



Online Exams

Sri Lanka Institute of Information Technology

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Flag 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... ▾

Question 28
Not yet answered
Marked out of
4.00

Flag question

Number of edges in graph G is 8. Assume that there are 4 vertices with equal degree values.

Total degree = :

Degree of a one vertex = :

Does an Euler Circuit exist in G?

Yes

No

Does an Euler Path exist in G?

Yes

No

Number of components of G =



$k : \mathbb{R} \rightarrow \mathbb{R}; k(x) = 5^x$

Is the function one to one ?

Yes

No

Is the function onto?

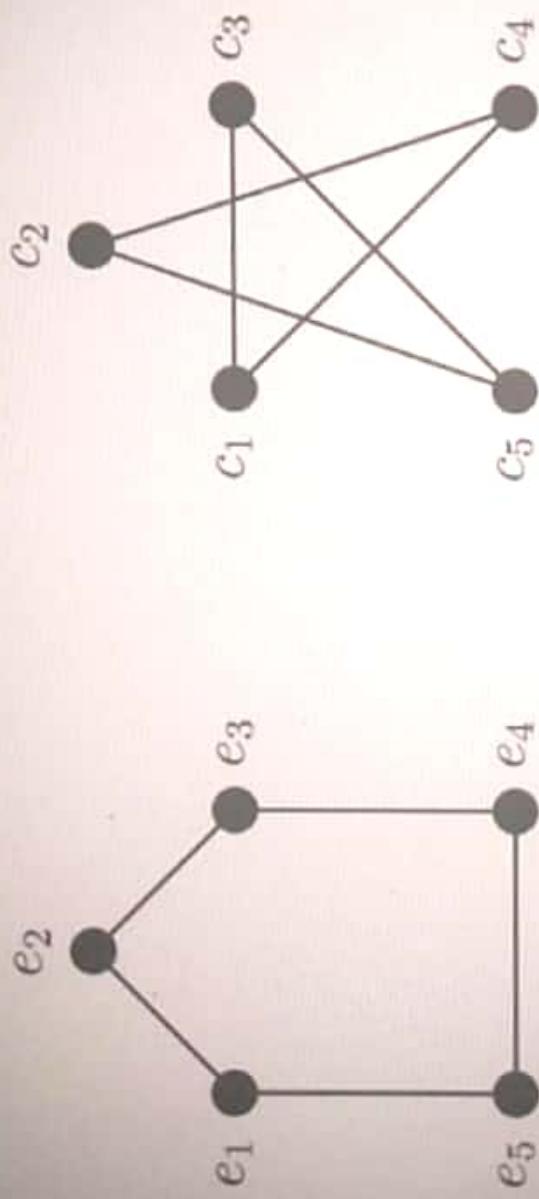
Yes

No

Question 27

Not yet answered
Marked out of
1.00
 Flag question

What is the correct statement about the following 2 graphs.



Select one:

- Two graphs are isomorphic
- Two graphs are not isomorphic
- The two graphs have different degree sequences
- None of the above



$k : \mathbb{R} \rightarrow \mathbb{R}; k(x) = 5^x$

Is the function one to one ?

- Yes
- No

Is the function onto?

- Yes
- No

How many numbers not exceeding 10000 can be made using the digits
2,4,5,6,8 if repetition of digits is allowed?

Answer = :



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For the word "COPYING", if the vowels are always together then how many distinct arrangements are possible?

Answer = :

Online Exams

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$h : [2, \infty) \rightarrow \mathbb{R}$ defined by $h(x) = \sqrt{x - 2}$

Is the function one to one ?

- Yes
- No

Is the function onto?

- Yes
- No

Find the following definite integral.

$$\int_{2}^{4} |3x - 4| dx$$

(Please remove spaces from the answer)

Answer:



Online Exams

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it of
question

$\mathbb{R} \rightarrow \mathbb{R}$, $p(x) = |1 - 3x|$.

Is the function one to one ?

- Yes
- No

Is the function onto?

- Yes
- No

Find the following definite integral.

$$\int_{1}^{3} |5x - 4| dx$$

(Please remove spaces from the answer)

Answer:



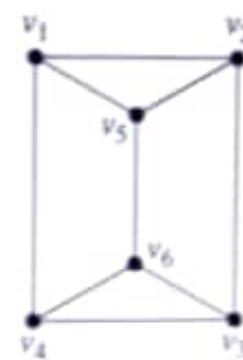
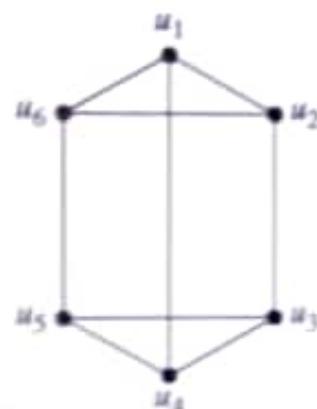
Question 27

Not yet answered

Marked out of
1.00

Flag question

What is the correct statement about the following 2 graphs.



Select one:

- Two graphs are isomorphic
- Two graphs are not isomorphic
- The two graphs have different degree sequences
- None of the above

≡ Quiz navigation

DECLARATION



EXAM QUESTIONS

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

Finish attempt

Time left 0:08:46

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

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -

(Write your answer as a fraction. Eg: 23/2
No spaces should be in the answer)

Answer: 1



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In a Cricket tournament, there are 10 matches. If each team plays one match with every other team, the number of teams is :



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In how many ways can Kamal choose a consonant and a vowel from the letters of the word ALLAHABAD?

Answer = :

$$3x - 5y = 1$$

$$4x - 3y = 5$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

$$|A| = : 11$$

$$p = : -3$$

$$q = : 5$$

$$r = : -4$$

$$s = : 3$$

$$x = : 2$$

$$y = :$$

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(-2x + 1)}{3}$$

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

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

Answer: 5

16

answered
out of
question

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 2 & 1 & 0 & -1 & 2 & 1 \\ 0 & 0 & 3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

$$a = : -3$$

$$b = : 4$$

$$c = : -3$$

$$d = : 2$$

$$e = : -1$$

$$f = : 6$$

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

$$C_{11} \quad \boxed{-5} \quad *$$

$$C_{12} \quad \boxed{10} \quad *$$

$$C_{13} \quad \boxed{-5} \quad *$$

$$C_{21} \quad \boxed{2} \quad *$$

$$C_{22} \quad \boxed{-4} \quad *$$

$$C_{23} \quad \boxed{-5} \quad *$$

$$C_{31} \quad \boxed{-15} \quad *$$

$$C_{32} \quad \boxed{1} \quad *$$

Select the symmetric matrix from the following choices.

Select one:

$$\begin{bmatrix} -12 & 16 & 13 & 19 & 26 & 0 & 2 \\ 24 & 5 & -19 & 29 & -19 & 16 & -10 \\ 21 & -26 & 16 & 13 & -17 & 16 & 7 \\ 12 & 20 & 4 & 22 & 18 & -3 & -12 \\ 17 & -26 & -9 & 10 & -15 & 6 & 11 \\ -9 & 23 & 8 & 6 & -3 & 8 & 8 \\ 10 & -18 & 0 & -21 & 19 & 15 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 18 & 8 & 19 & -18 & 16 & 9 & -1 \\ -13 & 12 & 13 & 17 & -19 & -13 & 15 \\ -15 & -14 & -19 & -5 & 9 & 19 & -8 \\ 10 & 1 & -9 & -10 & 18 & 13 & 13 \\ -15 & -14 & -19 & -5 & 9 & 19 & -8 \\ -13 & 12 & 13 & 17 & -19 & -13 & 15 \\ 18 & 8 & 19 & -18 & 16 & 9 & -1 \end{bmatrix}$$

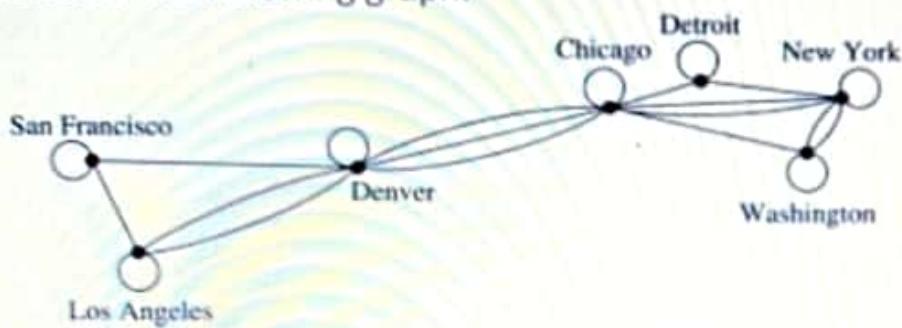
$$\begin{bmatrix} 4 & -16 & 6 & -2 & 6 & -16 & 4 \\ 0 & -11 & 3 & 3 & 3 & -11 & 0 \\ 12 & 2 & -7 & 13 & -7 & 2 & 12 \\ 7 & -12 & -18 & -17 & -18 & -12 & 7 \end{bmatrix}$$



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Consider the following graph.



Determine whether the above graph has the followings.

Hamiltonian Path	Yes	▼
Hamiltonian Circuit	No	▼
Euler Path	No	▼
Euler Circuit	No	▼



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

Find $D = B^2 + AB - I$

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

a = :

b = :



c = :

d = :

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer: -8.5

Question 20

Not yet answered

Marked out of
5.00

Flag question

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

Find the determinant of the above matrix.: Find the inverse of the matrix A. $A^{-1} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

a = :

b = :

c = :

d = :

(Write your answer with one decimal place)

Consider the following linear system.

$$x + y = 3$$

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

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

$$x = \frac{|A_1|}{|A|} \quad y = \frac{|A_2|}{|A|} \quad z = \frac{|A_3|}{|A|}$$

Find the following.

$$|A_1| = : .5$$

$$|A_2| = : .15$$

$$|A_3| = : .5$$

$$|A| = : .5$$

$$x = :$$

$$y = :$$

$$z = :$$

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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 :

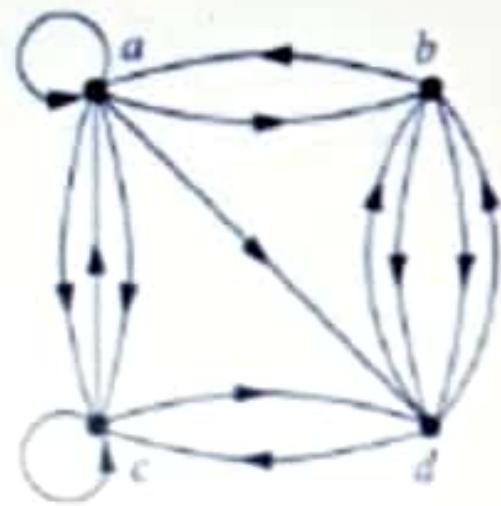
(Round your answer to one decimal place)

Find the determinant of A.

$$A = \begin{bmatrix} 2 & -3 & 5 \\ -3 & 6 & 2 \\ 1 & -2 & 5 \end{bmatrix}$$

Answer: 17

Consider the following Directed Graph.



Number of Edges = : 14

Total Indegree = : 14

Total Outdegree = : 1



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Find $f'(2)$.

$$f(x) = 3/x^4 - 2x^2 + 6x - 7.$$

(Write your answer as a fraction. Eg: 4/5, No spaces in the answer)

Answer: -115

I

Following adjacency matrix represents a graph.

1	0	0	2
1	1	0	1
0	1	0	1
0	0	0	1

Find the following.

This graph is a

- Undirected Graph
- Directed Graph

Number of Loops = : 3

Number of Edges = : 9

Number of Vertices = : 4



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In how many ways can Kamal choose a consonant and a vowel from the letters of the word ALLAHABAD?

Answer = :

[Next page](#)



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g question

Consider the following raw operation and find the values

$$\begin{bmatrix} 1 & -2 & 1 & 3 \\ 2 & 4 & 0 & 9 \\ 3 & -4 & 8 & 1 \end{bmatrix}$$

$$r_3' = r_3 - 3r_1$$


$$\begin{bmatrix} a & b & c & d \\ e & f & g & h \\ i & j & k & l \end{bmatrix}$$

$$a = : 1$$

$$b = : -2$$



$$c = : 1$$

$$d = : 1$$

$$e = : 1$$



Question 21

Not yet answered

Marked out of
9.00

Flag question

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

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

Assume I is the identity matrix.

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

a = : 5

b = : 0

c = : 0

d = : 0

e = : 5

f = : 0

g = : 0

h = : 0

i = : -1



on 11

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out of

question

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 0 & 1 \end{bmatrix}$$

$$a = \text{ } 2 \quad \cdot$$

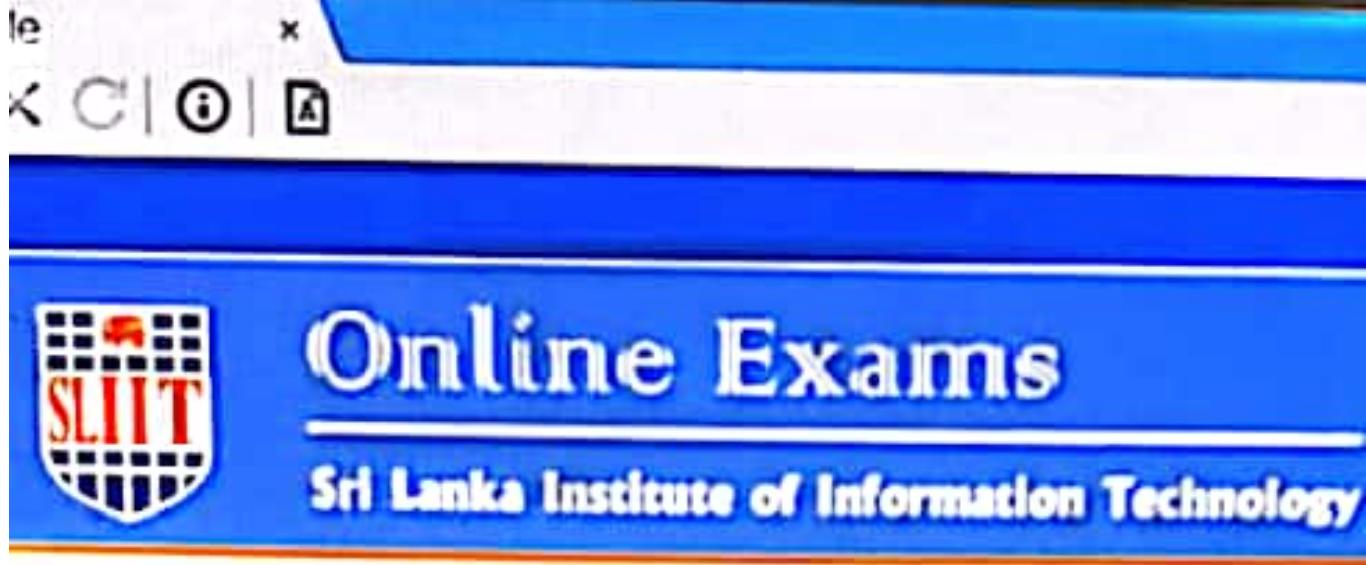
$$b = \text{ } 1 \quad \cdot$$

$$c = \text{ } 1 \quad \cdot$$

$$d = \text{ } 1 \quad \cdot$$

$$e = \text{ } 1 \quad \cdot$$

$$f = \text{ } 2 \quad \cdot$$



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3

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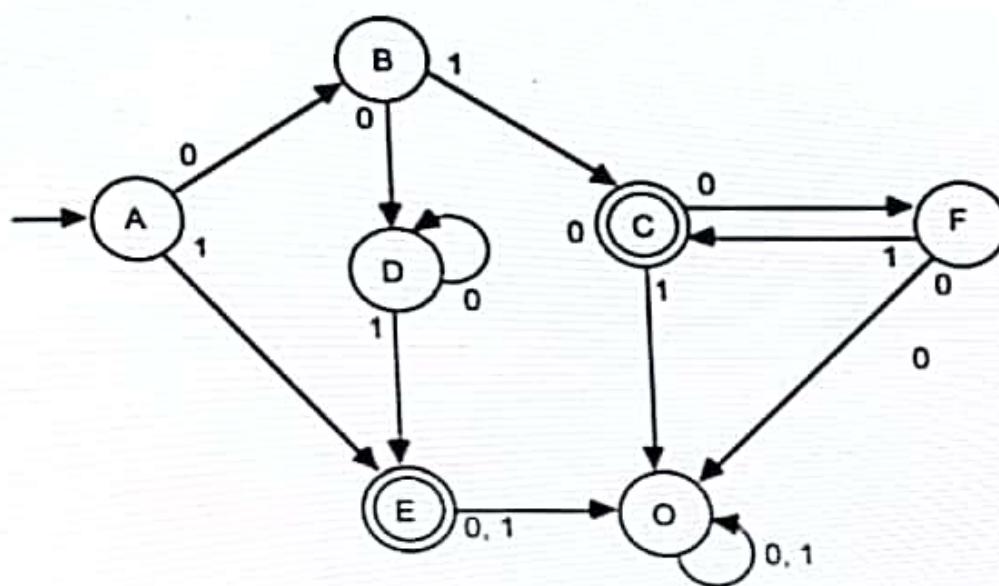
question

