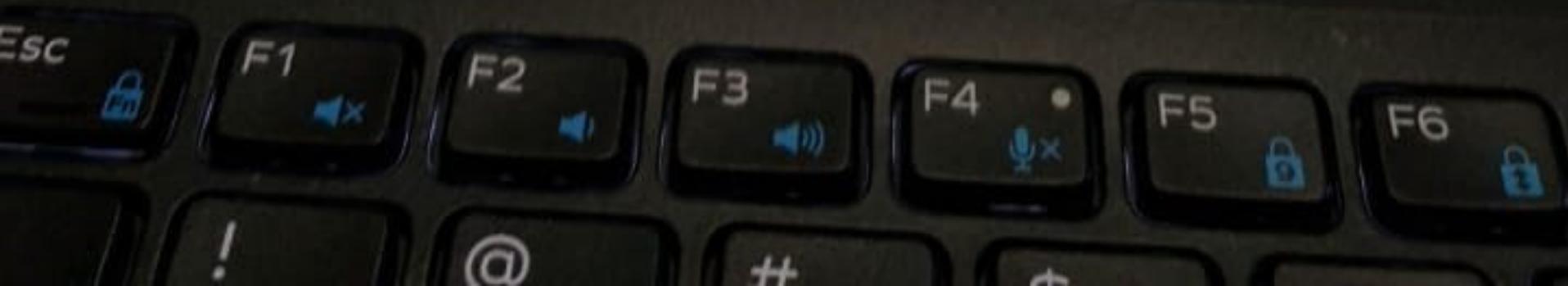
C_{11} ▾

C_{12} ▾

C_{13} ▾

C_{21} ▾

C_{22} ▾



C₂₂

-9

C₂₃

2

C₃₁

21

C₃₂

28

C₃₃

-11

DELL

F1

F2

F3

F4

F5

F6

F7

! 1

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3

\$ 4

% 5

^ 6



Question 3

Not yet answered

Marked out of
10.00

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 = :

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](#)

Quiz

Finish attempt

Time left 1:45

1

EXAM QUESTIONS

1

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8

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16

22

FEEDBACK QUESTIONS

23



2

answered

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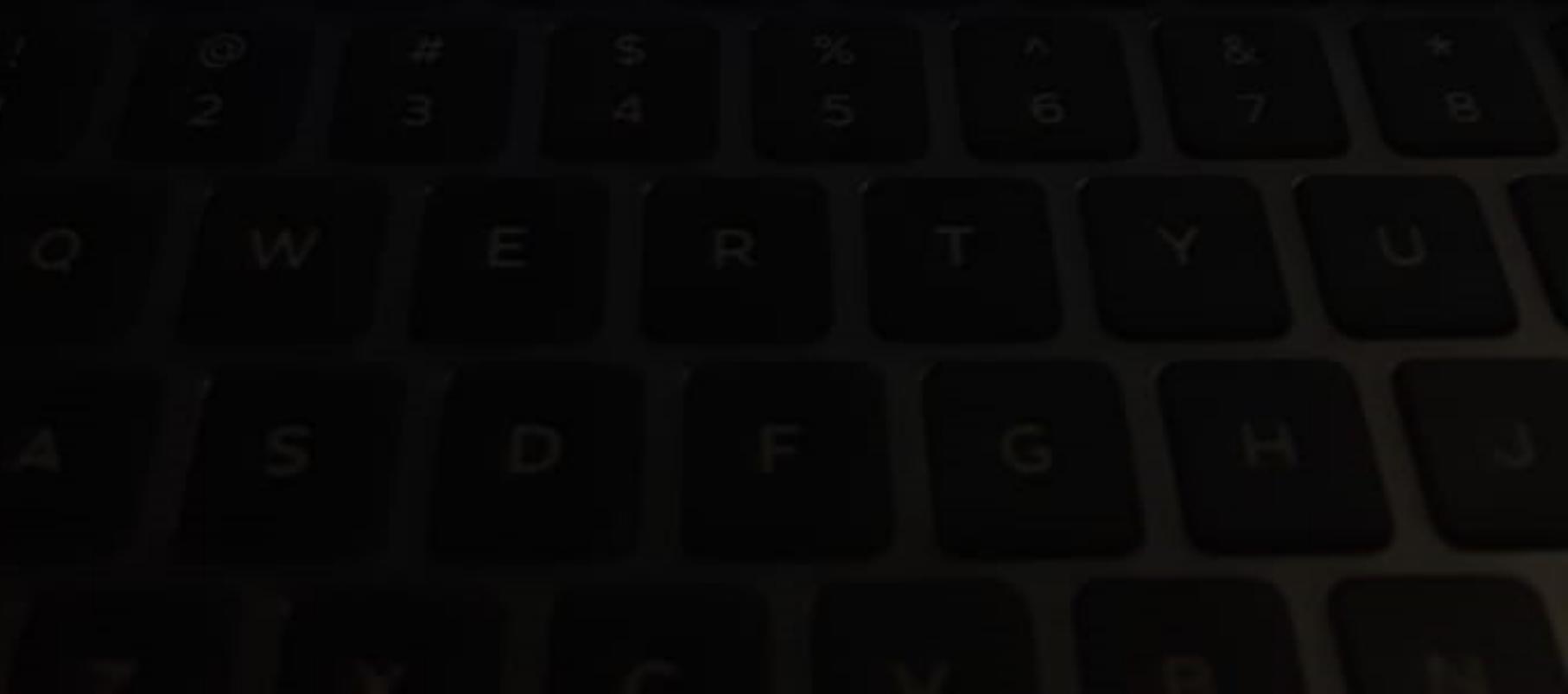
g question

Find the following definite integral.

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

(Please remove spaces from the answer)

Answer: 27



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

X

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Find the following definite integral.

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

Answer:



Find the following definite integral.

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

Answer: 18

I

John is running a concession stand at a volleyball game. John is selling Noodle 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?

$$\star X + \star Y =$$

$$\star X + \star Y = 90$$

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

$$Ax = b$$

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

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

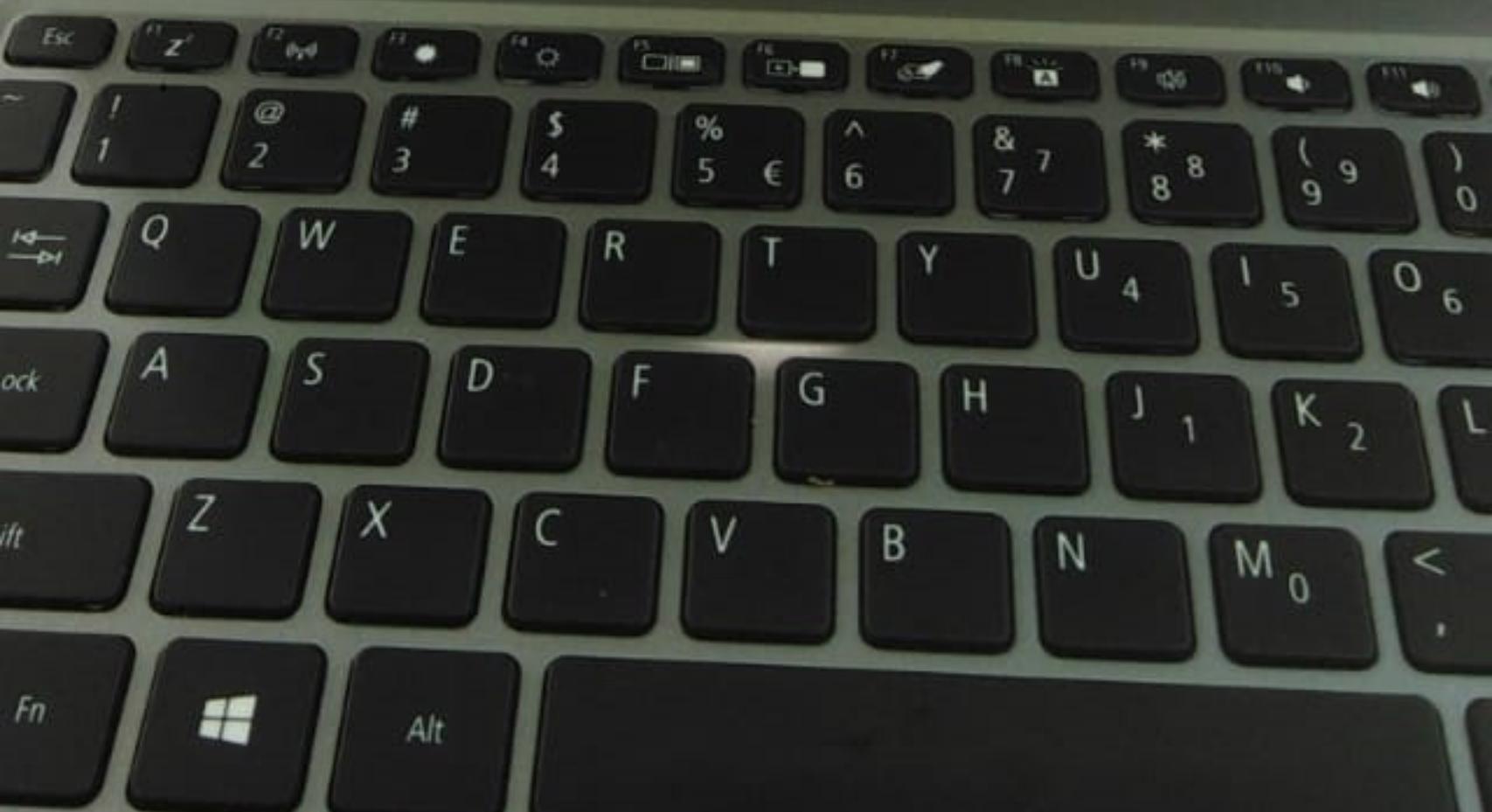
$$r = : \quad s = :$$

$$c = :$$

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Assume I is the identity matrix.

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

a = : 3

b = : 4

c = : 28

d = : 0

e = : -17

f = : 8

g = : 8

h = : 4

i = : 7

DELL

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

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

Is f a One to one function?

Is f an onto function?

Does f has an inverse function?

DELL

F1 F2 F3 F4 F5 F6 F7

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

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)

I

Answer: 6/64

DELL

John is running a concession stand at a volleyball game. John is selling Noodle and Milo packets. Each Noodle pack costs 80LKR and each Milo packet costs 100LKR. At the end John had a total of 5700LKR. John sold a total of 90 Noodle and Milo Packets combined. Write down 2 equations to find, number of Noodle packs (x) and Milo packets (y) sold?

$$80 * X + 50 * Y = 5700$$

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

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

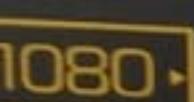
$$Ax = b$$

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

$$P = \boxed{?} \quad Q = ?$$

110

8



S W I F T



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

Equivalent Binary Number (x) = Equivalent x

Equivalent Octal Number (y) =

Equivalent Hexadecimal Number (z) = 1D1C

b) Find:

(Write your answer for 2's complement with 13 digits)
2's Complement of x (x') =

8's Complement of v =

16's Complement of z = E2E4

Fill in the blanks

$$10101010 + 11001100 = \boxed{0101110110} \text{ (Write your answer with 9 digits)}$$
$$11001100 - 10101010 = \boxed{01000110} \text{ (Write your answer with 9 digits)}$$

$$11001100 - 10101010 = \underline{\hspace{9em}} \quad (\text{Write your answer with 9 digits})$$

$$1001100 \times 1010 = \boxed{010111100} \text{ (Write your answer with 6 digits)}$$

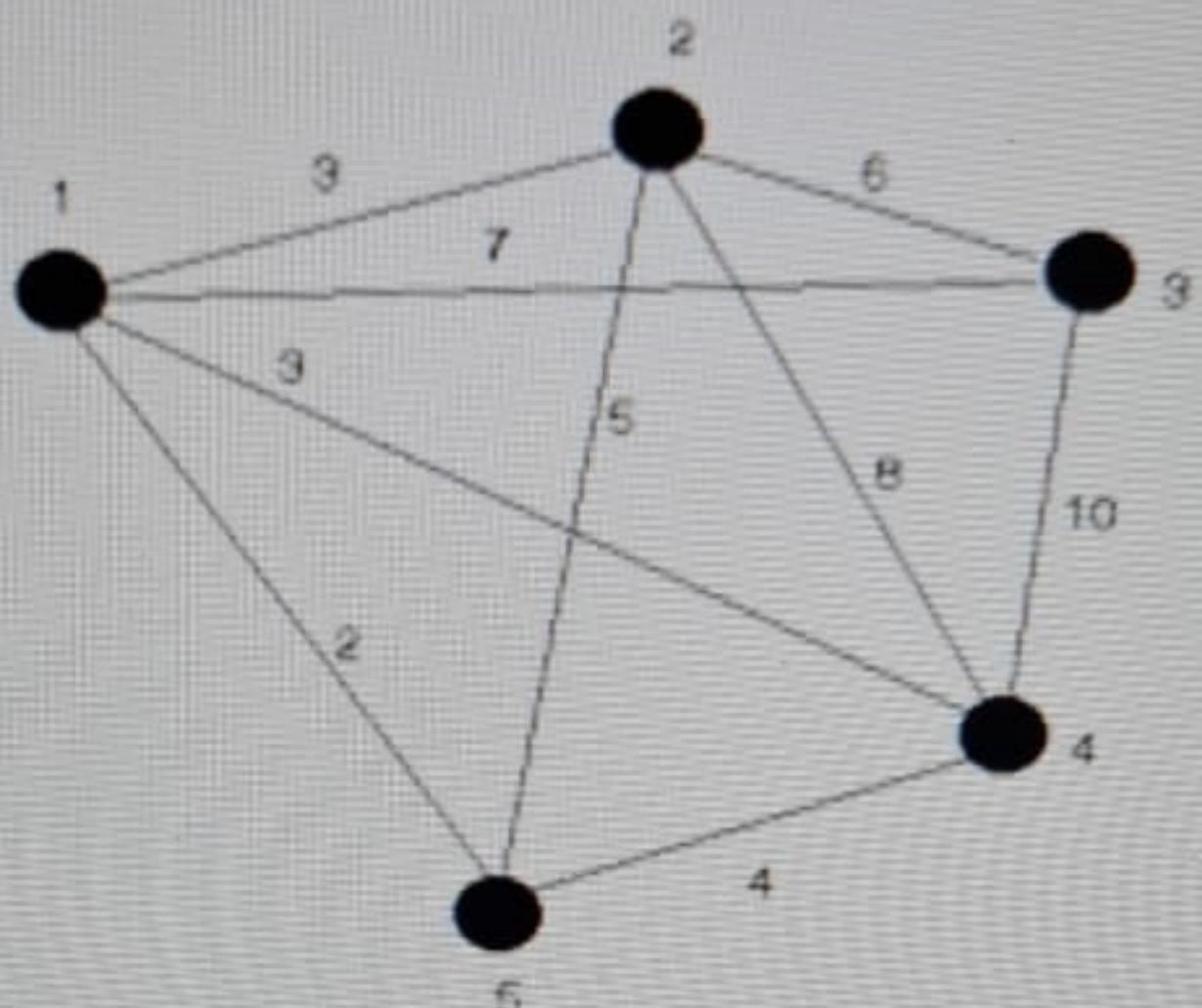
$1001100 \div 101$ (Write your answer with 10 digits)

patient

otient = 01111 (Write your answer with 4 digits)

DELL

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



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

Exam

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

is one-to-one function?

an onto function?

the inverse exist?

is the inverse function?

x

$1/x$

$x-1$

At the end John had a total of 5700LKR. John sold 80 Milo Packets combined. Write down 2 equations for packs(x) and Milo packets (y) sold?

$$80 * X + 50 * Y = 5700$$

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

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

$$Ax = b$$

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

$$p = : 80 \quad q = : 50$$

$$r = : 1 \quad s = : 1$$

$$c = : 5700$$

$$d = : 90$$

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

$$\begin{vmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{vmatrix}$$

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5

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g question

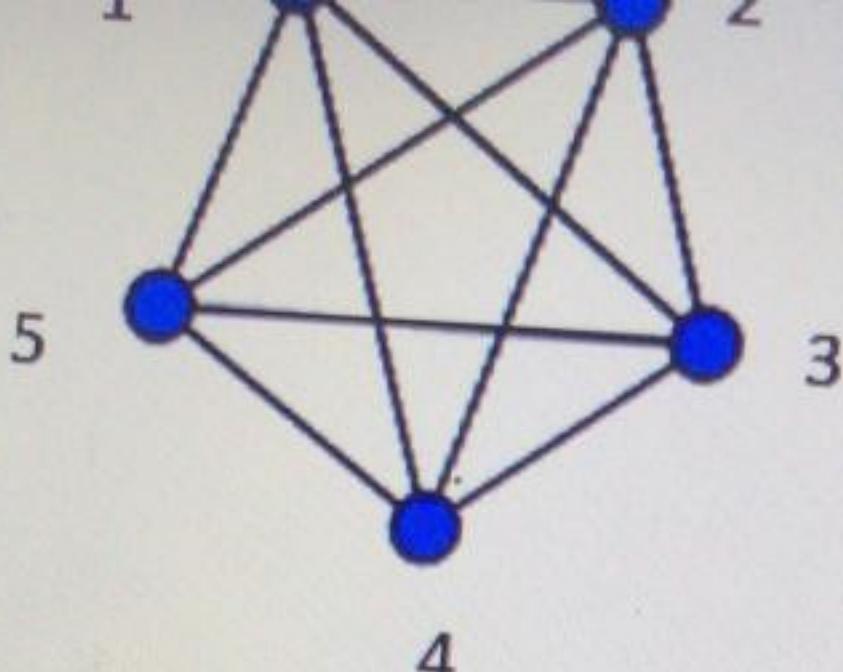
Simplify the following boolean expression.

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

Select one:

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

Next



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =

- Yes
- No

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Flag question

Consider the following linear system of equations.

$$\begin{aligned}x + 2y + z &= 5 \\ -2x + 3y - 3z &= 4 \\ 4y + 2z &= 8\end{aligned}$$

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

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

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

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

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

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

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

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

b) Find the determinant of A. :

c) Find x using the cramer's rule.

$$|A_1| . \begin{bmatrix} a & b & c \\ \boxed{I} & \boxed{\quad} & \boxed{\quad} \end{bmatrix}$$

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).

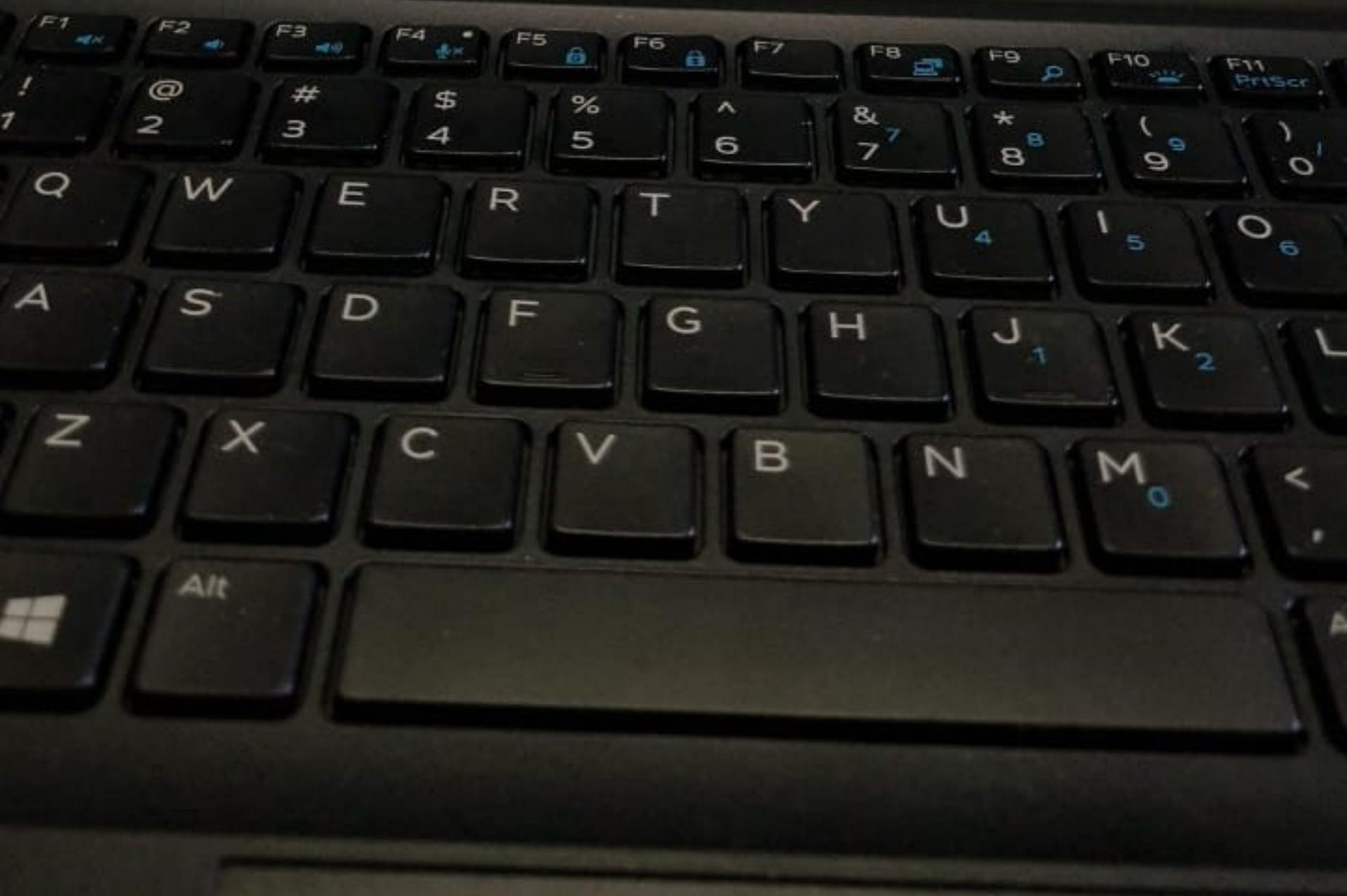
$$Ax = b$$

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

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

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

DELL



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5
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out of
question

Find the derivative of the following function.