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 $N(C, 1)$

E F

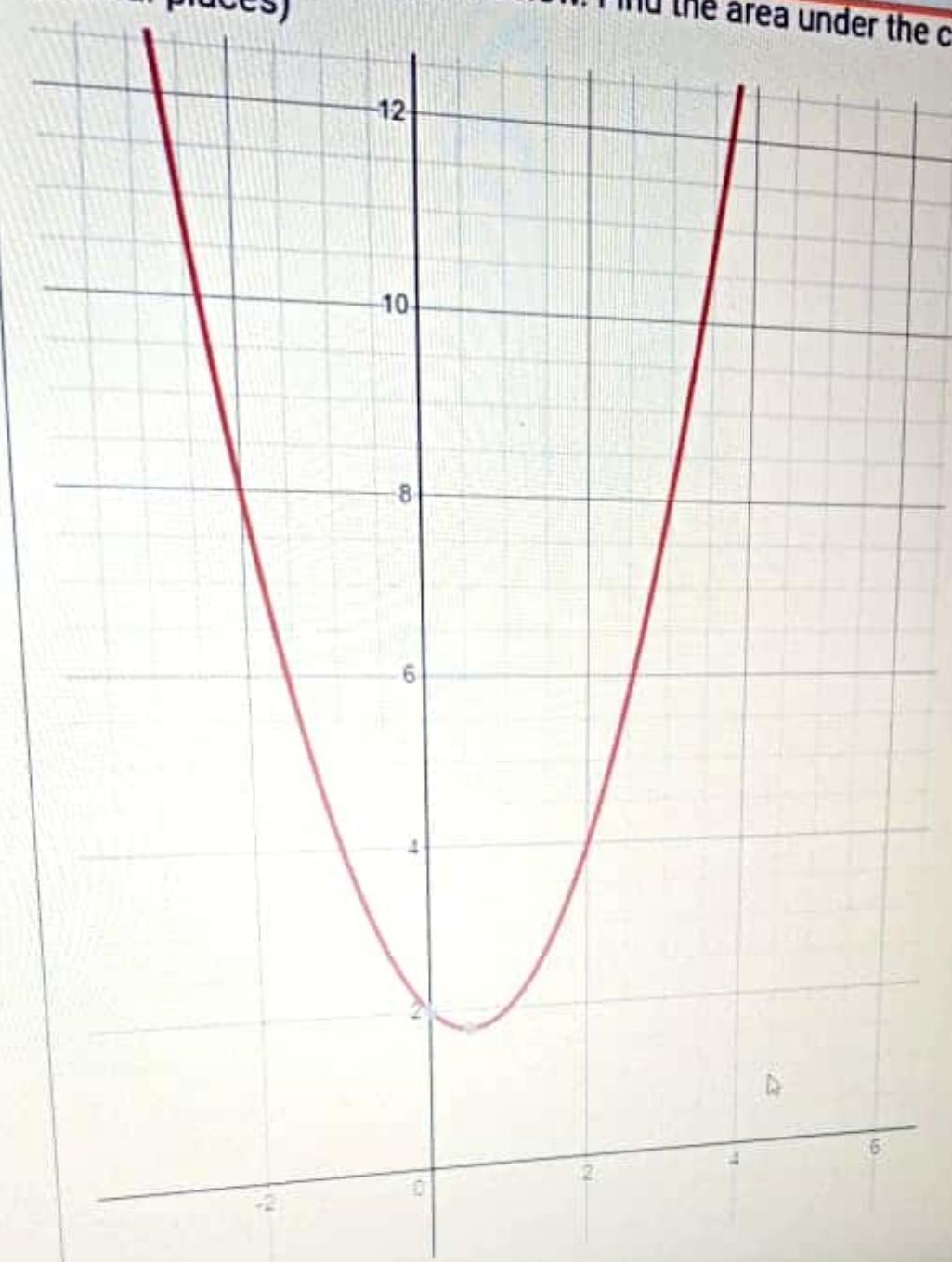
Find $N(F, 0)$

G H

question

(Round to three decimal places)

Below. Find the area under the curve from -4 to 4. (Round your answer to three decimal places)



Answer: 42.67

If $|A| = -35$ then find the cofactor matrix of A.

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

C_{11} Choose... ▾ 

C_{12} Choose... ▾

C_{13} Choose... ▾

C_{21} Choose... ▾

C_{22} Choose... ▾

C_{23} Choose... ▾

18

Answered
out of
question

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3x\right) dx.$$

Answer:

In a Cricket tournament, there are 45 matches. If each team plays one match with every other team, the number of teams is :

[Next page](#)

and $B=3A$; $C=8+2A-5I$. 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 $a=1$

B $a=2$

C $a=3$

D $a=4$

E $a=5$

F $a=6$

G $a=7$

H $a=8$

I $a=9$



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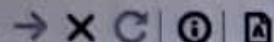
How many possible outcomes are there when five dice are rolled in which at least one dice shows 6?

Answer = :

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Question 25

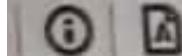
Not yet answered
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0.00

* Flag question

Find out how many distinct three-digit numbers can be formed using the digits 1, 2, 3, 4, 5, 6, 7, 8, 9 such that the digits are in ascending order.

Answer = :





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

Find the determinant of the above matrix.:

Find the inverse of the matrix A. $A^{-1} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

a = :

b = :

c = :

d = :

(Write your answer with one decimal place)

X

A

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Find out how many distinct three-digit numbers can be formed using digits 1, 2, 3, 4, 5, 6, 7, 8, 9 such that the digits are in ascending order.

Answer = :

Number of edges in graph G is 15. Assume that there are 6 vertices with equal degree values.

Total degree = :

Degree of a one vertex = :

Does an Euler Circuit exist in G?

- Yes
- No

Does an Euler Path exist in G?

- Yes
- No

Find the following definite integral.

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

(Please remove spaces from the answer)

Answer:

1



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Question 26

Not yet answered

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1.00

Flag question

In a Cricket tournament, there are 15 matches. If each team plays one match with every other team, the number of teams is :



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≡ Quiz navigation

DECLARATION



EXAM QUESTIONS

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28



Finish attempt

Time left: 0:05:03

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umber of edges in graph G is 8. Assume that there are 4 vertices with equal degree values.
total degree = 16
degree of a one vertex = 4

Does an Euler Circuit exist in G?

Yes

No

Does an Euler Path exist in G?

Yes

No

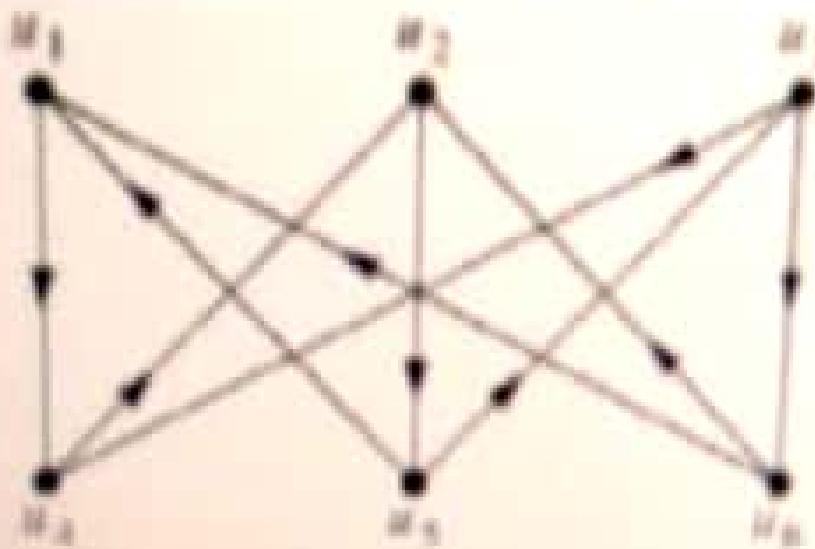
Number of components of G =



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Consider the following Directed Graph.



Number of Edges = :

Total Indegree = :

Total Outdegree = :



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Consider the following function.

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

1. Find $f'(-2)$:
 2. Find the definite integral of $f(x)$ from 0 to 6 :
- (Keep Your answer to one decimal place)

Question 26

Not yet answered

Marked out of
1.00

 Flag question

In a Cricket tournament, there are 55 matches. If each team plays one match with every other team, the number of teams is :

 Quiz navigation

DECLARATION



EXAM QUESTIONS

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

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Amount submitted:

Time spent: 0:10:38

$$f(x) = (6x^2 + 2x)(x^3 + 1).$$

Find $f'(-2)$.

Hint : Differentiate the function and Substitute -2.

Answer:



Number of edges in graph G is 9. Assume that there are 6 vertices with equal degree values.

Total degree = :

Degree of a one vertex = :

Does an Euler Circuit exist in G?

- Yes
- No

Does an Euler Path exist in G?

- Yes
- No

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JIT LEARNING INSTITUTE OF INFORMATION TECHNOLOGY

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

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 = :



Online Exams

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Find $f'(2)$.

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

Hint: Differentiate the function and substitute 2.

(Write your answer as a fraction. Eg: 4/5, No spaces should be in the answer)

Answer:



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Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(5x - 9)}{2}$$

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

Hint : Find the inverse of g and substitute -5.

Answer : |

I

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

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

Assume I is the identity matrix.

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

$$a = : \boxed{}$$

$$b = : \boxed{}$$

$$c = : \boxed{}$$

$$d = : \boxed{}$$

$$e = : \boxed{}$$

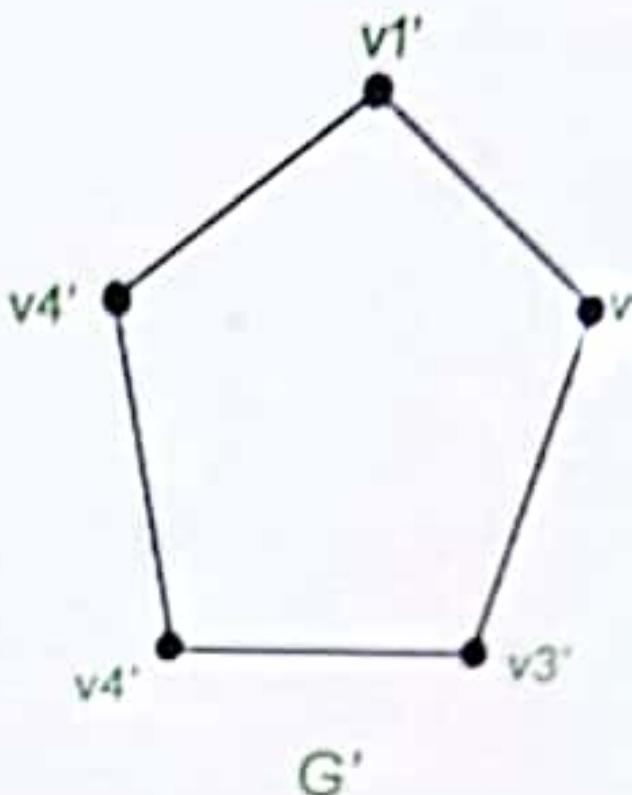
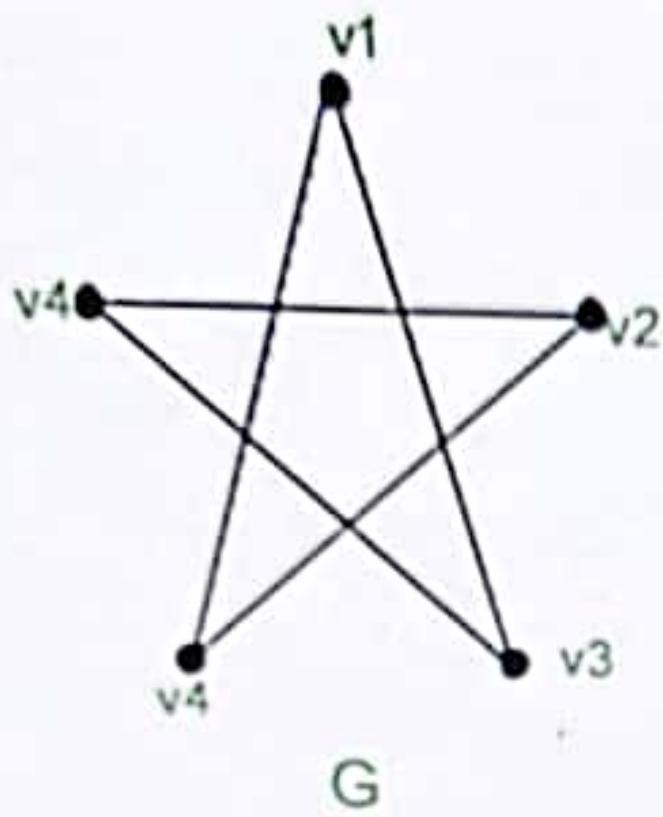
$$f = : \boxed{}$$

$$g = : \boxed{}$$

$$h = : \boxed{}$$

$$i = : \boxed{}$$

What is the correct statement about the following 2 graphs.



Select one:

Two graphs are isomorphic

Two graphs are not isomorphic

The two graphs have different degree sequences



Online Exams

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If repetition is not allowed, then how many numbers between 2000 and 3000 can be formed using the digits from 0 to 7?

Answer = :

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EXAM QUE

1 2

9 10

17 18 19

25 26 27

Finish attempt ...

Question 28

Not yet answered

Marked out of
4.00

 Flag question

Number of edges in graph G is 6. Assume that there are 4 vertices with equal degree values.

Total degree = :

Degree of a one vertex = :

Does an Euler Circuit exist in G?