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

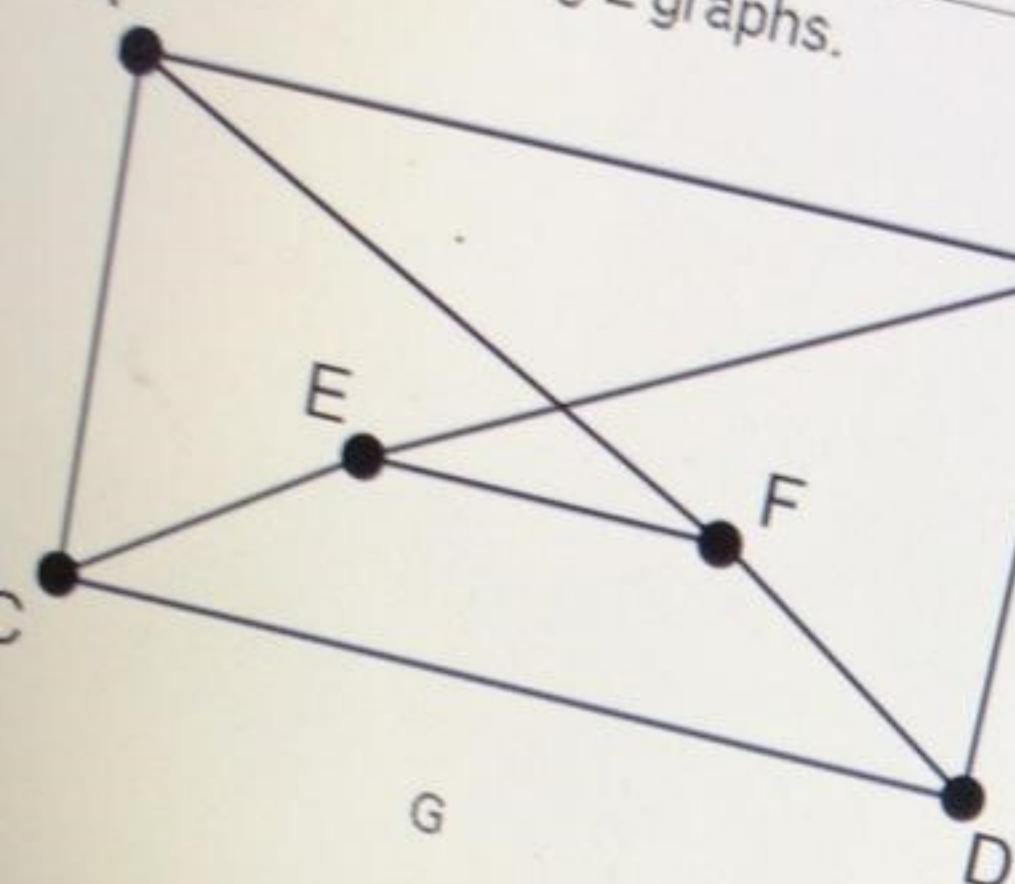
$$h(x) = \frac{4x^3 - 7x + 8}{x}$$

$$h'(x) = \quad x \cdot \quad x$$

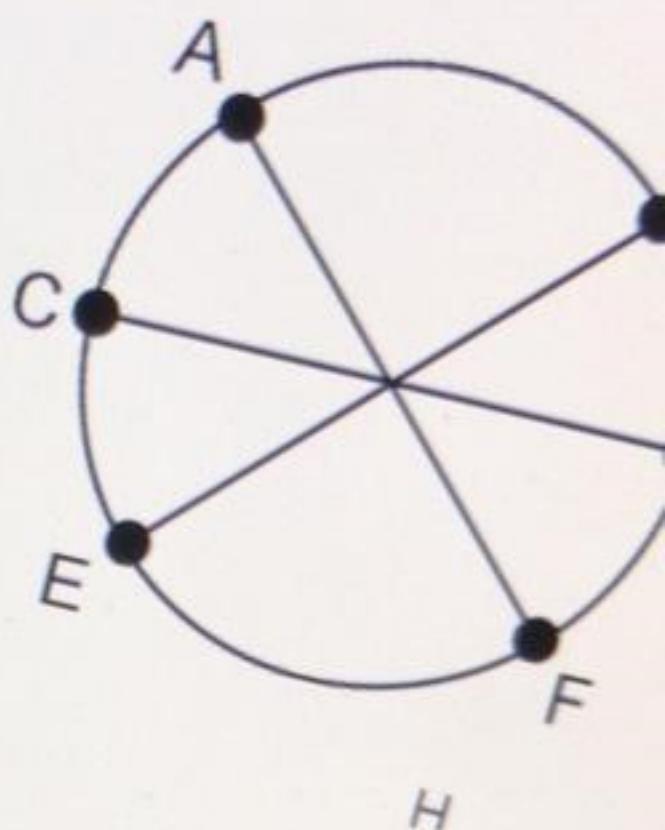
DELL

Consider the following 2 graphs.

a) A



b)



Number of Components

Number of Vertices

Number of Edges

Sequence

Isomorphic?

G

1

6

7

3 , 3 , 3 , 3 , 3 , 3

H

1

6

9

3 , 3 , 3 , 3 , 3 , 3

DELL

- 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

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

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

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

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

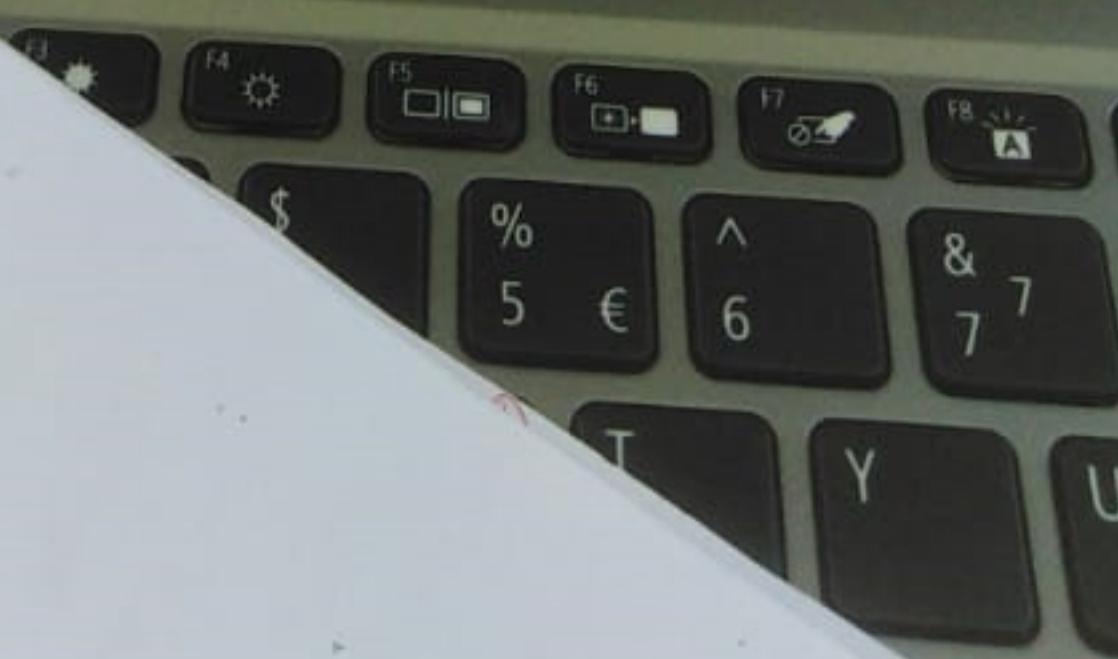
$$= (0 + (BC)\bar{A}) + (A\bar{B} + 0)$$

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

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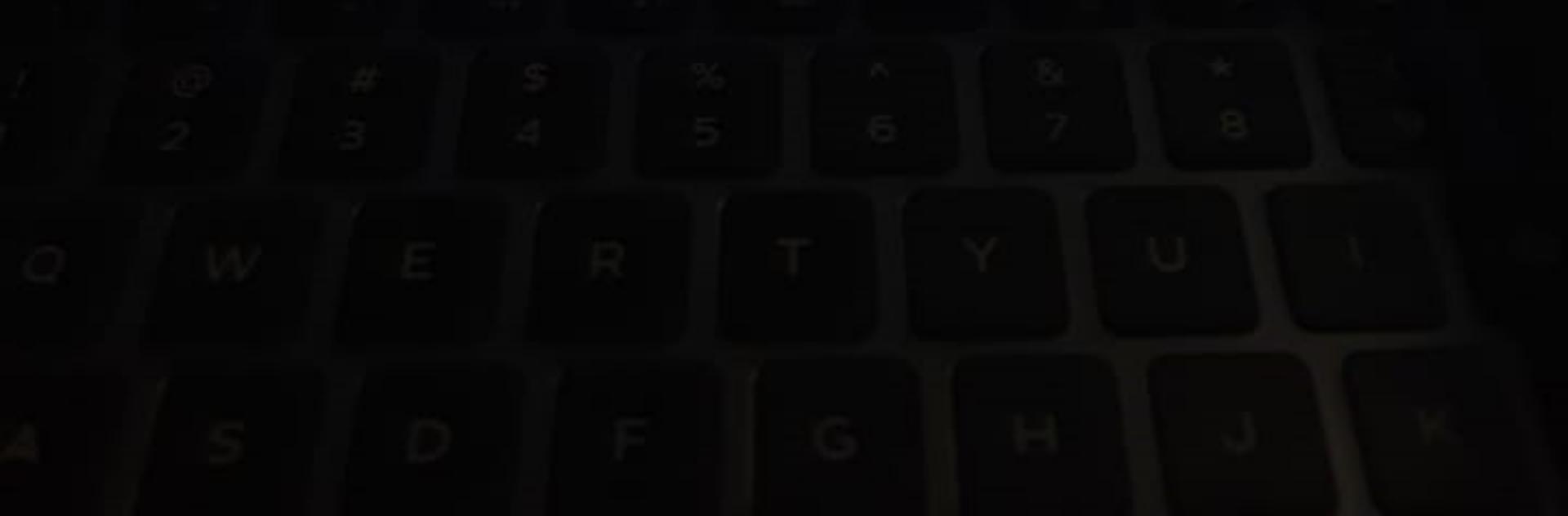
Sri Lanka Institute of Information Technology

Find the following definite integral.

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

$$\int_1^6 12x^3 - 9x^2 + 2 \, dx = 3250 \quad |$$

DELL





Question 7

Not yet answered

Marked out of
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Flag 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)

DELL



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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).

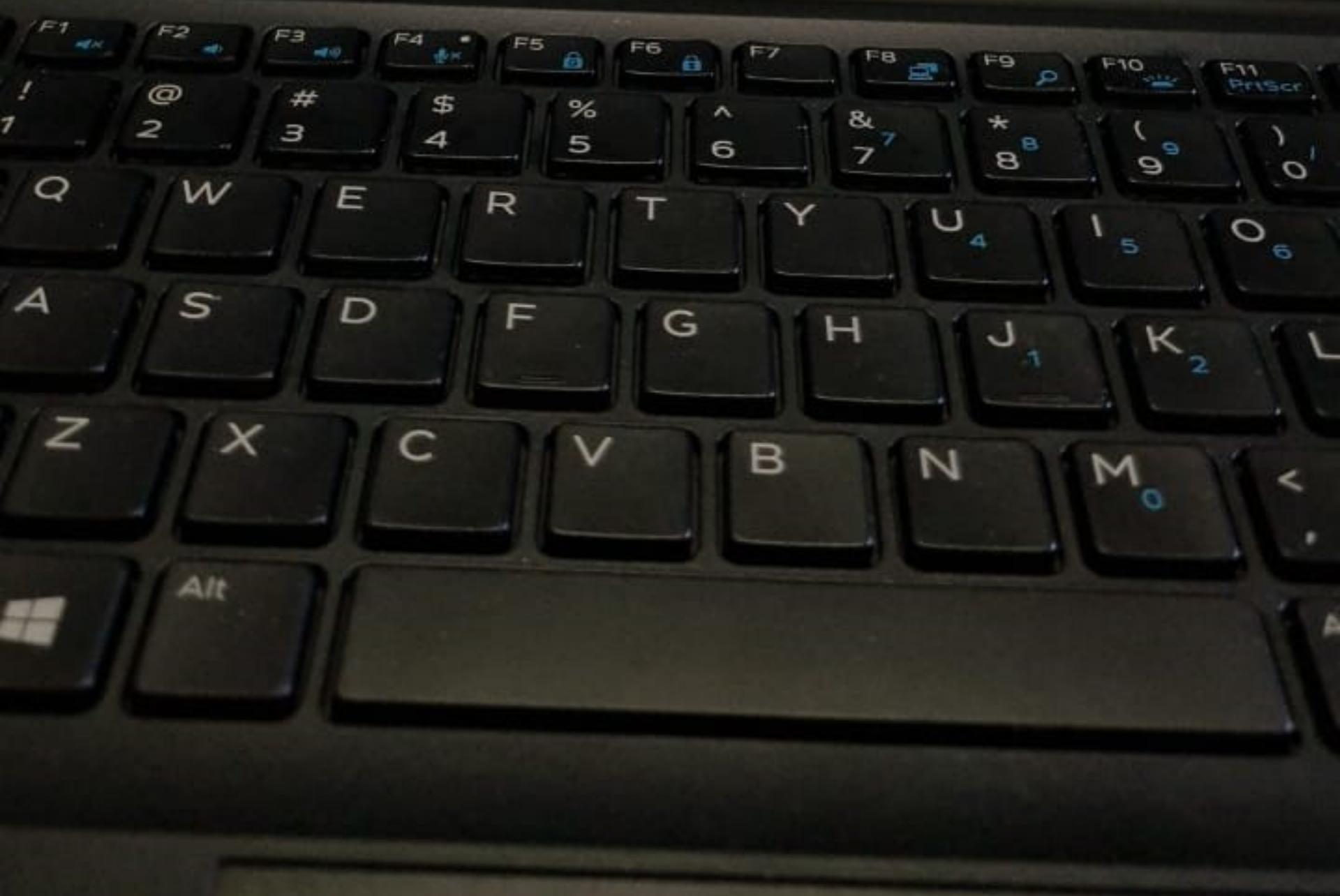
$$Ax = b$$

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

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

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

DELL



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Consider the following finite state Machine A.

```
graph LR; start(( )) --> a((a)); a -- 1 --> a; a -- 0 --> b((b)); b -- 1 --> a; b -- 0 --> b; b -- 1 --> c((c)); c -- 1 --> d((d)); d -- 0 --> e((e)); e -- 0 --> f(((f))); e -- 1 --> d; f -- "0,1" --> f;
```

is the initial State?

What state does A go if 1010111 input to A in sequence starting from the initial state?

1)

a

b

c

d

e

f

Next page

22

FEEDBACK
23

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 : 199.2
(Round your answer to one decimal place)



Algebra



$$f(n) = (x - 2)(x + 3)$$

Find the Inverse



To find the inverse, interchange the variables and solve for y .

$$f^{-1}(x) = -\frac{1 - \sqrt{25 + 4x}}{2}, -\frac{1 + \sqrt{4x + 25}}{2}$$



Tap to view FREE steps...



+ Tap to show graph...

Enter a problem...

 $f(x)$ y x^2

[

]

|

 $\sqrt{}$ $\sqrt[n]{}$ $> \leq$ $[\quad]$ $\begin{array}{|c|c|} \hline x & y \\ \hline \end{array}$ $e^{f(x)}$ x

7

8

9

 \div $< \geq$ \ln $\times 10^{}$

{ }

 y

4

5

6

 $/$ \times \log $\log_{}$ \cup z

1

2

3

 $^{\wedge}$ $\begin{array}{|c|c|} \hline x & y \\ \hline \end{array}$ $\begin{array}{|c|c|} \hline x & y \\ \hline \end{array}$ (\square, \square) ∞

abc

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0

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X



$q = :$

$r = :$

b) Find the determinant of A. :

c) Find x using the cramer's rule.

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

$a = :$ $b = :$ $c = :$

$d = :$ $e = :$ $f = :$

$g = :$ $h = :$ $i = :$

$|A_1| = :$

$x = :$

d) Find y using the cramer's rule.

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

@

#

\$

%

2

3

4

5

6

8

7



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tion

Consider the following linear system of equations.

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

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

$$4y + 2z = 8$$

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

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

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

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

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

$$p = :$$

$$q = :$$

$$r = :$$

b) Find the determinant of A.

DELL

d) Find y using the cramer's rule.

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

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

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

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

$$|A_2| = :$$

$$y = :$$

d) Find z using the cramer's rule.

$$z = \frac{|A_3|}{|A|}, A_3 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

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

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

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

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butive Law
organ's Law
ption Law
se Law

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

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

$$- (BC)).\bar{A} + (A + (BC)).\bar{B}$$

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

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

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

DELL



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

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

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

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

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

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

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

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

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

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

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

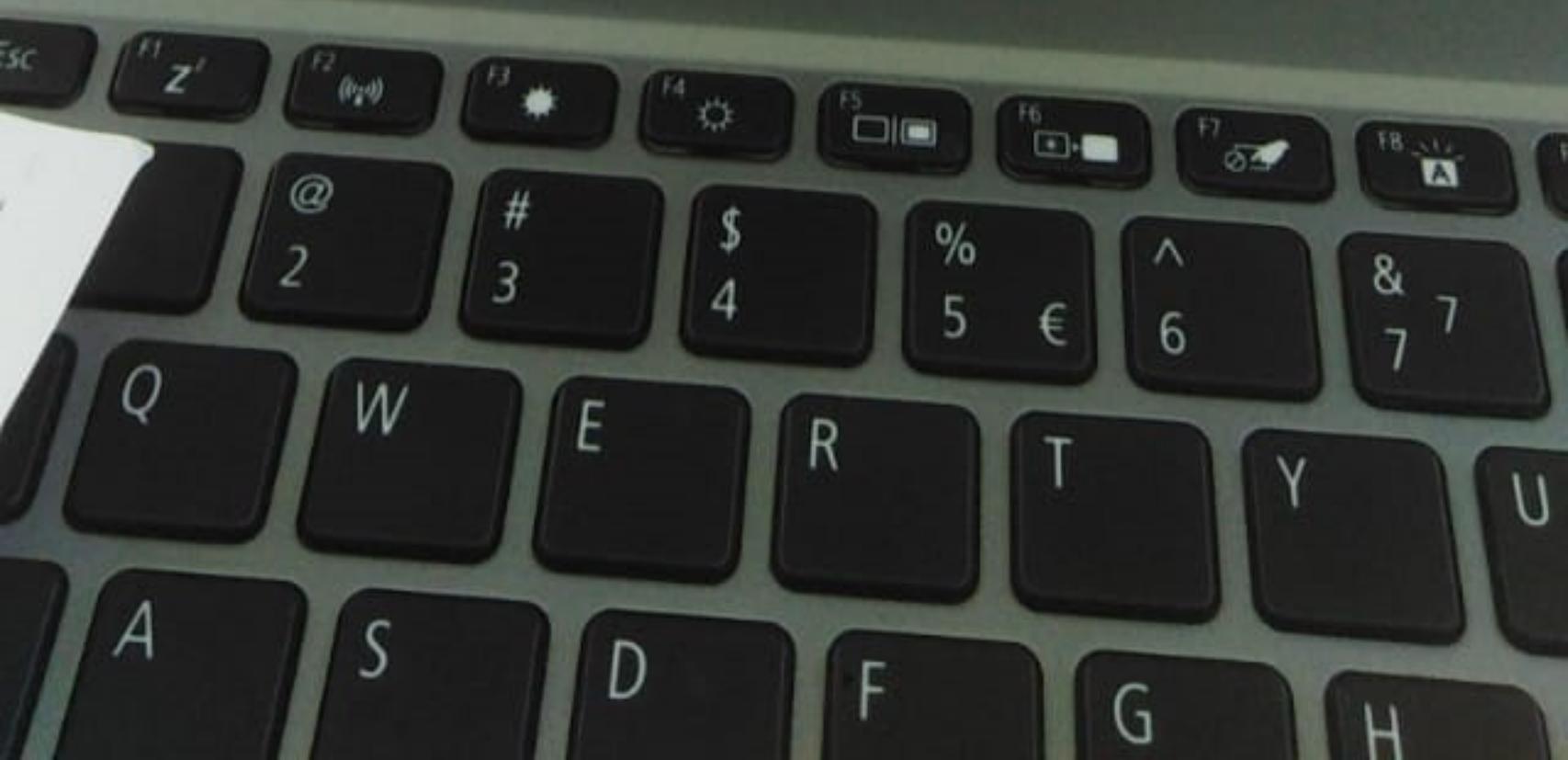
$$g = \boxed{} \quad h = \boxed{} \quad i = \boxed{}$$

$$j = \boxed{} \quad k = \boxed{} \quad l = \boxed{}$$

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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

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

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

$$d = : 0 \quad e = : 3 \quad f = : -2$$

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

$$p = : 1$$

$$q = : -1$$

$$r = : 8$$

b) Find the determinant of A. : 19

c) Find x using the cramer's rule.