- Yes
- No

Does an Euler Path exist in G?

- Yes
- No



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Find $f'(2)$.

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

Hint: Differentiate the function and substitute 2.

(Write your answer as a fraction. Eg; 4/5, No spaces should be in the answer)

Answer:

I

Online Exams

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Number of edges in graph G is 6. Assume that there are 4 vertices with equal degree values.

Total degree = :

Degree of a one vertex = :

Does an Euler Circuit exist in G?

Yes

No

Does an Euler Path exist in G?

Yes

No

b

b

Consider the following linear system of equations.

$$2x + y + az = 3$$

$$x + y + z = 1$$

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

Find the value of a if the above system of equations have infinite number of solutions.

Answer:

[See all photos](#)[+ Add to](#)[Edit & Create](#)

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Question 6

Not yet answered

Marked out of
1.00[Flag question](#)

Which of the following pair of graphs are isomorphic?



A



B



C

Select one:

- A only
- B only
- A and B only
- All pairs are isomorphic
- None of the above

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

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

Is f a One to one function?

Choose... 

Choose

Yes

No

Choose... 

Is f an onto function?

Does f has an inverse function?

Question 24

Not yet answered

Marked out of
2.00

Flag question

$h : [2, \infty) \rightarrow \mathbb{R}$ defined by $h(x) = \sqrt{x-2}$

Is the function one to one ?

Yes

No

Is the function onto?

Yes

No

$$y=0$$

$$y^2 = x_2$$

$$x = (y^2 + 1)_{+}$$

$$x =$$

Next page

The function $f : \mathbb{Z} \rightarrow \mathbb{Z}$ defined by

$$f(n) = \begin{cases} \frac{n}{2} & \text{if } n \text{ is even} \\ \frac{n+1}{2} & \text{if } n \text{ is odd} \end{cases}$$

Is the function one to one ?

- Yes
- No

Is the function onto?

- No
- Yes



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

Find $f'(-1)$

Hint: Differentiate the function and substitute -1

(Note: your answer should be a fraction. E.g. $\frac{1}{2}/3$
The spaces should be in this manner)

20/9



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18

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ag question

Find the following definite integral.

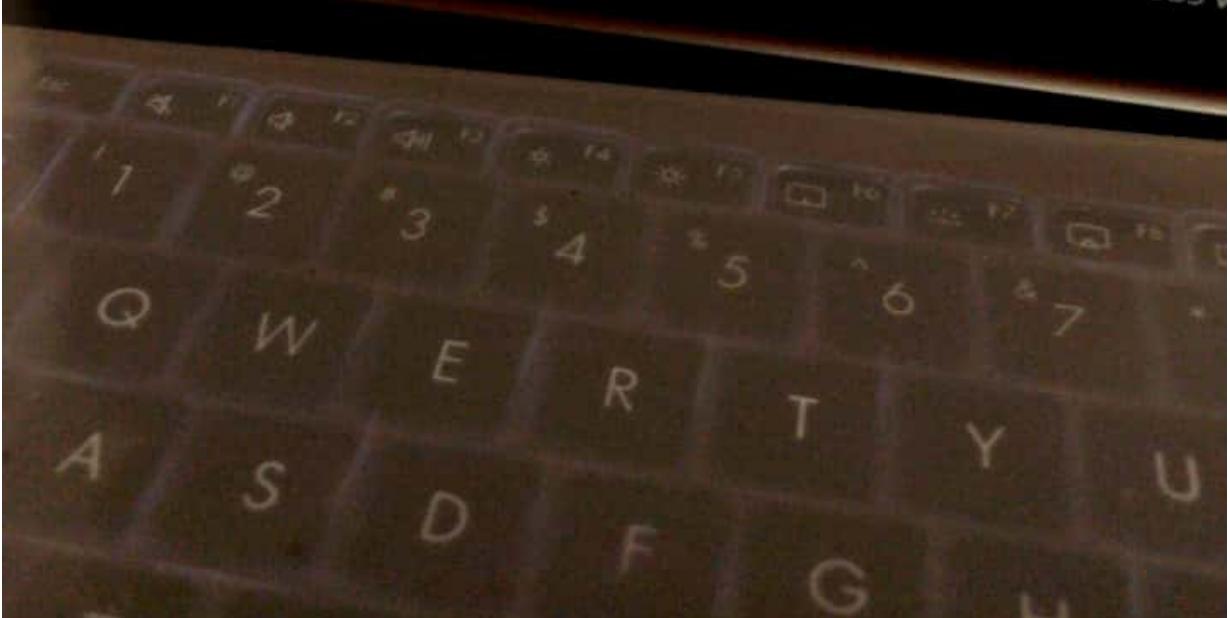
$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer:

-2.5 //

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Question 23

Not yet answered

Marked out of
1.00

Flag question

Find the following definite integral.

$$\int_0^2 |2x - 3| dx$$

(Write your answer as a fraction Eg: 3/2, Please remove spaces from the answer)

Answer:

~~-5/2~~ $\frac{5}{2}$

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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)

199.2



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Question 23

Not yet answered

Marked out of
1.00

Flag question

Find the following definite integral.

$$\int_0^2 |2x - 3| dx$$

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

Answer:

I

Question 24

Not yet answered
Marked out of
0.00[Flag question](#)

The function $f : \mathbb{Z} \rightarrow \mathbb{Z}$ defined by

$$f(n) = \begin{cases} \frac{n}{2} & \text{if } n \text{ is even} \\ \frac{n+1}{2} & \text{if } n \text{ is odd} \end{cases}$$

Is the function one to one ?

- Yes
- No

Is the function onto?

- No
- Yes

≡ Quiz navig

DECLARATION

1

EXAM QUESTIONS

1	2	3	4
9	10	11	12
17	18	19	20
25	26	27	28
			1

[Next page](#)

[Finish attempt ...](#)

Time left 0:13:20

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

Find the determinant of the above matrix.: 2

Find the inverse of the matrix A. $A^{-1} = \begin{bmatrix} \frac{2}{2} & \frac{b}{d} \\ \frac{-c}{2} & \frac{1}{2} \end{bmatrix}$

a = :

b = :

c = :

d = :

(Write your answer with one decimal place)

Question 17

Not yet answered

Marked out of
2.00

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)



Online Exams

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on 19

not answered
1 out of

Flag question

$$f(x) = (x^2 + 1)/(x^3 - 3x).$$

Find $f'(2)$.

Hint : Differentiate the function and Substitute 2.

(Write your answer as a fraction. Eg; 4/5, No spaces should be in the answer)

Answer:

$$\frac{-3}{4}$$



Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^3} - 3\right) dx.$$

(Keep your answer with three decimal places)

Answer: -8.625

Online Exams



Sri Lanka Institute of Information Technology

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

Find $f'(-2)$.

Hint : Differentiate the function and Substitute -2.
(No spaces should be in the answer)

Answer:

 Online Exams

Sri Lanka Institute of Information Technology

Find the following definite integral.

$$\int_{-1}^0 |3x - 4| dx$$

(Write your answer as a fraction Eg: 3/2, Please remove spaces from the answer)

Answer:

Question 18

Not yet answered

Marked out of
1.00

Flag question

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^3} - 3\right) dx.$$

(Keep your answer with three decimal places)

Answer: -1.5

If repetition is not allowed, then how many numbers between 2000 and 3000 can be formed using the digits from 0 to 7?

Answer = : 210

Next page

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

Find $f'(2)$.

Hint : Differentiate the function and Substitute 2.

(Write your answer as a fraction. Eg; 4/5, No spaces should be in the answer)

Answer:



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Consider the following function.

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

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

2. Find the definite integral of $f(x)$ from 0 to 6 :

(Keep Your answer to one decimal place)

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 page

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer:

$$\text{Let } A = \begin{bmatrix} 4 & 3 & 1 \\ 5 & 0 & 6 \\ 5 & 2 & 3 \end{bmatrix}$$

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

Assume I is the identity matrix.

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

$a = :$

$b = :$

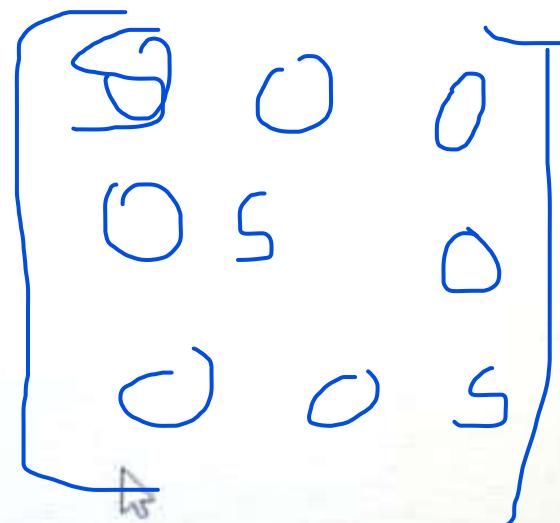
$c = :$

$d = :$

$e = :$

$f = :$

$g = :$



A handwritten matrix D is shown in blue ink. The matrix is a 3x3 grid. The top-left entry is circled. The middle-right entry is circled. The bottom-right entry is circled. The other entries are not circled.

$$D = \begin{bmatrix} 5 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{bmatrix}$$



Online Exams

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17

Powered
out of
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 :



Online Exams

Sri Lanka Institute of Information Technology

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^3} - 3 \right) dx.$$

(Keep your answer with three decimal places)

Answer: -2.625

I



Question 17

Not yet answered

Marked out of
2.00

Flag question

Consider the following function.

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

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

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



Online Exams

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Please mention the question numbers of the questions of which you encountered the trouble?

(this is optional and marks allocated for this question is 0)

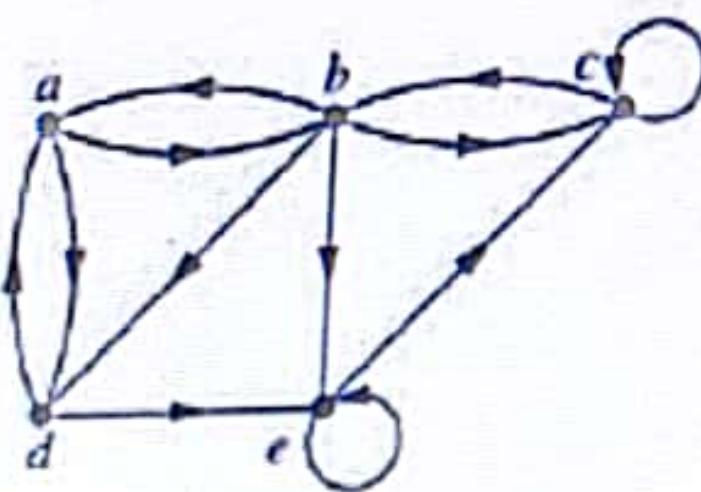
Question 22

Not yet answered

Marked out of
3.00

Flag question

Consider the following Directed Graph.



Number of Edges = : 12

Total Indegree = : 12

Total Outdegree = : 12

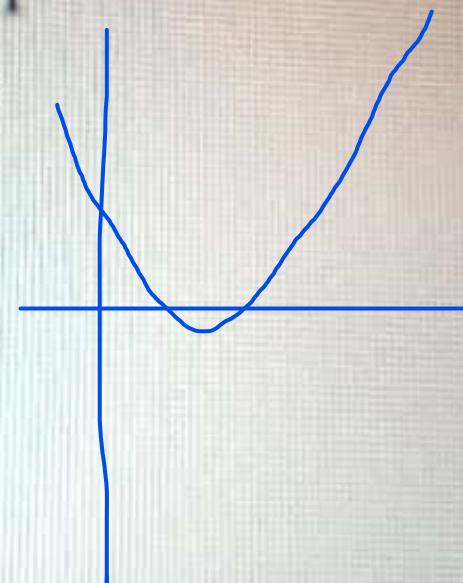
\mathbb{N} Refers to all the positive integers. (Called as Natural Numbers)

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

Is f a One to one function? $\times \quad \times$

Is f an onto function? \times

Does f has an inverse function? \times



Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & 1 & 1 & -1 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

a =

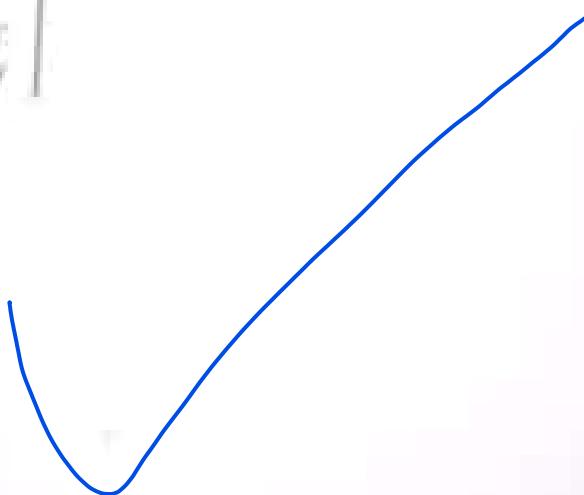
b =

c =

d =

e =

f =





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Total number of words formed by 2 vowels and 3 consonants taken from 4 vowels and 5 consonants is equal to

(No spaces should be there in the answer)

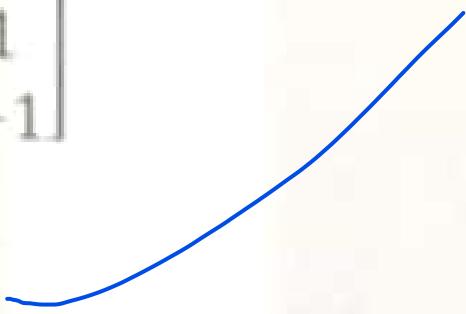


Answer:

7200 //

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 2 & -1 \end{bmatrix}$$



a = 2 *

b = Choose... *

c = Choose... *

d = Choose... *

e = Choose... *

f = Choose... *

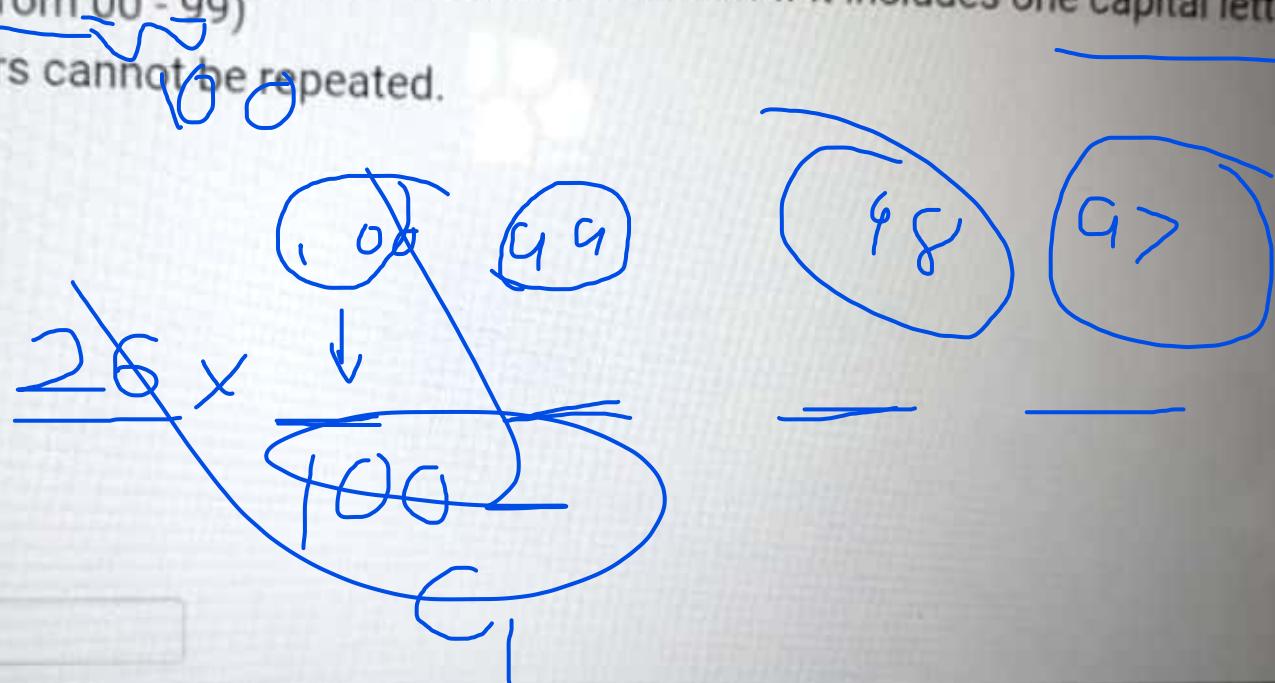


Find how many Govisetha Tickets can be Printed in a one Draw if it includes one capital letter and 4 numbers. (Any number from 00 - 99)

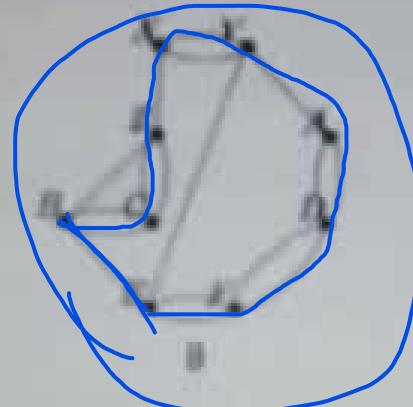
Assume that the numbers cannot be repeated.