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

DELL

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

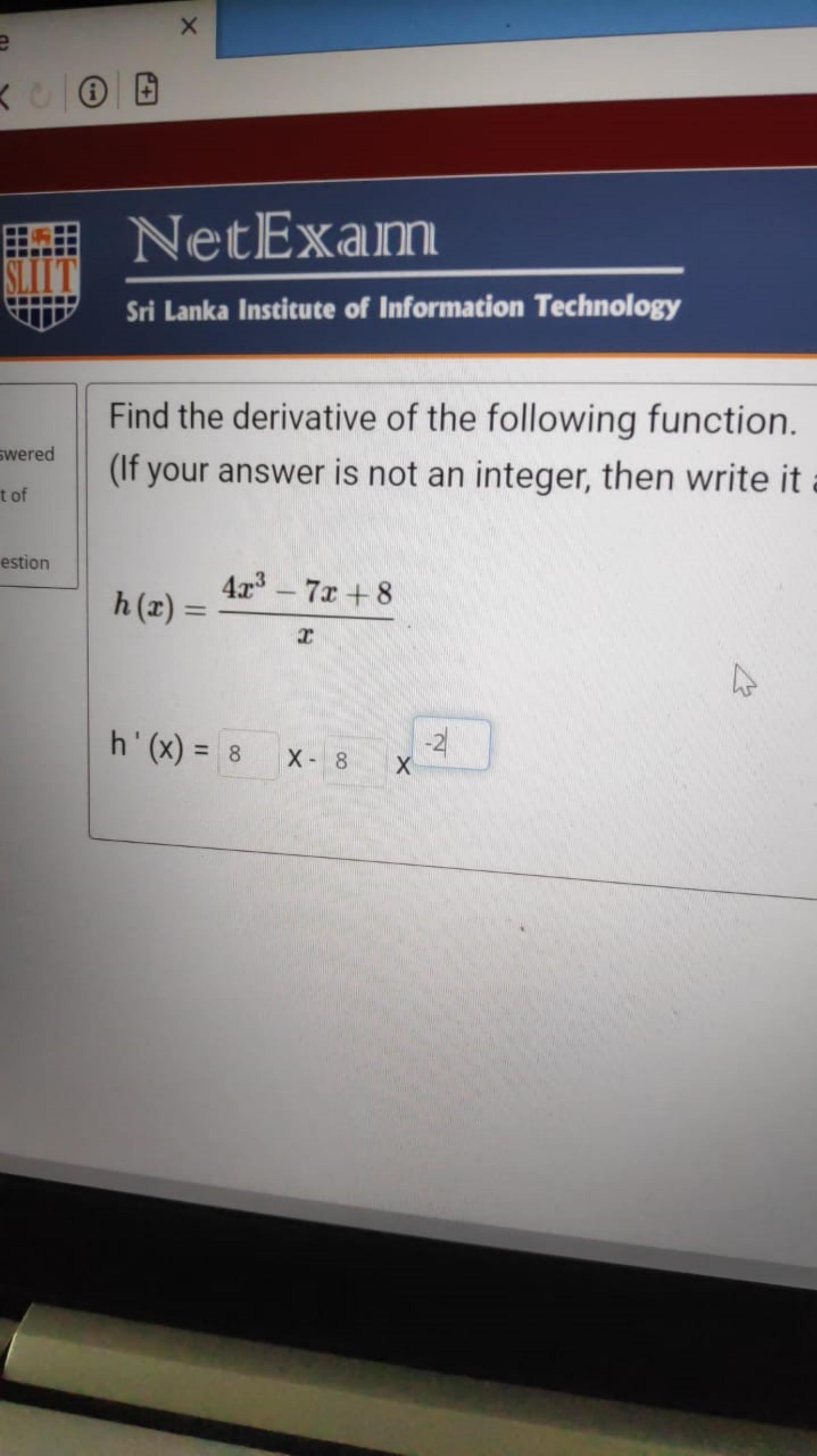
b) Does the inverse exist?

- 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

DELL



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

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

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



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

≡ Quiz

Finish atte

Time left 0:



EXAM QUES

1 2

8 9 1

15 16 17

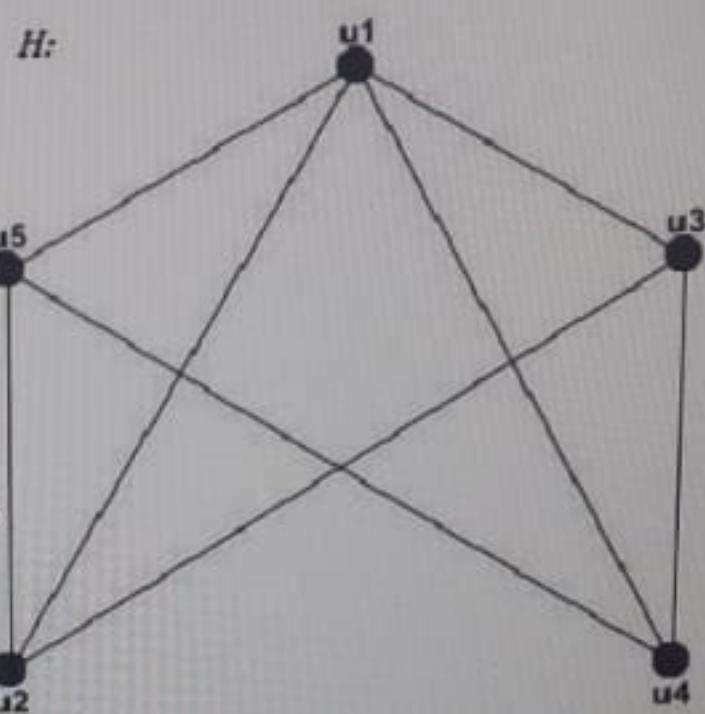
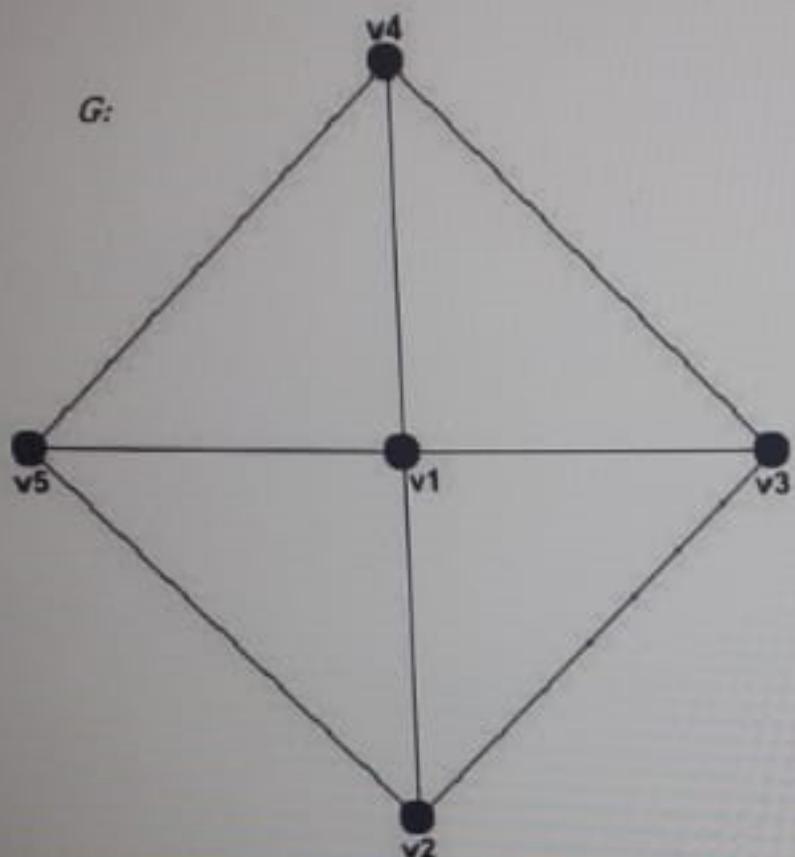
22

Not yet

ANSWER

23

Consider the following 2 graphs.



G

H

Number of Components

Number of Vertices

Number of Edges

Degree Sequence

 , , , , , ,

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 = :

a1 = :

a2 = :

a3 = :

b = :

b1 = :

b2 = :

b3 = :

c = :

c1 = :

c2 = :

c3 = :

d = :

d1 = :

d2 = :

d3 = :

e = :

e1 = :

e2 = :

e3 = :

f = :

f1 = :

f2 = :

f3 = :

g = :

g1 = :

g2 = :

g3 = :

h = :

h1 = :

h2 = :

h3 = :

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NetExam

Sri Lanka Institute of Information Technology

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

$$f(x) = 10 \sqrt[5]{x^3} - \sqrt{x^7} + 6 \sqrt[3]{x^8} - 3$$

$$f'(x) = \boxed{} x \boxed{} - \boxed{} x^{5/2} + 16 x \boxed{}$$

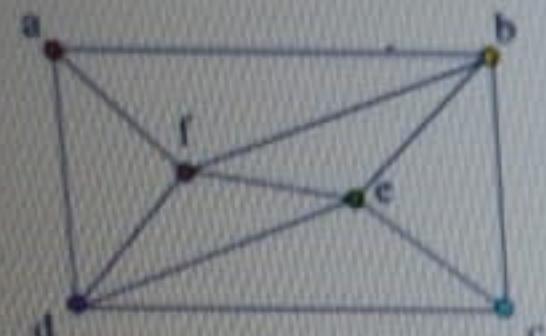
on 10

not answered

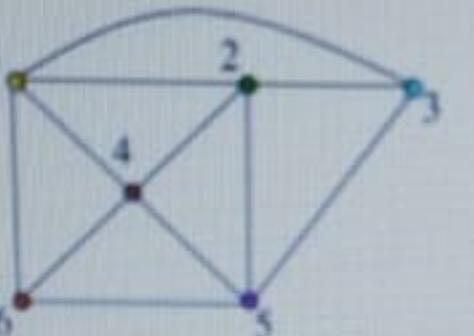
1 out of

flag question

Consider the following 2 graphs.