Answer:



Which of these graphs have Hamiltonian Circuits?



Cir
↓
R



Question 7
Score per answer
Marked out of 1.00
View question

Find how many Legna Wasanawa Tickets can be Printed in a one Draw if it includes one zodiac sign and 4 numbers. (Any number from 00 - 99)

Assume that the numbers cannot be repeated in a one ticket.



12

10088

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer:

Question 16

Not yet answered

Marked out of
6.00

Flag question

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 1 & 1 & 0 & -1 & 2 & 1 \\ 0 & 0 & 2 & 6 & -2 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

$$a = \text{?}$$

$$b = \text{?}$$

$$c = \text{?}$$

$$d = \text{?}$$

$$e = \text{?}$$

$$f = \text{?}$$

Consider the following function.

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

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

68

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

3q

Question 17

Not yet answered
Marked out of
2.00
 Flag question

Consider the following function.

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

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



Online Exams

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If $|A| = -35$ then find the cofactor matrix of A.

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

C_{11} Choose...

C_{12} Choose...

C_{13} Choose...

C_{21} Choose...

C_{22} Choose...

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 0 & 1 \end{bmatrix}$$

a = Choose...

b = Choose...

c = Choose...

d = Choose...

e = Choose...

f = Choose...

$$\text{Let } A = \begin{bmatrix} 4 & 3 & 1 \\ 5 & 0 & 6 \\ 5 & 2 & 3 \end{bmatrix}$$

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

Assume I is the identity matrix.

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

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$

$$e = :$$

$$f = :$$

$$g = :$$



Online Exams

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$$f(x) = \frac{-(x+1)}{4x+7}$$

Find $f'(-3/2)$.

Hint : Differentiate the function and Substitute $-3/2$.

(No spaces should be in the answer)

Answer:

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & -2 & -1 & 2 & 1 \\ 0 & 0 & 3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

a = :

b = :

c = :

d = :

e = :

f = :

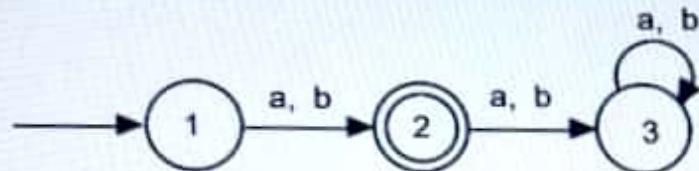
Question 13

Not yet answered

Marked out of
4.00

Flag question

Consider the following finite state Machine A.



What is the initial State?

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

Find $N(2, a)$

Find $N(1, b)$

Choose... ▾

Choose... ▾

Choose... ▾

Choose... ▾

Next page

≡ Quiz navigation

DECLARATION

1

EXAM QUESTIONS

1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
I				

Finish attempt...

Time left 0:31:24

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

Find the determinant of the above matrix.:

Find the inverse of the matrix A. $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

$$a = : | \quad |$$

$$b = :$$

$$c = :$$

$$d = :$$

(Write your answer with one decimal place)



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Question 26

Not yet answered

Marked out of
1.00

Flag question

In a Cricket tournament, there are 45 matches. If each team plays one match with every other team, the number of teams is :

[Next page](#)

≡ Quiz navigation

DECLARATION



EXAM QUESTIONS

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29			

[Finish attempt ...](#)

Time left 0:24:08



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Consider the following function.

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

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

2. Find the definite integral of $f(x)$ from 0 to 6 : _____

(Keep Your answer to one decimal place) _____

Question 8

Not yet answered

Marked out of

0.00

Flag question

$$4x - 2y = 8$$

$$3x - 5y = -1$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

$$|A| = \boxed{}$$

$$P = \boxed{}$$

$$Q = \boxed{}$$

$$R = \boxed{}$$

$$S = \boxed{}$$

$$X = \boxed{}$$

$$Y = \boxed{}$$





Online Exams

Sri Lanka Institute of Information Technology

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$$f(x) = (x^2 + 1)/(x^3 - 3x).$$

Find $f'(2)$.

Hint : Differentiate the function and Substitute 2.

(Write your answer as a fraction. Eg; 4/5, No space

Answer:

I

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

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

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

No spaces should be in the answer)

Answer:

1/2

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 2 & 1 & 0 & -1 & 2 & 1 \\ 0 & 0 & 3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

a = :

b = :

c = :

d = :

e = :

f = :

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

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

Answer: -1



Online Exams

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Question 10

Not yet answered

Marked out of
1.00

Flag question

Consider the following linear system of equations.

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

$$x + y - z = 0$$

$$2x + 2y + az = 5$$

Find the value of a if the above system of equations have a unique solution.

Answer: 



Online Exams

Sri Lanka Institute of Information Technology

Consider the following linear system of equations.

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

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

$$x + 2y + az = 1$$

Find the value of a if the above system of equations have no solution.

Answer:

I



Online Exams

Sri Lanka Institute of Information Technology

8

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t of
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Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer:

Question 12

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(10 - x)}{5}$$

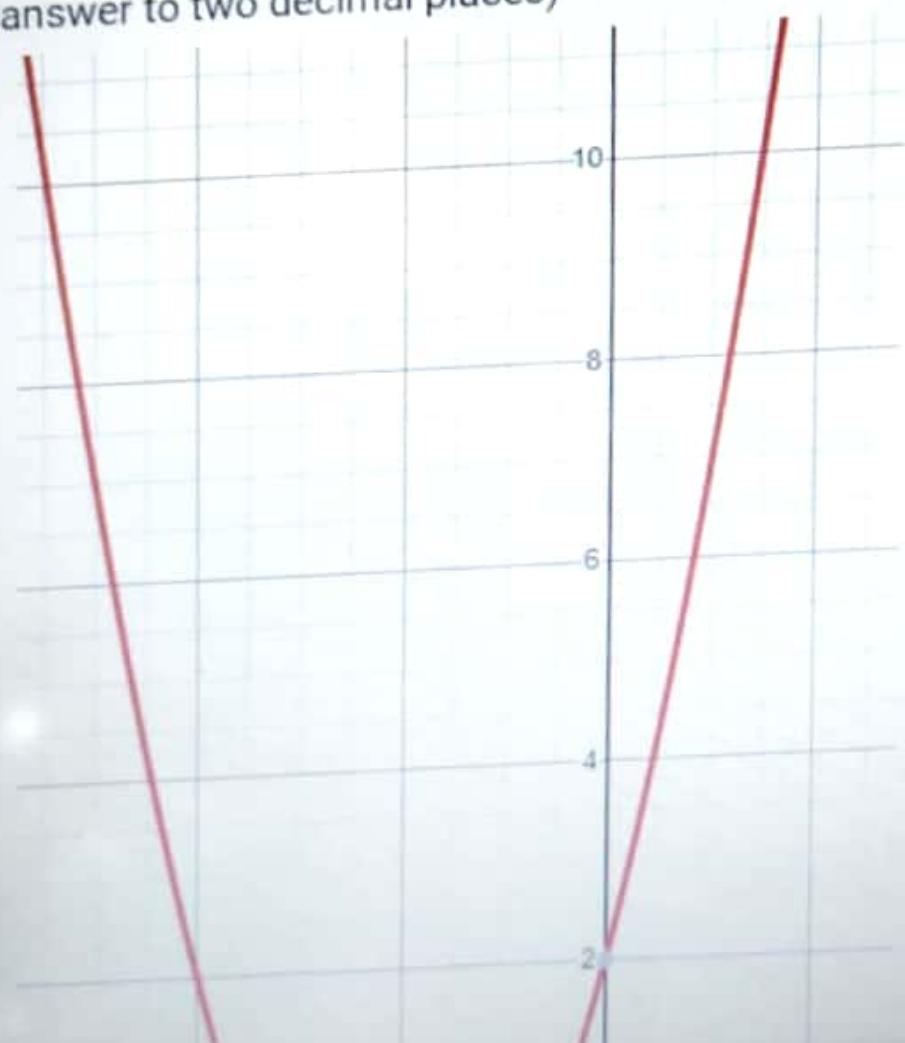
Find $g^{-1}(-3)$

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

Answer:

[Next page](#)

Graph of $y = x^2 + 4x + 2$ is given below. Find the area under the curve from -2 to 2. (Round your answer to two decimal places)



12 22

C_{13} 4

C_{21} 13

C_{22} -10

C_{23} 4

C_{31} 6

C_{32} 20

C_{33} -5

Marked out of
9.00
 Flag question

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

C_{11}

C_{12}

C_{13}

C_{21}

C_{22}

C_{23}



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ation

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ -2 & 1 & 0 & -1 & 2 & 1 \\ 0 & 0 & -3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

a = :

b = :

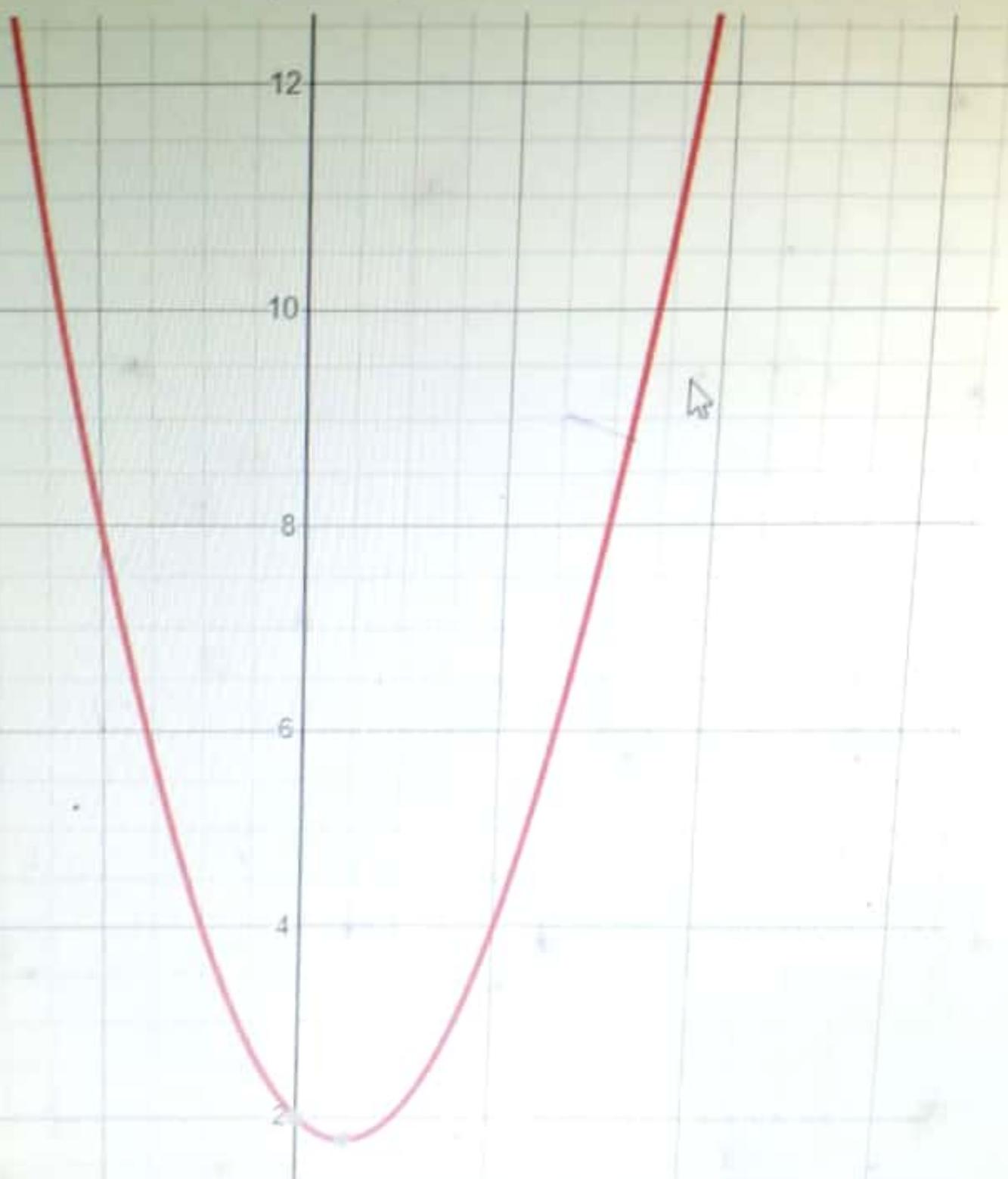
c = :

d = :

e = :

f = :

Graph of $y = x^2 - x + 2$ is given below. Find the area under the curve (answer to 2 decimal places)





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Consider the following function.

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

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





Question 12

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(3x - 7)}{2}$$

Find $g^{-1}(4)$

Hint : Find the inverse of g and substitute 4.

Answer:



Online Exams

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Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & 2 & -1 & 0 \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

a = Choose...

b = Choose...

c = Choose...

d = Choose...

e = Choose...

f = Choose...

Question 18

Not yet answered

Marked out of
1.00

 Flag question

Find the following definite integral.

$$\int_1^2 \left(\frac{1}{x^2} - 3x \right) dx.$$

Answer:



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

Find $f'(-1)$.

Hint : Differentiate the function and Substitute -1.

Answer:



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17

answered

out of

question

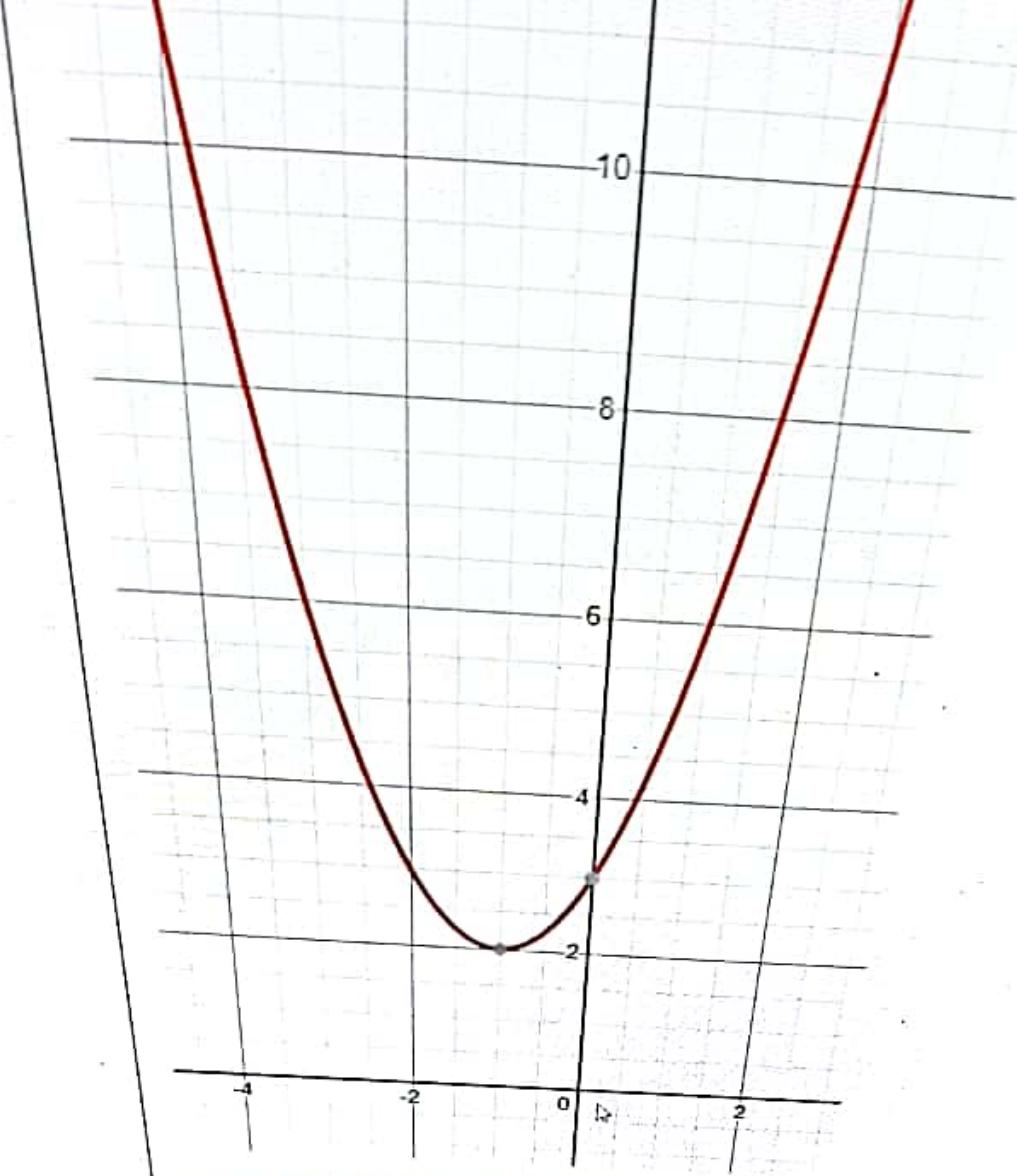
Consider the following function.

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

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

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

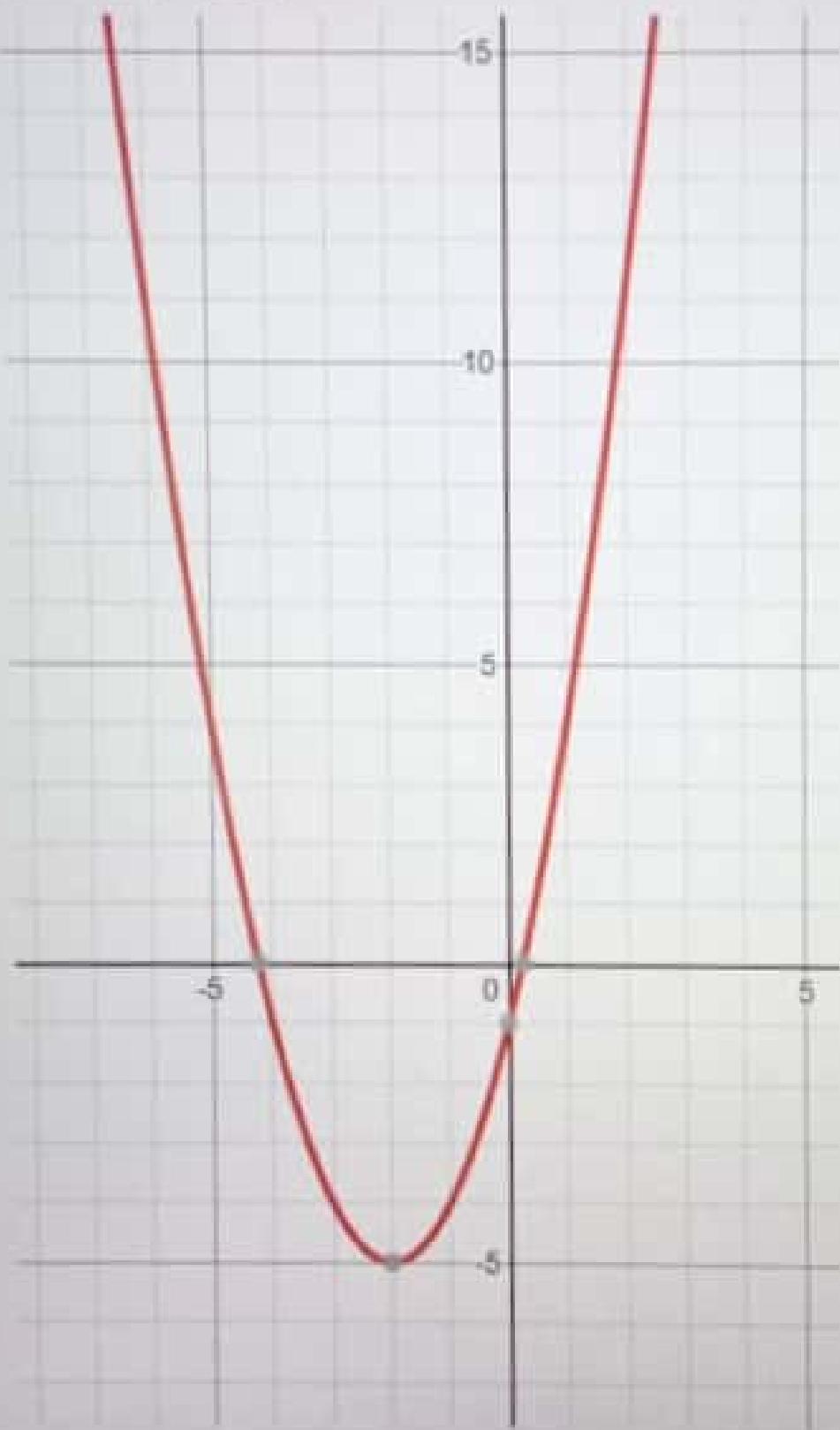
4



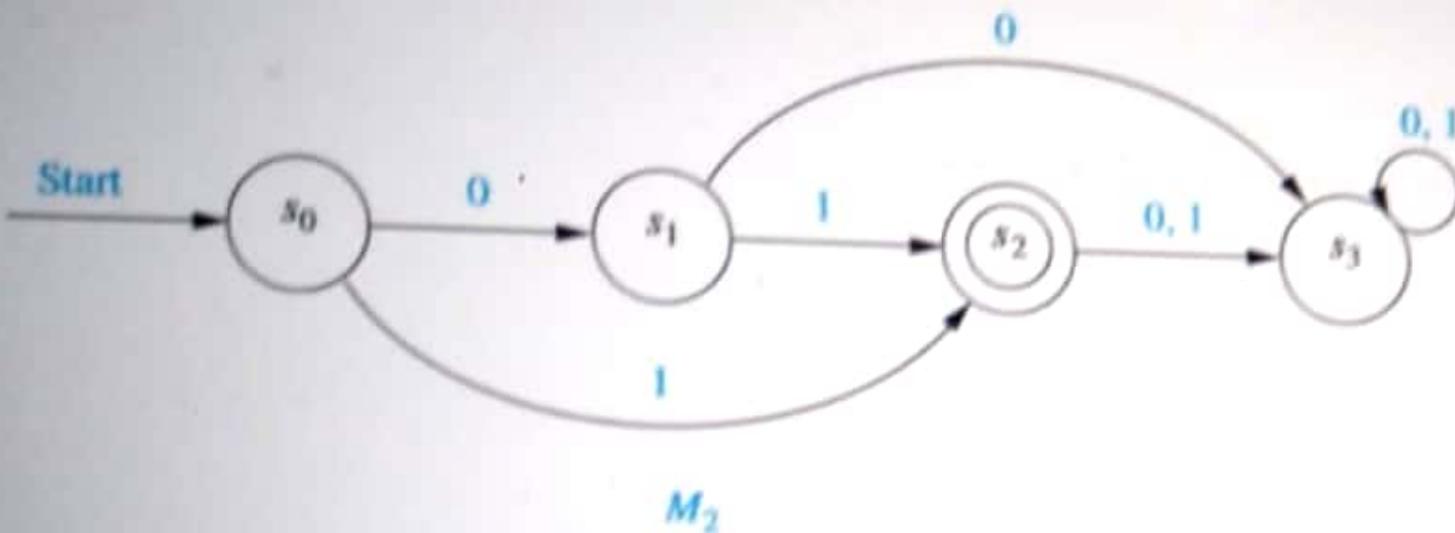
Answer: 17.33



Graph of $y = x^2 + 4x - 1$ is given below. Find the area under the curve (3 decimal places)



... State Machine A.



What is the initial State?

51

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

50

What is the Accepting State?

52

Find $N(s_1, 0)$

53

Consider the following function.

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

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

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

Find the following definite integral.

$$\int_{-1}^2 \left(\frac{1}{x^2} - 3\right) dx.$$

(Keep your answer with a one decimal place)

Answer: -9.4

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Consider the following function.

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

1. Find $f'(-3)$: 15
2. Find the definite integral of $f(x)$ from -3 to 3 : -6



Question 14

Not yet answered

Marked out of
9.00 Flag questionIf $|A| = 64$ then find the cofactor matrix of A.

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

 C_{11} Choose... • C_{12} Choose... • C_{13} Choose... • C_{21} Choose... • C_{22} Choose... • C_{23} Choose... •



Online Exams

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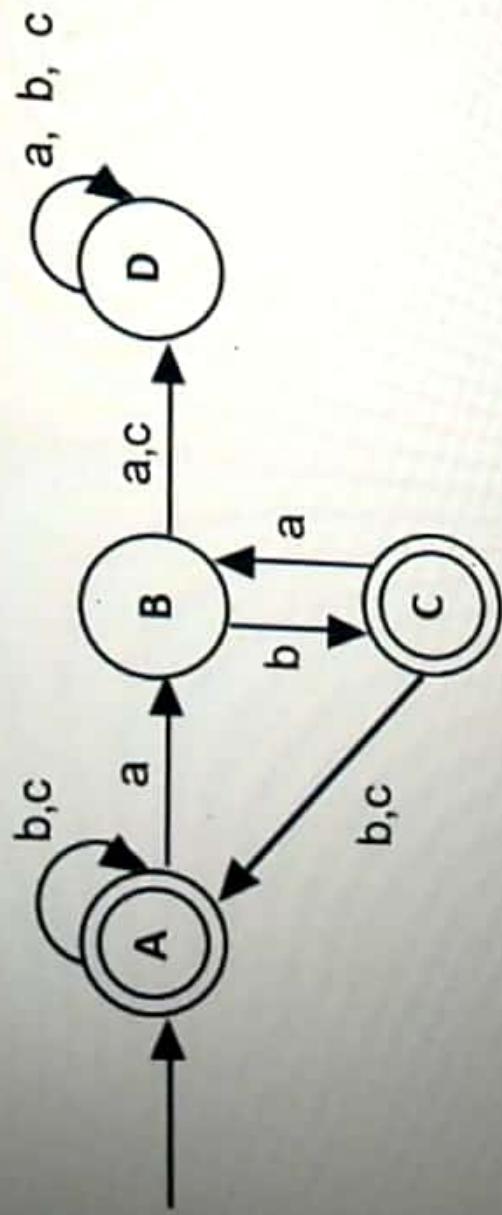
Consider the following function.

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

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

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

Consider the following finite state Machine A.



What is the initial State?

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

Find $N(C, a)$

Find $N(A, b)$

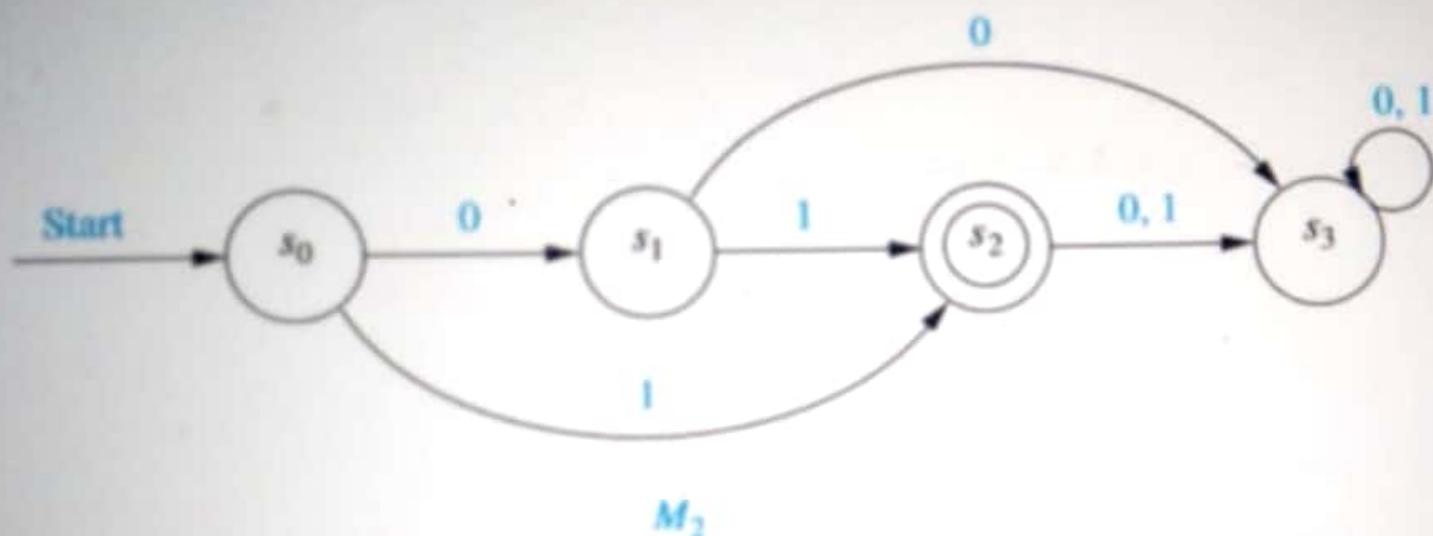
A

D

B

A

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... ▾



Question 11

Not yet answered

Marked out of
6.00

Flag question

Find the values of the resulting matrix.