G



H

Number of Components

Number of Vertices

Number of Edges

Degree Sequence

Are they isomorphic?

G and H are

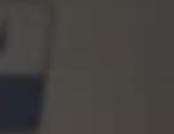
Isomorphic

Not Isomorphic

Quiz

Finish after

Time left 0



EXAM QUESTIONS

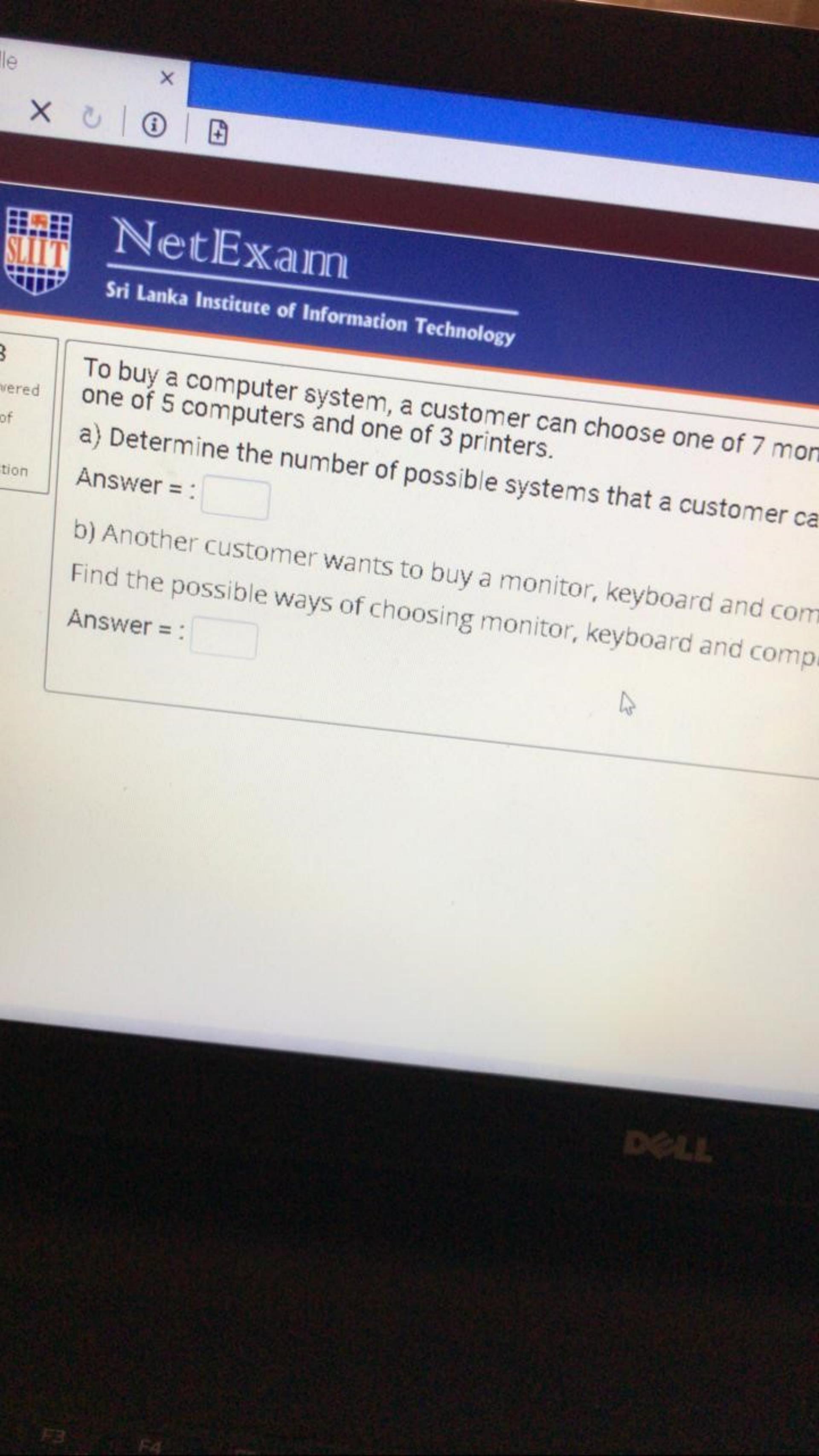
1	2
▲	▼

8	9
▼	▲

15	16	17
▼	▲	▲

22
▼

23
▼



NetExam

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

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

Answer = :

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

Answer = :

DELL

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.

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

a = : b = : c = :

d = : e = : f = :

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

p = :

q = :

r = :

DELL





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tion 12

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ked out of

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... ▾

Is f an onto function?

Choose... ▾

Does f has an inverse function?

Choose... ▾

DELL

$$R_2 - (-2) \cdot R_1 \rightarrow R_2$$
$$\left(\begin{array}{ccc|c} 3 & -2 & 1 & -2 \end{array} \right)$$

(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 there in numerator and denominator))

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

$$A = \left[\begin{array}{ccc} \quad & \quad & \quad \\ \quad & \quad & \quad \\ \quad & \quad & \quad \\ \quad & \quad & \quad \end{array} \right]$$

$$b = \begin{bmatrix} -1 \\ 2 \\ 1 \end{bmatrix}$$

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

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

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

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

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

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

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

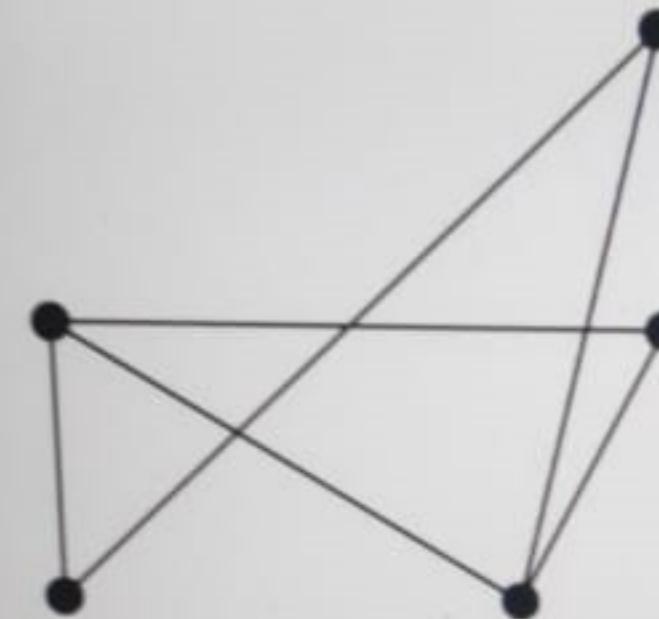
Question 12

Not yet answered

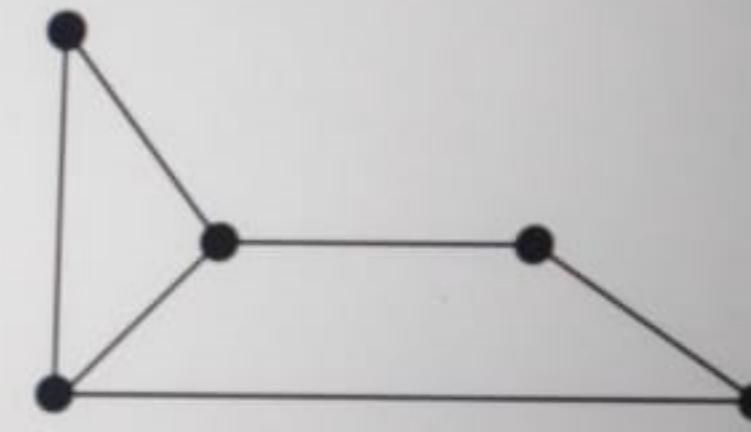
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18.00

Flag question

Consider the following 2 graphs.



G



H

G

Number of Components

Number of Vertices

Number of Edges

Degree Sequence

 , , , ,

H

 , , , ,

Are they isomorphic?

G and H are

≡ Quiz navigation

Finish attempt ...

Time left 0:28:22



EXAM QUESTIONS

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

FEEDBACK QUESTION

23

q = : 1

r = : 12

b) Find the determinant of A. : -42

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 = : b = : c = :

d = : e = : f = :

g = : h = : i = :

|A1| = :

x = :

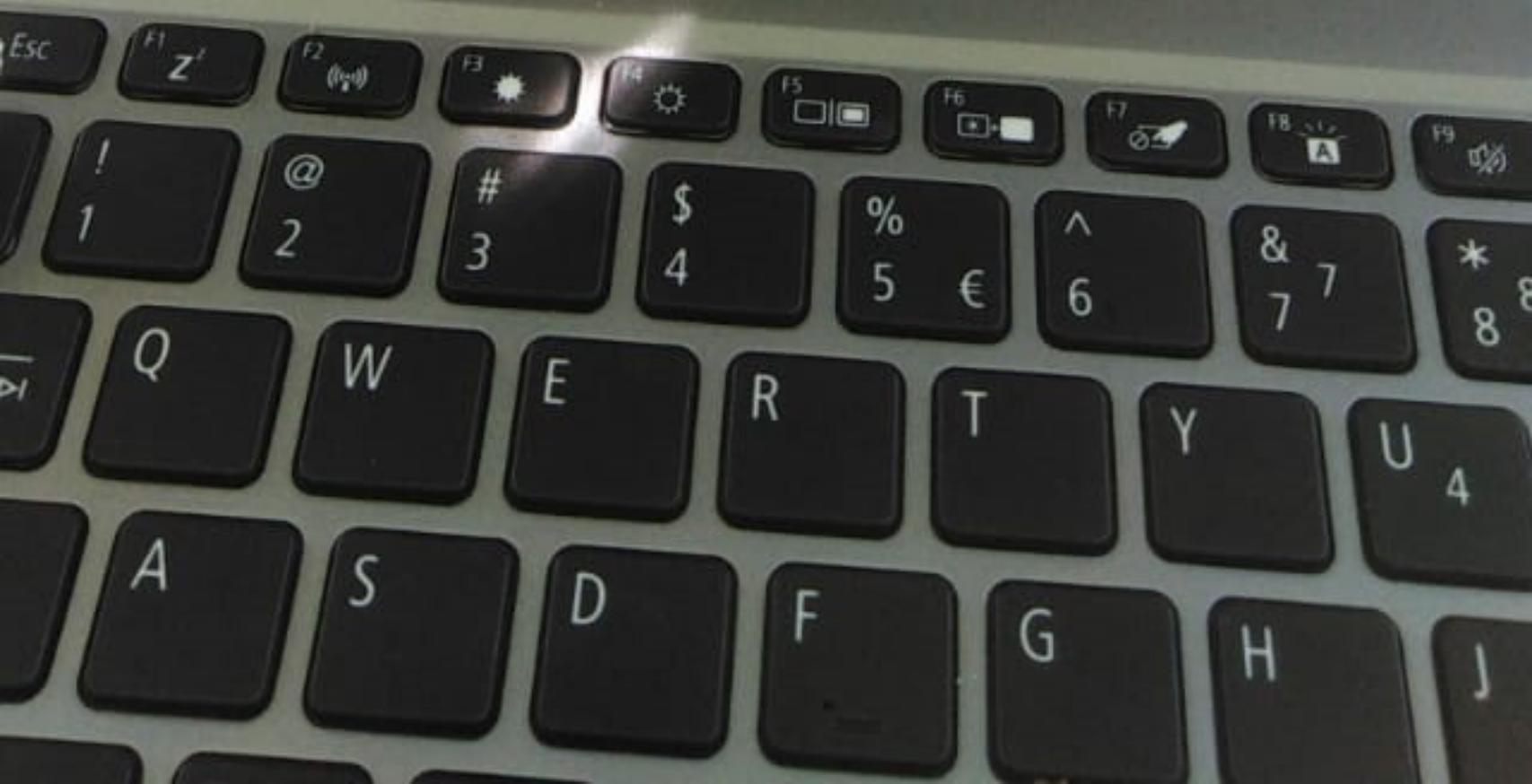
d) Find y using the cramer's rule.

$$\begin{bmatrix} a & b & c \end{bmatrix}$$

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Consider the following linear system of equations.

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

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

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

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

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

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

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

$$r'_3 = r_3 + r_2$$

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

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

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

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

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

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

DELL

If $|A| = 71$ then find the cofactor matrix of A.

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

C_{11} Choose... ▾

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

X



NetExam

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Consider the following linear system of equations.

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

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

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

(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 $Ax = b$.

$$A =$$

DELL

Consider the following linear system of equations.

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

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

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

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

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

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

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

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

$$p = : 6$$

$$q = : 3$$

$$r = : -3$$

b) Find the determinant of A. : -6

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 = b = c =

d = e = f =

g = h = i =

|A1| =

x =

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 = b = c =

d = e = f =

g = h = i =

Q W E R T Y U I O P
 A S D F G H J K L
 Z X C V B N M

d) Find y using the cramer's rule.

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

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

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

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

$$|A_2| = : -18$$

$$y = : 3$$

d) Find z using the cramer's rule.

$$z = \frac{|A_3|}{|A|}, A_3 = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$$

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

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

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

$$|A_3| = : 18$$

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**)

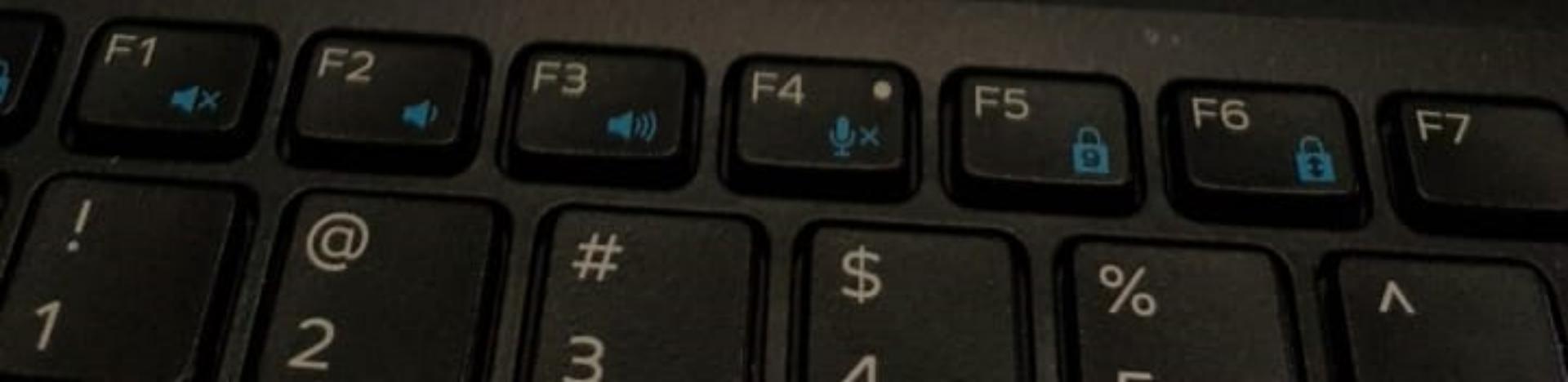
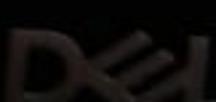
2's Complement of x (x') =

8's Complement of y =

16's Complement of z =

c) Fill in the blanks.

i) $10101010 + 11001100 =$ (Write your answer)



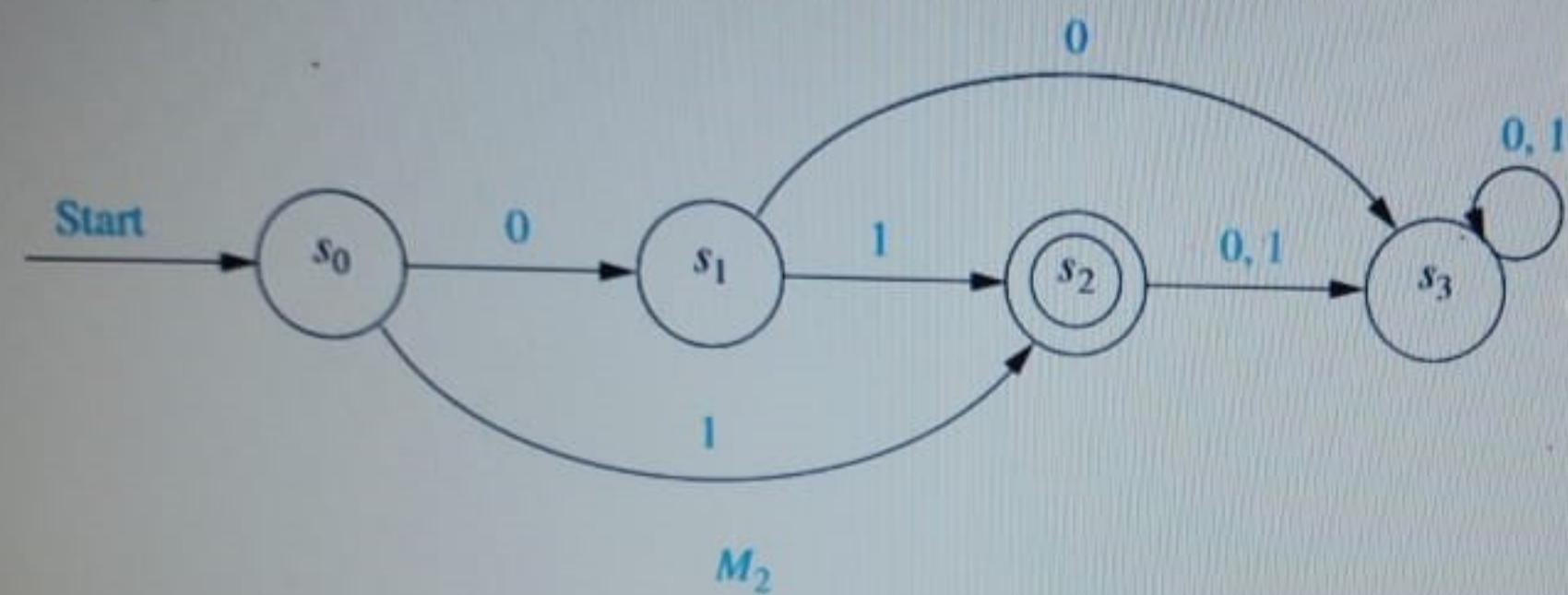
Question 16

Not yet answered

Marked out of
8:00

Flag question

Consider the following finite state Machine A.



What is the initial State?

Choose... ▾

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

Choose... ▾

What is the Accepting State?

Choose... ▾

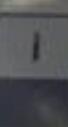
Find $N(s_1, 0)$

Choose... ▾

≡ Quiz navigation

Finish attempt...

Time left 0:16:22



EXAM QUESTIONS

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

Not yet answered

FEEDBACK QUESTION

23

DELL

X | O | i | +

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

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

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

$$= A(\bar{A} + 1) + \bar{A}B + \bar{A}C$$

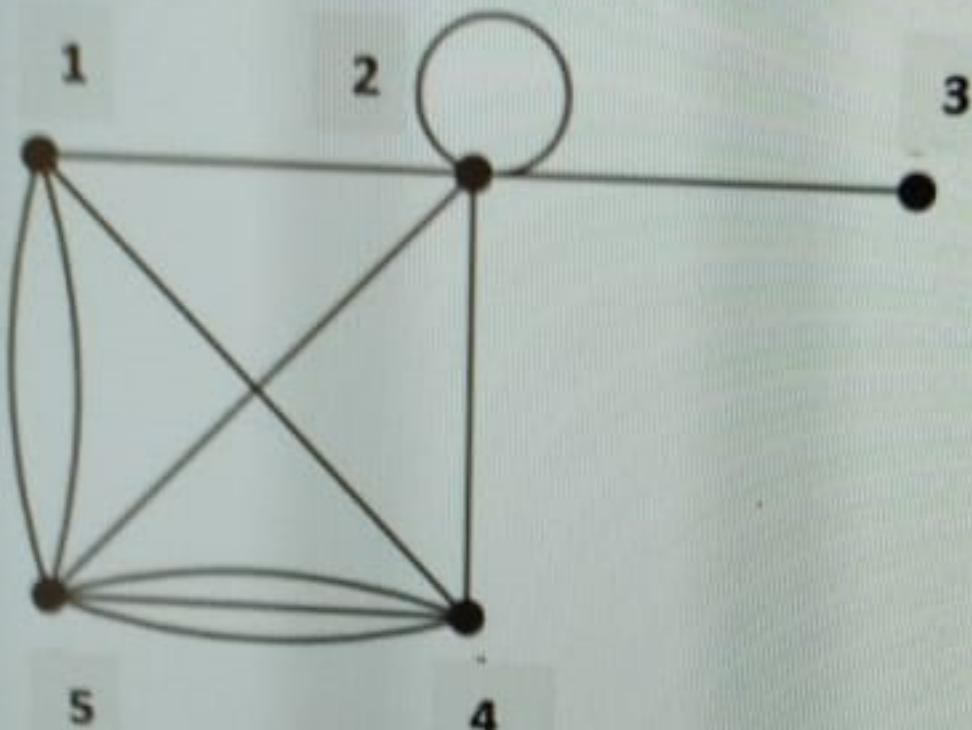
$$= A\bar{A} + A + \bar{A}B + \bar{A}C$$

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



DELL

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



Euler Path =

- Yes
- No

Euler Circuit =

- Yes
- No

Hamilton Path =

- Yes
- No

Hamilton Circuit =



Question 2
Not yet answered
Marked out of
5.00
Flag question

Find the following definite integral.
(If your answer is not an integer, then write it as a quotient (eg: 2/5))

$$\int_3^0 15w^4 - 13w^2 + w \, dw = -1233/2$$

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

$p = : 80$ $q = : 50$

$r = : 1$ $s = : 1$

$c = : 5700$

$d = : 90$

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

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

$a1 = : 1$ $a2 = : -1$

$a3 = : -50$ $a4 = : -80$

c) Find the determinant of A. :

d) Find the adjoint of A.

$\sim \text{adj } A = [p \quad q]$

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lag 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)

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

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

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

$$Ax = b$$

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

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

≡ Quiz

Finish attem

Time left 1:1

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EXAM QUES

1

2

8

9

1

15

16

17

22

FEEDBACK QUES

23

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

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

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

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

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

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

$$5. r'_2 = r_2 + 7r_3$$

$$6. r'_2 = r_2 \times -1$$

$$7. r'_1 = r_1 - 2r_3$$

$$a = \boxed{1} \quad b = \boxed{1} \quad c = \boxed{2}$$

$$d = \boxed{0} \quad e = \boxed{-1} \quad f = \boxed{-7}$$

$$g = \boxed{1} \quad h = \boxed{1} \quad i = \boxed{0}$$

$$j = \boxed{1} \quad k = \boxed{1} \quad l = \boxed{0}$$

$$m = \boxed{-3} \quad n = \boxed{1} \quad o = \boxed{0}$$

$$p = \boxed{1} \quad q = \boxed{1} \quad r = \boxed{0}$$

DELL



If $|A| = 71$ then find the cofactor matrix of A.

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

C_{11} Choose... ▾



C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

X

(i)



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

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

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

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

$$= : \boxed{}$$

$$a_1 = : \boxed{}.$$

$$a_2 = : \boxed{}$$

$$a_3 = : \boxed{}$$

$$= : \boxed{}$$

$$b_1 = : \boxed{}$$

$$b_2 = : \boxed{}$$

$$b_3 = : \boxed{}$$

$$= : \boxed{}$$

$$c_1 = : \boxed{}$$

$$c_2 = : \boxed{}$$

$$c_3 = : \boxed{}$$

$$= : \boxed{}$$

$$d_1 = : \boxed{}$$

$$d_2 = : \boxed{}$$

$$d_3 = : \boxed{}$$

$$= : \boxed{}$$

$$e_1 = : \boxed{}$$

$$e_2 = : \boxed{}$$

$$e_3 = : \boxed{}$$

$$= : \boxed{}$$

$$f_1 = : \boxed{}$$

$$f_2 = : \boxed{}$$

$$f_3 = : \boxed{}$$

$$= : \boxed{}$$

$$g_1 = : \boxed{}$$

$$g_2 = : \boxed{}$$

$$g_3 = : \boxed{}$$

$$= : \boxed{}$$

$$h_1 = : \boxed{}$$

$$h_2 = : \boxed{}$$

$$h_3 = : \boxed{}$$

$$= : \boxed{}$$

$$i_1 = : \boxed{}$$

$$i_2 = : \boxed{}$$

$$i_3 = : \boxed{}$$

$$= : \boxed{}$$

$$p_1 = : \boxed{}$$

$$p_2 = : \boxed{}$$

$$p_3 = : \boxed{}$$

$$= : \boxed{}$$

$$q_1 = : \boxed{}$$

$$q_2 = : \boxed{}$$

$$q_3 = : \boxed{}$$

$$= : \boxed{}$$

$$r_1 = : \boxed{}$$

$$r_2 = : \boxed{}$$

$$r_3 = : \boxed{}$$

To find the solution, of the above linear system, obtain the three equations

DELL

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

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

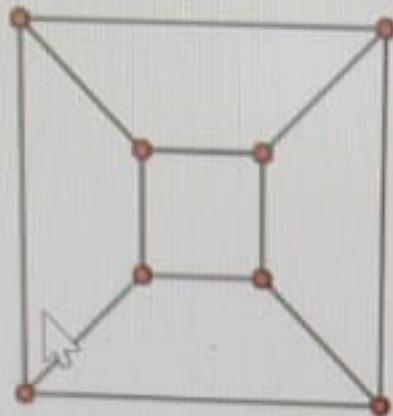
Answer:

DELL

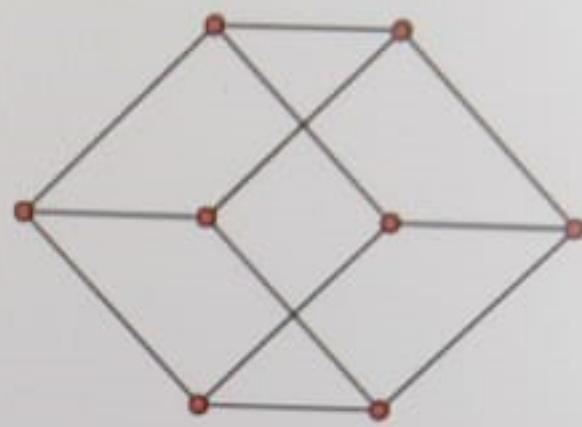


17
answered
out of
question

Consider the following 2 graphs.



G



H

G

Number of Components

Number of Vertices

Number of Edges

Degree Sequence

Are they isomorphic?

G and H are

Isomorphic

Not Isomorphic

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Flag question

If $|A| = 71$ then find the cofactor matrix of A.

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

C_{11} Choose... ▾

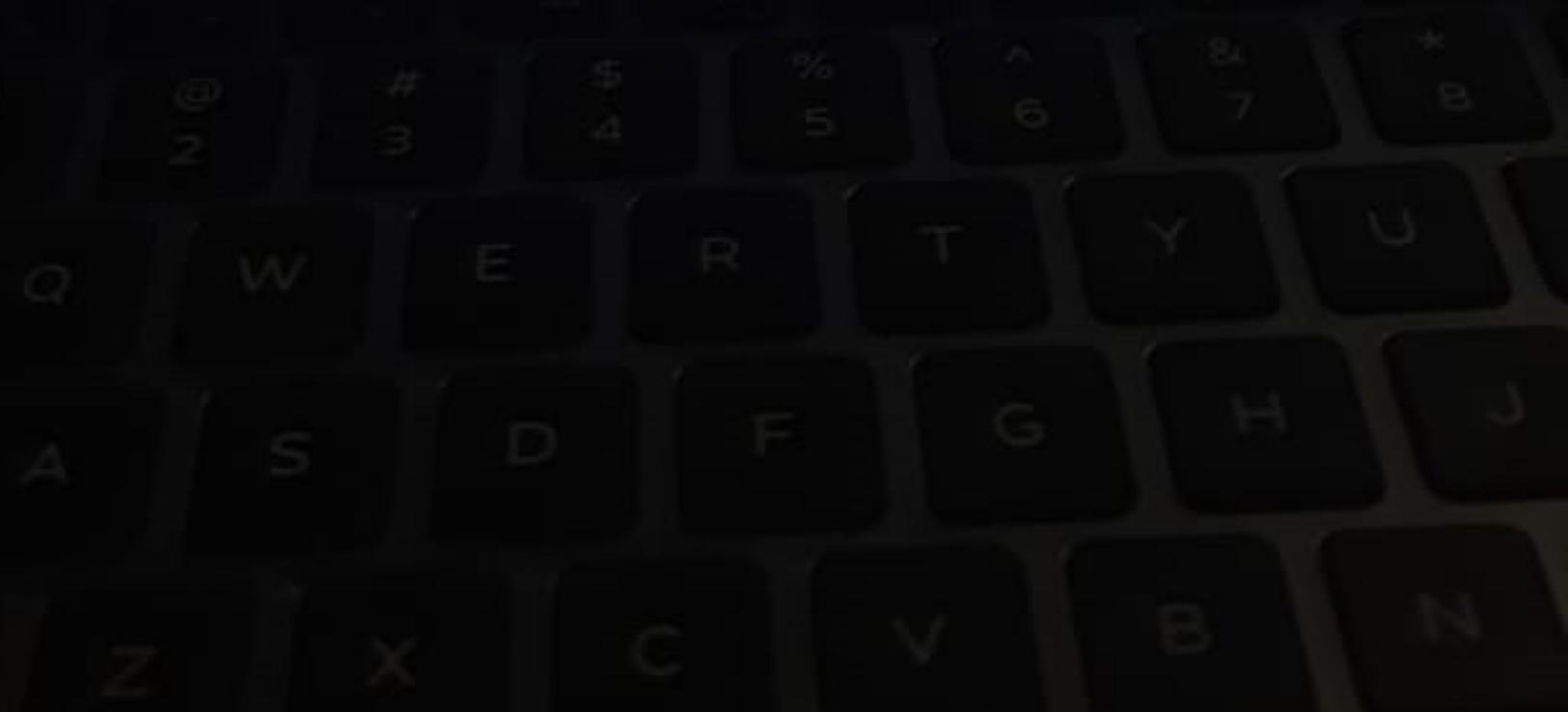
C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

DELL





Question 1

Not yet answered

Marked out of
9.00

Flag question

If $|A| = 71$ then find the cofactor matrix of A.

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

C_{11} -6

C_{12} 11

C_{13} 7

C_{21} 21

C_{22} 7

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Find the derivative of the following function.

(If your answer is not an integer, then write it as a qu

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

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