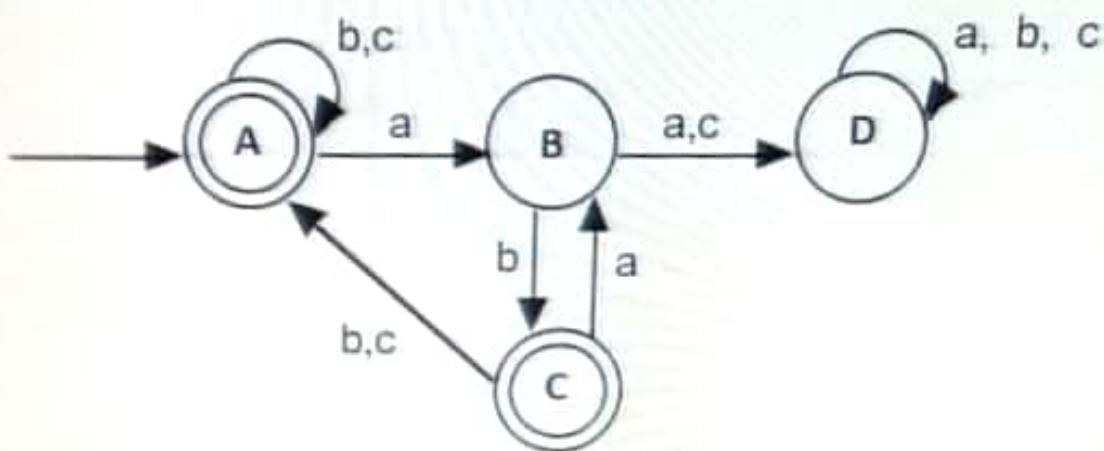
$$\begin{bmatrix} 1 & 0 & 1 & 1 & 0 & 2 \\ 0 & 1 & 2 & -1 & 0 & 1 \\ 0 & 0 & 1 & 1 & 2 & -1 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 2 & -1 \end{bmatrix}$$

a = Choose...**b** = Choose...**c** = Choose...**d** = Choose...**e** = Choose...**f** = Choose...

Consider the following finite state Machine A.



What is the initial State?

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

Find $N(C, a)$

Find $N(A, b)$

Consider the following linear system of equations.

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

$$x - y - z = 4$$

$$-x - y + az = -2$$

Find the value of a if the above system of equations has

Answer: _____

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & -1 & -1 & 2 & 1 \\ 0 & 0 & -3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a , b , c , d , e and f .

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$

$$e = :$$

$$f = :$$

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

Find the determinant of the above matrix.:

Find the inverse of the matrix A. $A^{-1} = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

a = :

b = :

c = :

d = :

(Write your answer with one decimal place)



Question 10

Not yet answered

Marked out of
1.00

 Flag question

$$A = 100101101 + 100110101$$

Find the 2's Complement of A.

(No spaces should be there in your answer)

Answer:

I

Next

Online Exams

Sri Lanka Institute of Information Technology

Consider the following system of linear equations.

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

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

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

Represent the above equations in $A\underline{x} = \underline{b}$ form.

Assume that you solve this using Cramer's Rule.

Then $x = \frac{|A_1|}{|A|}$

Answer for $|A_1|$

Choose... ▾

Answer for $|A|$

Choose... ▾

Answer for x

Choose... ▾

Let A be a 2×2 matrix. Find $B = A^2 + 2A$

Let

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

Let

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

Answer for a = :

Answer for b = :

Answer for c = :

Answer for d = :



Online Exams

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Question 14

Not yet answered

Marked out of
1.00 Flag question

Simplify the following boolean expression.

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

Select one:

- $\bar{A} + (B + C)(\bar{B} + \bar{C})$
- $\bar{A} + (\bar{B} + C)(\bar{B} + \bar{C})$
- $\bar{A} + (B + \bar{C})(\bar{B} + \bar{C})$
- $\bar{A} + (B + C)(\bar{B}, \bar{C})$
- None of the above



Online Exams

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Question 17

One per assessment

Marked out of
1.00

1 attempts

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

Find $f'(-1)$.

Hint: Differentiate the function and Substitute -1.

Answer:



Online Exams

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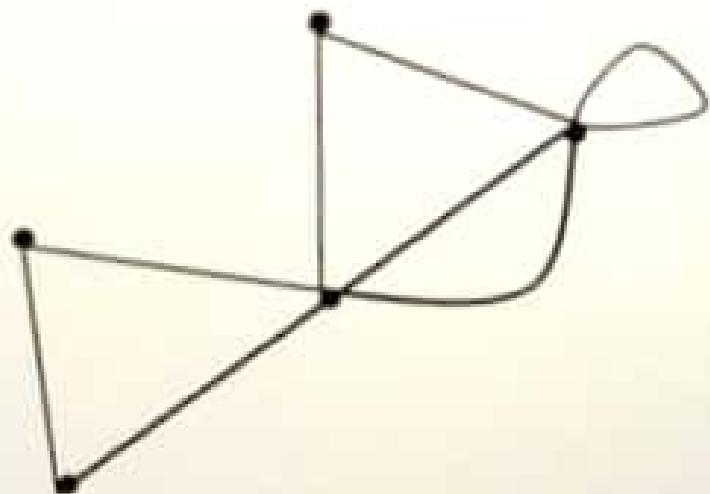
Question 12

Not yet answered

Marked out of
4.00

Flag question

Consider the following graph.



Determine whether the above graph has the followings.

Hamilton Path Choose... *

Hamilton Circuit Choose... *

Euler Path Choose... *

Euler Circuit Choose... *

Following adjacency matrix represents an undirected

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

Find the following.

Number of loops

Choose... ▾

Number of edges

Choose... ▾

Number of vertices

Choose... ▾

Total degree

Choose... ▾

Question 7

Not yet answered

Marked out of
2.00

Flag question

what is the value of x ?

int x = 50 % 6 + 2 *3 + (4 - 1) / 2 + 9

Select one:

- 1. 24.5
- 2. 24
- 3. 18.5
- 4. 18
- 5. 16



Online Exams

Sri Lanka Institute of Information Technology

Consider the following system of linear equations.

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

$$2x - 3y - z = 6$$

$$x - y - z = 2$$

Represent the above equations in $A\bar{x} = \bar{b}$ form.

Assume that you solve this using Cramer's Rule.

Then $\bar{x} = \frac{|A_1|}{|A|}$

Answer for $|A_1|$ Choose...

Answer for $|A|$ Choose...

Answer for \bar{x} Choose...

red
on

What is the value of x ?

int x = 20 / 3 + (5 - 1) * 2 - 60 % 12

Select one:

- a. 4
- b. 14.33
- c. 4.33
- d. 14
- e. 9



Online Exams

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Question 7

Not yet answered

Marked out of
2.00 Flag question

what is the value of x ?

$$\text{int } x = 50 \% 6 + 2 * 3 + (4 - 1) / 2 + 9$$

Select one:

- 1. 24
- 2. 24.5
- 3. 18
- 4. 16
- 5. 18.5



Question 12

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

$$g: \mathbb{R} \rightarrow \mathbb{R} \quad g(x) = \frac{(-x + 2)}{3}$$

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

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

Answer:

[Next page](#)

$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & -1 & -1 & 2 & 1 \\ 0 & 0 & -3 & 6 & -3 & 18 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & 1 & -1 & 2 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

Find the values of a, b, c, d, e and f.

$$a = : \boxed{}$$

$$b = : \boxed{}$$

$$c = : \boxed{}$$

$$d = : \boxed{}$$

$$e = : \boxed{}$$

$$f = : \boxed{}$$



Online Exams

Sri Lanka Institute of Information

Consider the following raw operation and

$$\begin{bmatrix} 1 & 2 & 1 & 3 \\ 2 & 4 & 0 & 9 \\ 3 & 4 & 8 & 0 \end{bmatrix}$$

$$r_2' = r_2 - 2r_1$$



$$\begin{bmatrix} a & b & c & d \\ e & f & g & h \\ i & j & k & l \end{bmatrix}$$

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$

$$e = :$$

$$f = :$$

$$g = :$$

$$h = :$$



Online Exams

Sri Lanka Institute of Information Technology

Question 11

Not yet answered

Marked out of
6.00

Flag question

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & -1 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

a = Choose... *

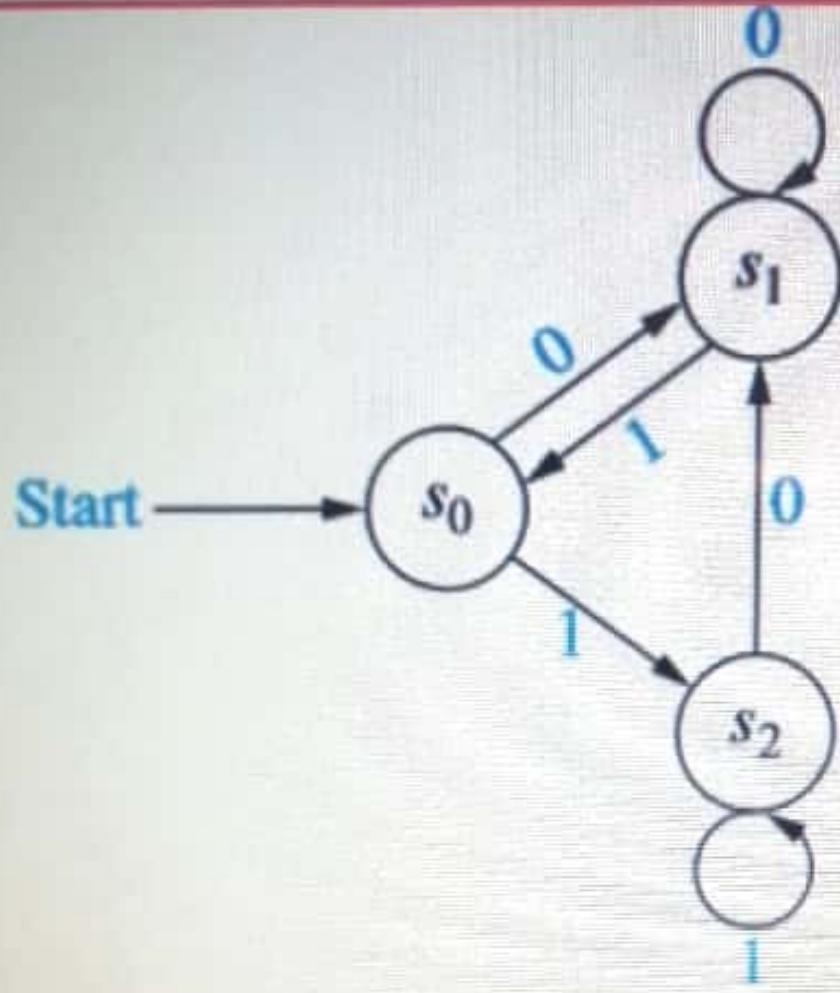
b = Choose... *

c = Choose... *

d = Choose... *

e = Choose... *

f = Choose... *



What is the initial State?

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

Find $N(s_1, 0)$

Find $N(s_2, 0)$

Question 12

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(-2x + 1)}{3}$$

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

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

Answer: -5

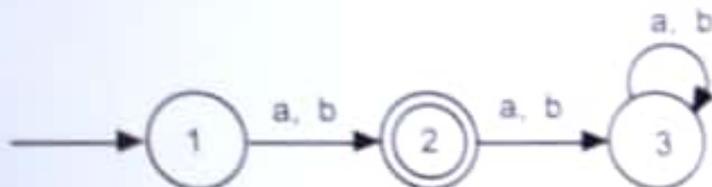


Online Exams



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Consider the following finite state Machine A.



What is the initial State?

1

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

3

Find $N(2, a)$

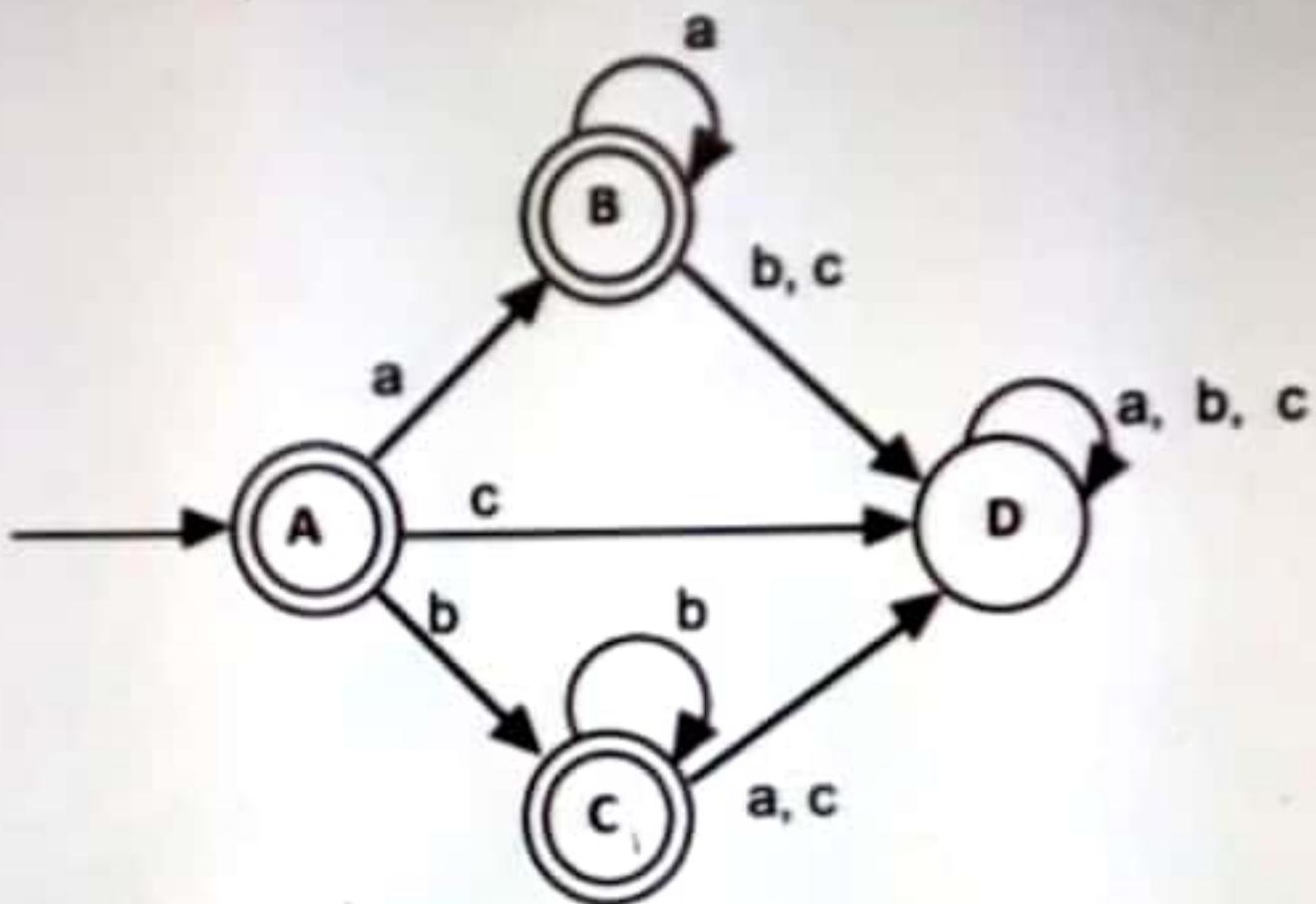
3

Find $N(1, b)$

2

Q

Next



What is the initial State?

A

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

D

Find $N(C, a)$

D

Find $N(D, b)$

D

Moodle

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Question 12

Not yet answered

Marked out of 1.00

Flag question

Consider the following function.

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

Find $g^{-1}(-5)$

Hint : Find the inverse of g and substitute -5.

Answer: -3



Online Exams

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Consider the following raw operation and find the value

$$\begin{bmatrix} 1 & 2 & 1 & 3 \\ 2 & 4 & 0 & 9 \\ 3 & 4 & 8 & 0 \end{bmatrix}$$

$$r_3' = r_3 - 3r_1$$


$$\begin{bmatrix} a & b & c & d \\ e & f & g & h \\ i & j & k & l \end{bmatrix}$$

$$a = :$$

$$b = :$$

$$c = :$$

$$d = :$$

$$e = :$$

$$f = :$$

Question 12

Not yet answered

Marked out of
1.00

Try again

Consider the following function.

$$g: \mathbb{R} \rightarrow \mathbb{R} \quad g(x) = \frac{(-2x + 1)}{3}$$

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

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

Answer:

Online Exams

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Consider the following linear system of equations.

$$x + y + z = 1$$

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

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

Find the value of a if the above system of equations have no solution.

Answer:

Question 11

Not yet answered

Marked out of
6.00

Flag question

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 2 & -1 \end{bmatrix}$$

$a = 0$

$b = -2$

$c = 3$

$d = -3$

$e = -4$

$f = 5$

≡ Quiz navigation**DECLARATION**

1
2

EXAM QUESTIONS

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

Finish attempt ...

Time left 0:50:20

Online Exams

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Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(5x - 9)}{2}$$

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

Hint : Find the inverse of g and substitute -5.

Answer: -1/5

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... ▾

Question 12

Not yet answered

Marked out of
1.00

Flag question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(-2x + 1)}{3}$$

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

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

Answer:

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & -1 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

a =	Choose...
	Choose...
b =	2
	-1
c =	-5
	1
d =	-3
	3
e =	4
	6
f =	-2



Online Exams

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Consider the following function.

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

Find $g^{-1}(-5)$

Hint : Find the inverse of g and substitute -5.

Answer:

Online Exams

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Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(10-x)}{5}$$

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

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

Answer:

Question 11

Not yet answered

Marked out of
6.00

Flag question

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & d & e & f \\ 0 & 0 & 1 & 1 & 2 & -1 \end{bmatrix}$$

 $a =$ Choose... $b =$ Choose... $c =$ Choose... $d =$ Choose... $e =$ Choose... $f =$ Choose...

DECLARATION

EXAM QUESTIO

Finish attempt...

Time left 0:51:02

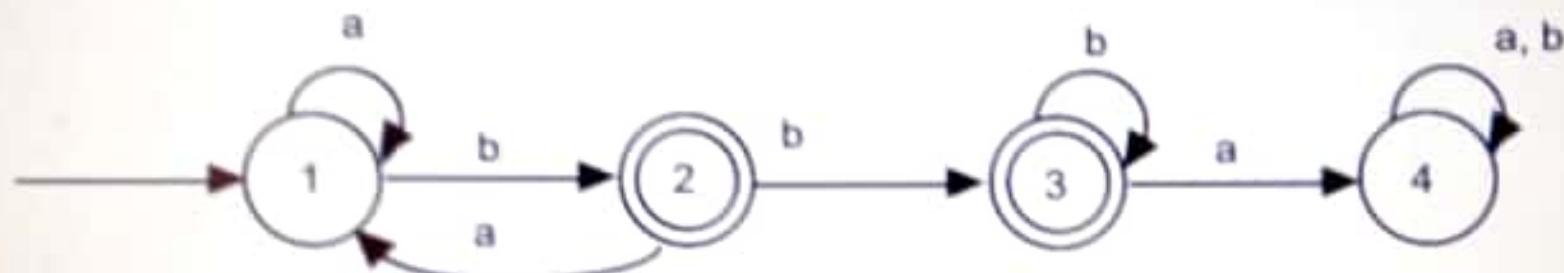
Question 13

Not yet answered

Marked out of
4.00

Flag question

Consider the following finite state Machine A.



What is the initial State?

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

Find $N(2, a)$

Find $N(3, b)$

1

4

1

3

x



Online Exams

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$$4x - 2y = 8$$

$$3x - 5y = -1$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

$$|A| = :$$

$$p = :$$

$$q = :$$

$$r = :$$

$$s = :$$

$$x = :$$

$$y = :$$

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

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

C_{11}

Choose... ▾

Choose...

23

14

-14

-23

4

-4

40

24

10

-40

-8

-10

15

41

8

C_{21}

C_{22}

C_{23}

Choose... ▾

C_{31}

Choose... ▾

C_{32}

Choose... ▾

Online Exams

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Consider the following linear system of equations.

$$x + y + z = 3$$

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

$$x - y + az = -1$$

Find the value of a if the above system of equations have no

Answer:

$$3x - 4y = 1$$

$$2x + 3y = 12$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

$$|A| = :$$

$$p = :$$

$$q = :$$

$$r = :$$

$$s = :$$

$$x = :$$

$$y = :$$



Consider the following linear system of equations.

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

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

$$x + 2y + az = 1$$

Find the value of a if the above system of equations have no solution.

Answer: 2

Find the values of the resulting matrix.

$$\begin{bmatrix} 1 & 0 & -2 & 1 & 0 & -1 \\ 0 & 1 & 0 & 0 & 0 & 1 \\ 0 & 0 & 3 & 3 & 0 & 6 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 & a & b & c \\ 0 & 1 & 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

a = choose...

b = choose...

c = choose...

d = choose...

e = choose...

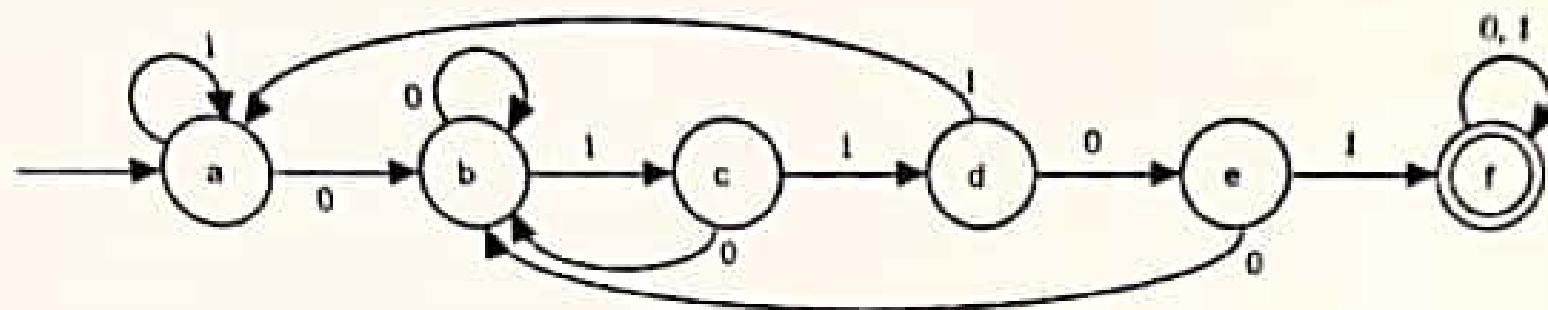
f = choose...



Online Exams

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Consider the following finite state Machine A.



What is the initial State?

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

Find $N(d, 1)$

Find $N(f, 0)$

a	.
a	.
b	.
c	.
d	.
e	.
f	.





Online Exams

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2

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ut of

question

Consider the following function.

$$g: R \rightarrow R \quad g(x) = \frac{(5x - 15)}{2}$$

Find $g^{-1}(5)$

Hint : Find the inverse of g and substitute 5.

Answer:

I



Online Exams

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Consider the following linear system of equations:

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

$$x - y - z = 4$$

$$-x - y + az = -2$$

Find the value of a if the above system of equations has a unique solution.

Answer:



Consider the following function.

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

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

Hint : Find the inverse of g and substitute 2.

Answer:

ion 11

et answered
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ag question

Find the values of the resulting matrix.

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



$$\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & -1 \\ 0 & 1 & 0 & a & b & c \\ 0 & 0 & 1 & d & e & f \end{bmatrix}$$

$a =$ Choose...

$b =$ Choose...

$c =$ Choose...

$d =$ Choose...

$e =$ Choose...

$f =$ Choose...



Online Exams

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$$4x - 2y = 8$$

$$3x - 5y = -1$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.



$$|A| = :$$

$$p = :$$

$$q = :$$

$$r = :$$

$$s = :$$

$$x = :$$

$$y = :$$



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Question 10

Not yet answered

Marked out of
1.00

 Flag question

Consider the following linear system of equations.

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

$$x + y - z = 0$$

$$2x + 2y + az = 5$$

Find the value of a if the above system of equations have no solution.

Answer:

[Next page](#)



[Finish attempt ...](#)

Time left 1:05:53

≡ Quiz navigation

DECLARATION



EXAM QUESTIONS

1	2	3	4	5	6	7
9	10	11	12	13	14	15
17	18	19	20	21	22	23
25	26	27	28	1		

Question 7

Not yet answered

Marked out of
7.00

Flag question

Consider the following linear system.

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

$$2x + y - 3z = 8$$

$$x - y + z = 0$$

$$x = \frac{|A_1|}{|A|} \quad y = \frac{|A_2|}{|A|} \quad z = \frac{|A_3|}{|A|}$$

Find the following.

$$|A_1| = :$$

$$|A_2| = :$$

$$|A_3| = :$$

$$|A| = :$$

$$x = :$$

$$y = :$$

$$z = :$$

Consider the following linear system.

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

$$2x + y - 3z = 8$$

$$x - y + z = 0$$

$$x = \frac{|A_1|}{|A|} \quad y = \frac{|A_2|}{|A|} \quad z = \frac{|A_3|}{|A|}$$

Find the following.

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

$$|A_2| = : \boxed{}$$

$$|A_3| = : \boxed{}$$

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

$$x = : \boxed{}$$

$$y = : \boxed{}$$

$$z = : \boxed{}$$

$$3x - 5y = 1$$

$$4x - 3y = 5$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

$$|A| = : 11$$

$$p = : -3$$

$$q = : 5$$

$$r = : -4$$

$$s = : 3$$

$$x = : 2$$

$$y = : 1$$

$$2x + 3y = 7$$

$$3x - 5y = 1$$

Represent the above equations in $Ax = b$ form.

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

Find the Following.

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

$$p = : \boxed{}$$

$$q = : \boxed{}$$

$$r = : \boxed{}$$

$$s = : \boxed{}$$

$$x = : \boxed{}$$

$$y = : \boxed{}$$

Consider the following linear system.

$$x + y + z = 0$$

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

$$x - 3y + 2z = -10$$

$$x = \frac{|A_1|}{|A|} \quad y = \frac{|A_2|}{|A|} \quad z = \frac{|A_3|}{|A|}$$

Find the following.

$$|A_1| = :$$

$$|A_2| = :$$

$$|A_3| = :$$

$$|A| = :$$

$$x = :$$

$$y = :$$

$$z = :$$

$$3x - 4y = 1$$

$$2x + 3y = 12$$

Represent the above equations in $Ax = b$ form.
Let $\text{adj } A = \begin{bmatrix} p & q \\ r & s \end{bmatrix}$

Find the Following.

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

$$p = : \boxed{}$$

$$q = : \boxed{}$$

$$r = : \boxed{}$$

$$s = : \boxed{}$$

$$x = : \boxed{}$$

$$y = : \boxed{}$$



Consider the following linear system.

$$x + y - z = 2$$

$$2x - 3y + 4z = -7$$

$$y + z = 0$$

$$x = \frac{|A_1|}{|A|} \quad y = \frac{|A_2|}{|A|} \quad z = \frac{|A_3|}{|A|}$$

Find the following.

$$|A_1| = : 0$$

$$|A_2| = : -11$$

$$|A_3| = : 11$$

$$|A| = : -11$$

$$x = : 0$$

$$y = : -1$$

$$z = : + 1$$



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ag question

Find the determinant of A.

$$A = \begin{bmatrix} 2 & -3 & 5 \\ -3 & 6 & 2 \\ 1 & -2 & 5 \end{bmatrix}$$

Answer: 17

I

Find the determinant of A.

$$A = \begin{bmatrix} -5 & -8 & 8 \\ 7 & 9 & -4 \\ 6 & 5 & 6 \end{bmatrix}$$

Answer: -554

I

Find the determinant of A.

$$A = \begin{bmatrix} -5 & -8 & 8 \\ 7 & 9 & -4 \\ 6 & 5 & 6 \end{bmatrix}$$



Answer:

Following adjacency matrix represents a graph

1	0	1	2
1	1	0	1
0	1	0	1
0	1	0	0

Find the following.

This graph is a

- Undirected Graph
- Directed Graph

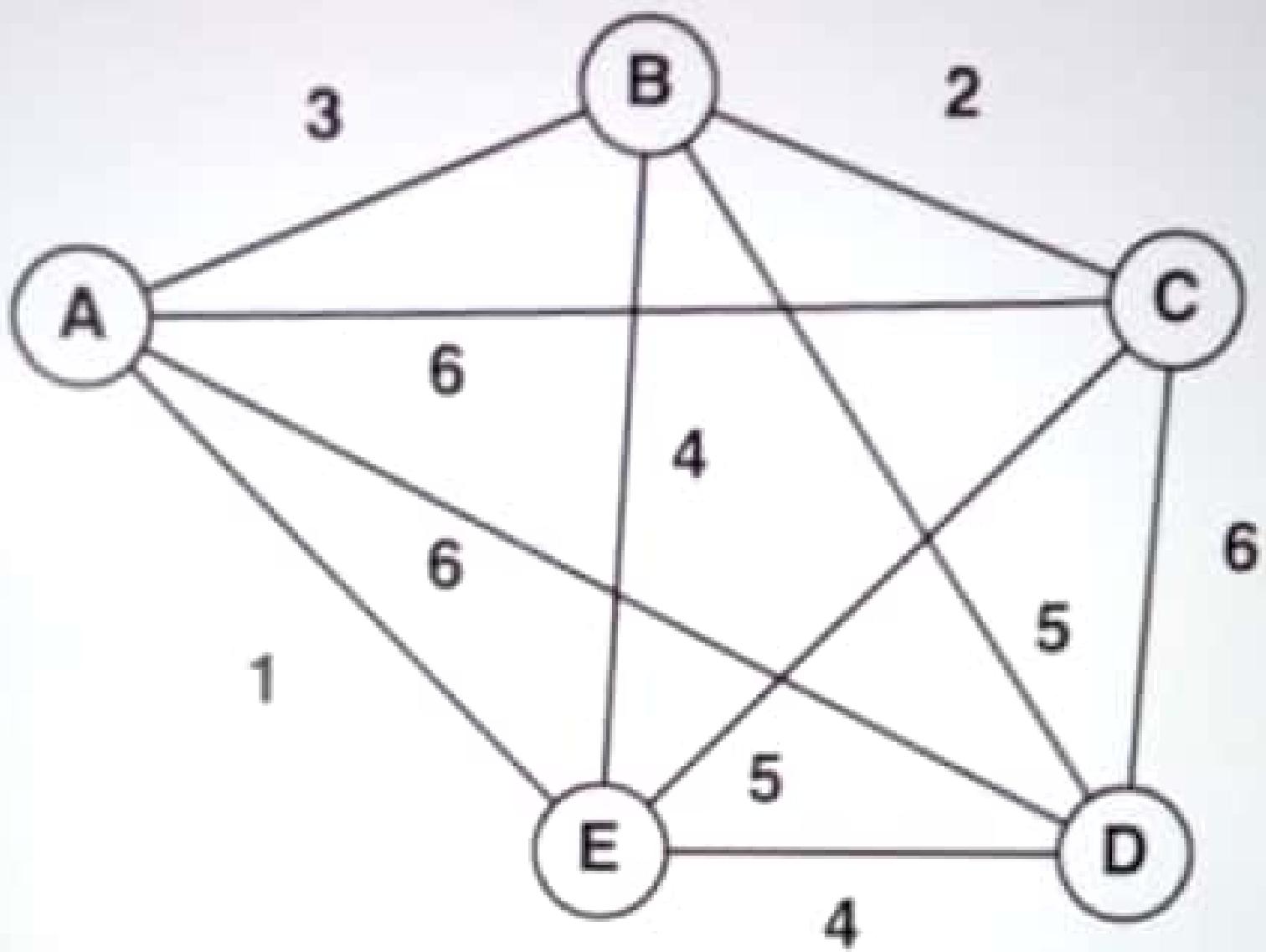
Number of Loops = : 1

Number of Edges = :

Number of Vertices = :



Consider the following graph.



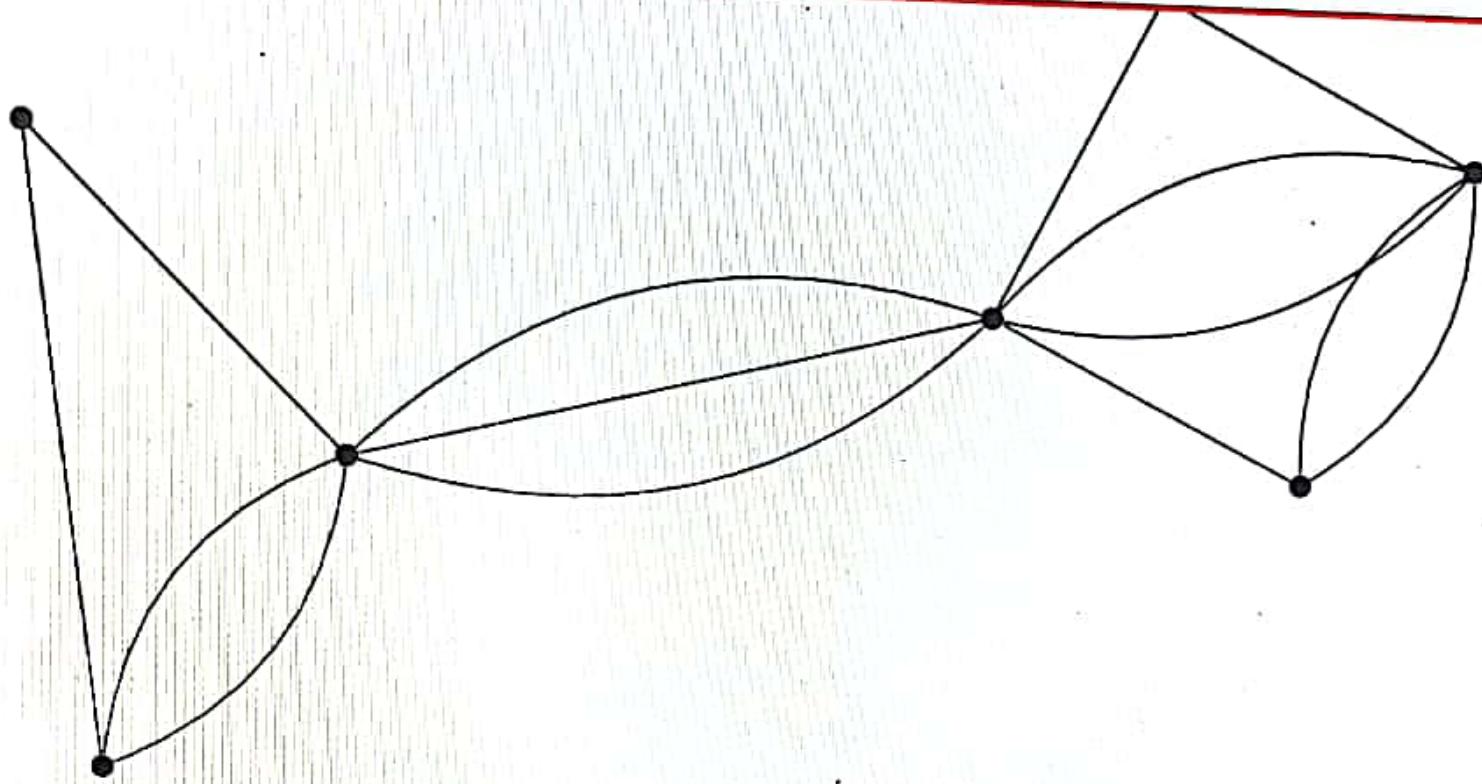
Determine whether the above graph has the following.

Hamiltonian Path: Yes

Hamiltonian Circuit: Yes

Euler Path: No

Euler Circuit: Yes



Determine whether the above graph has the followings.

Hamiltonian Path Yes ▾

Hamiltonian Circuit Yes ▾

Euler Path No ▾

Euler Circuit No ▾

DECLARATION

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EXAM QUESTIONS

1	2	3	4	5	6
8	9	10	11	12	13
15	16	17	18	19	20
22	23	24	25	26	27
I					

Finish attempt ...

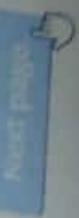
Time left 1:52:26

Select one:

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

Question 1
Not yet answered
Marked out of
0.00
Flag question

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

Next page

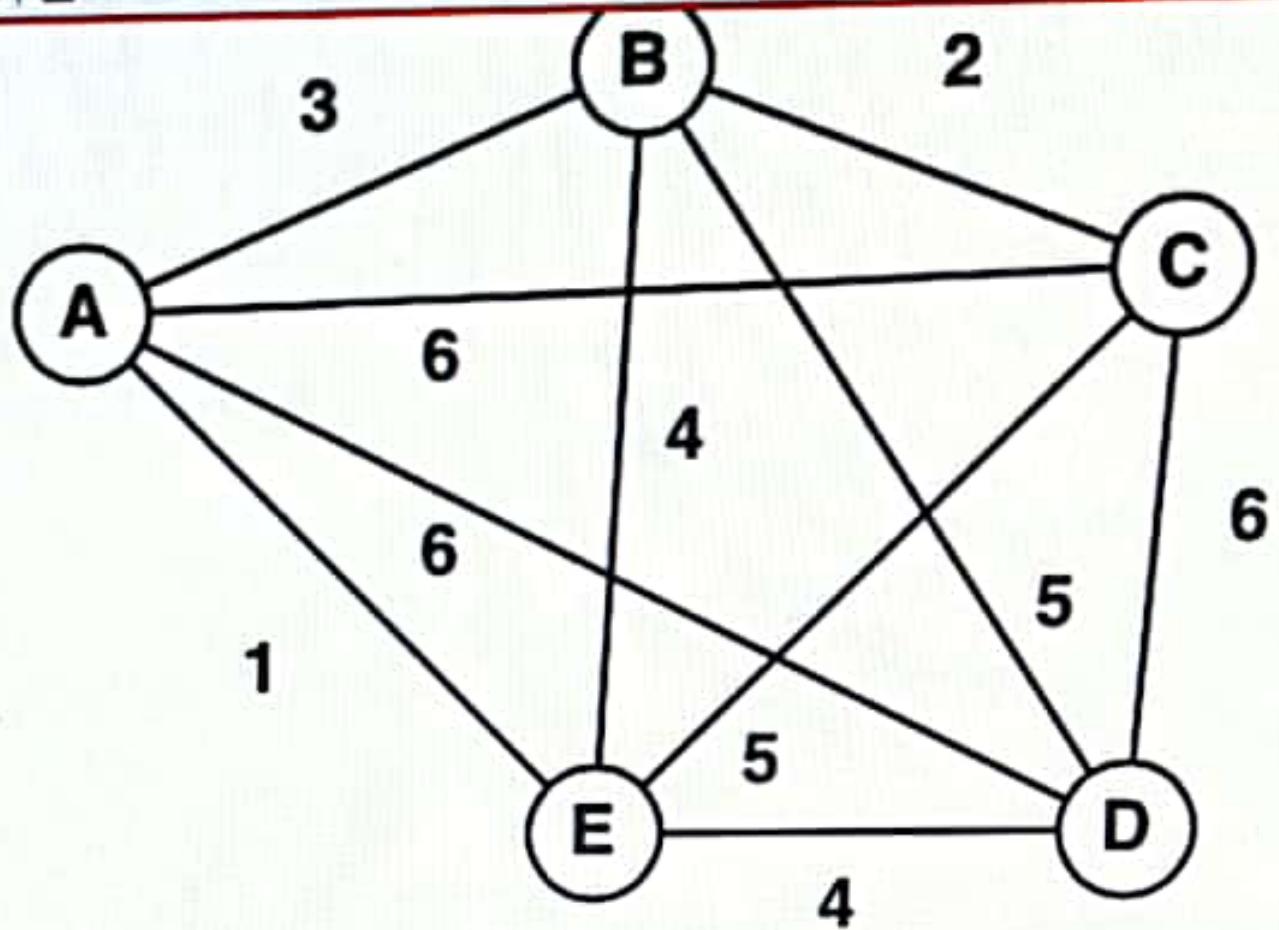
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Find the determinant of A.

$$A = \begin{bmatrix} 5 & 4 & 7 \\ 3 & -6 & 5 \\ 4 & 2 & -3 \end{bmatrix}$$

Answer: 186



Determine whether the above graph has the followings.

Hamiltonian Path: Yes

Hamiltonian Circuit: Yes

Euler Path: No

Euler Circuit: Yes



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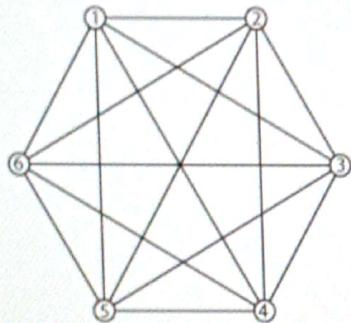
Sri Lanka Institute of Information Technology

Question 2

Not yet answered

Marked out of
4.00[Flag question](#)

Consider the following graph.



Determine whether the above graph has the followings.

Hamiltonian Path

Hamiltonian Circuit

Euler Path

Euler Circuit

Consider the following system of linear equations.

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

$$2x - 3y - z = 6$$

$$x - y - z = 2$$

Represent the above equations in $A\begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} b_1 \\ b_2 \\ b_3 \end{pmatrix}$ form.

Assume that you solve this using Cramer's Rule.

Then $y = \frac{|A_2|}{|A|}$

Answer for $|A_2|$

-5

Answer for $|A|$

5

Answer for y

-1

Consider the following system of linear equations.

$$2x + 4y = 22$$

$$3x - 2y = 1$$

Represent the above equations in $\underline{Ax} = \underline{b}$ form.

Find $|A|$.

Find the $\text{adj } A$

Let $\text{adj } A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$

Find x and y .

	Choose...
Answer for $ A $	-2
	2
Answer for a	9
	8
Answer for b	-16
	-4
Answer for c	-8
	3
Answer for d	-3
	-9
	4
	Choose...

Answer for x

**Question 11**

Not yet answered

Marked out of
4.00

Flag question

Following adjacency matrix represents an undirected graph.

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

Find the following.

Number of loops

Number of edges

Number of vertices

Total degree

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Consider the following degree sequence.

4, 3, 2, 1, 1, 1

Is it possible to draw a graph with the above degree sequence?

Choose... •

Yes •

Choose... •

Choose... •

6

18

12

24

No

Not Applicable

Yes

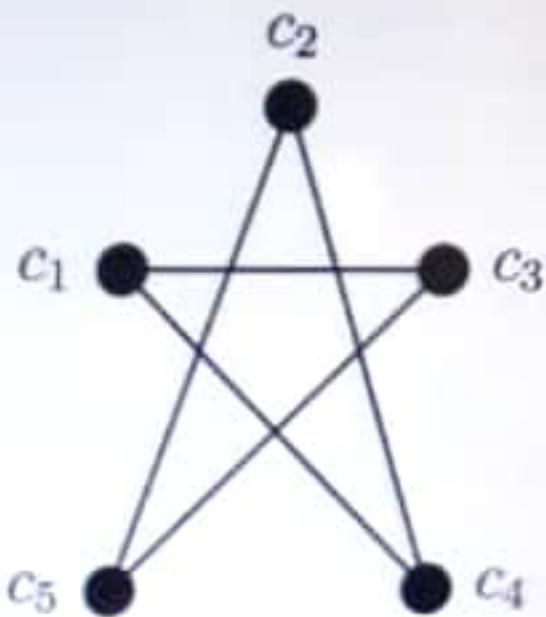
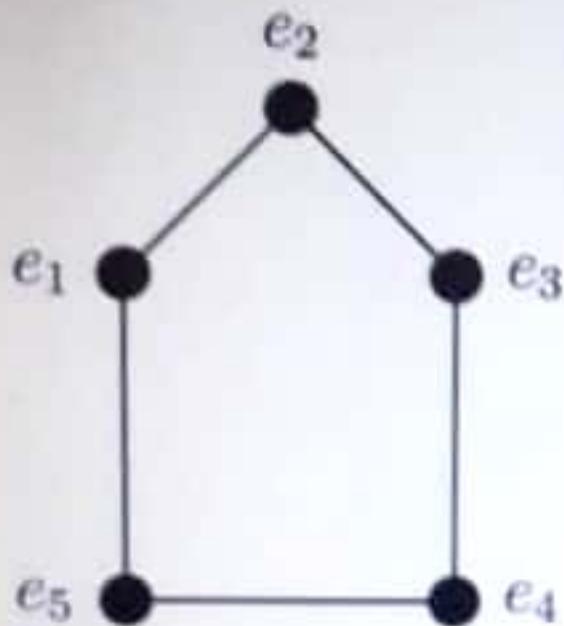
10

Does this graph have an Euler Path?

Does this graph have an Euler circuit?

How many edges are in the above graph?

What is the correct statement about the following 2 graphs.



Select one:

- Two graphs are isomorphic
- Two graphs are not isomorphic
- The two graphs have different degree sequences
- None of the above

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Simplify the following boolean expression.

$$F = A + \bar{A}B + \bar{A}\bar{B}\bar{C} + \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}\bar{C}\bar{D}\bar{E}$$

Select one:

- F = A + B + C + CDE
- F = A + B + C + DE
- F = A + B + C + D + E
- F = A + B + B(C + DE)
- None of the above



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ng question

How many different license plates can be made if each plate contains a sequence of three uppercase English letters followed by three digits (and no sequences of letters are prohibited, even if they are obscene)?

Answer: