

Core Mathematics and Applied Mathematics

Group Number :	7
Group Id :	22689510006
Group Maximum Duration :	60
Group Minimum Duration :	60
Show Attended Group? :	No

Edit Attended Group? :	No
Break time :	0
Group Marks :	250

Section A Common

Section Id :	22689516540
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	75
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	22689532981
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 306 Question Id : 226895791572 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A is any matrix, defined by $A = [a_{ij}]_{3 \times 3}$, where $a_{ij} = |i - j|$, then which of the following statements are true ?

- A. A is symmetric matrix.
- B. A is skew-symmetric matrix.
- C. A is diagonal matrix.
- D. A is non singular matrix.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. B and C only
- 3. A and D only
- 4. B and D only

Options :

- 2268953069709. 1
- 2268953069710. 2
- 2268953069711. 3
- 2268953069712. 4

Question Number : 306 Question Id : 226895791572 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A कोई आव्यूह है, जिसे $A = [a_{ij}]_{3 \times 3}$ द्वारा परिभाषित किया गया है, जहाँ $a_{ij} = |i - j|$, तो निम्नलिखित में से कौन से कथन सही हैं?

- A. A सममित आव्यूह है।
- B. A विषम-सममित आव्यूह है।
- C. A विकर्ण आव्यूह है।
- D. A व्युत्क्रमणीय आव्यूह है।

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और B
- 2. केवल B और C
- 3. केवल A और D
- 4. केवल B और D

Options :

- 2268953069709. 1
- 2268953069710. 2
- 2268953069711. 3
- 2268953069712. 4

Question Number : 307 Question Id : 226895791573 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $AB = A$ and $BA = B$, where A and B are square matrices of same order, then

- 1. $B^2 = B, A^2 = A$
- 2. $B^2 \neq B$ and $A^2 = A$
- 3. $A^2 \neq A, B^2 = B$
- 4. $A^2 \neq A, B^2 \neq B$

Options :

- 2268953069713. 1
- 2268953069714. 2
- 2268953069715. 3
- 2268953069716. 4

Question Number : 307 Question Id : 226895791573 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $AB = A$ और $BA = B$, जहाँ A और B समान कोटि के वर्ग आव्यूह हैं, तो

- 1. $B^2 = B, A^2 = A$
- 2. $B^2 \neq B$ और $A^2 = A$
- 3. $A^2 \neq A, B^2 = B$
- 4. $A^2 \neq A, B^2 \neq B$

Options :

- 2268953069713. 1
- 2268953069714. 2
- 2268953069715. 3
- 2268953069716. 4

Question Number : 308 Question Id : 226895791574 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\Delta = \begin{vmatrix} 1 & x & x^2 \\ x^2 & 1 & x \\ x & x^2 & 1 \end{vmatrix} = (1 + ax^3)^b$, then which of the following statements are TRUE?

- A. $a = -1$ and $b = 2$
- B. $x = 1$ is a multiple root of $\Delta = 0$
- C. $x = 1$ is a simple root of $\Delta = 0$
- D. $x = 3$ is a simple root of $\Delta = 0$

Choose the **correct** answer from the options given below:

- 1. A and D only
- 2. A and C only
- 3. A, B and D only
- 4. A and B only

Options :

- 2268953069717. 1
- 2268953069718. 2
- 2268953069719. 3
- 2268953069720. 4

Question Number : 308 Question Id : 226895791574 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $\Delta = \begin{vmatrix} 1 & x & x^2 \\ x^2 & 1 & x \\ x & x^2 & 1 \end{vmatrix} = (1 + ax^3)^b$ है, तो निम्नलिखित में से कौन से कथन सही हैं ?

- A. $a = -1$ और $b = 2$
- B. $x = 1, \Delta = 0$ का एक बहुल मूल है
- C. $x = 1, \Delta = 0$ का एक सरल मूल है
- D. $x = 3, \Delta = 0$ का एक सरल मूल है

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और D
- 2. केवल A और C
- 3. केवल A, B और D
- 4. केवल A और B

Options :

- 2268953069717. 1
- 2268953069718. 2
- 2268953069719. 3
- 2268953069720. 4

Question Number : 309 Question Id : 226895791575 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If A is a square matrix of order 3×3 , and $|\text{adj } A| = 25$, then the value of $|2A|$ is

1. 20
2. ± 20
3. 40
4. ± 40

Options :

2268953069721. 1
2268953069722. 2
2268953069723. 3
2268953069724. 4

Question Number : 309 Question Id : 226895791575 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि A कोटि 3×3 , का एक वर्ग आव्यूह है और $|\text{adj } A| = 25$, तो $|2A|$ का मान है

1. 20
2. ± 20
3. 40
4. ± 40

Options :

2268953069721. 1
2268953069722. 2
2268953069723. 3
2268953069724. 4

Question Number : 310 Question Id : 226895791576 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $y = \sqrt{\frac{1-x}{1+x}}$, then the value of $(1-x^2) \frac{dy}{dx} + y$ is

1. $\frac{1}{1+x}$
2. $\frac{-1}{(1+x)^2}$
3. 0
4. 1

Options :

2268953069725. 1
2268953069726. 2
2268953069727. 3
2268953069728. 4

Question Number : 310 Question Id : 226895791576 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $y = \sqrt{\frac{1-x}{1+x}}$ है, तो $(1-x^2) \frac{dy}{dx} + y$ का मान है

1. $\frac{1}{1+x}$
2. $\frac{-1}{(1+x)^2}$
3. 0
4. 1

Options :

2268953069725. 1
2268953069726. 2
2268953069727. 3
2268953069728. 4

Question Number : 311 Question Id : 226895791577 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The minimum value of $e^x + e^{-x}$ is

1. -1
2. 0
3. 1
4. 2

Options :

2268953069729. 1
2268953069730. 2
2268953069731. 3
2268953069732. 4

Question Number : 311 Question Id : 226895791577 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$e^x + e^{-x}$ का न्यूनतम मान है

1. -1
2. 0
3. 1
4. 2

Options :

2268953069729. 1
2268953069730. 2
2268953069731. 3
2268953069732. 4

Question Number : 312 Question Id : 226895791578 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The function $f(x) = \frac{x}{\log x}$ is increasing in the interval

(consider $\log_e x = \log x$)

1. $(1, \infty)$
2. (e, ∞)
3. $(-\infty, e)$
4. $(-\infty, -1)$

Options :

2268953069733. 1
2268953069734. 2
2268953069735. 3
2268953069736. 4

Question Number : 312 Question Id : 226895791578 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

फलन $f(x) = \frac{x}{\log x}$,जिस अंतराल में वर्धमान है, वह अंतराल है:

(जहाँ $\log_e x = \log x$)

1. $(1, \infty)$
2. (e, ∞)
3. $(-\infty, e)$
4. $(-\infty, -1)$

Options :

2268953069733. 1
2268953069734. 2
2268953069735. 3
2268953069736. 4

Question Number : 313 Question Id : 226895791579 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int e^x \left(\log x + \frac{1}{x^2} \right) dx$ is equal to

(consider $\log_e x = \log x$)

1. $e^x \log_e x + c$: where c is an arbitrary constant
2. $e^x \left(\log_e x + \frac{1}{x} \right) + c$: where c is an arbitrary constant
3. $e^x \left(\log_e x - \frac{1}{x} \right) + c$: where c is an arbitrary constant
4. $e^x \cdot \frac{1}{x} + c$: where c is an arbitrary constant

Options :

2268953069737. 1
2268953069738. 2
2268953069739. 3
2268953069740. 4

Question Number : 313 Question Id : 226895791579 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int e^x \left(\log x + \frac{1}{x^2} \right) dx$ बराबर है
(जहाँ $\log_e x = \log x$)

1. $e^x \log_e x + c$: जहाँ, c एक स्वेच्छ अचर है
2. $e^x \left(\log_e x + \frac{1}{x} \right) + c$: जहाँ, c एक स्वेच्छ अचर है
3. $e^x \left(\log_e x - \frac{1}{x} \right) + c$: जहाँ, c एक स्वेच्छ अचर है
4. $e^x \cdot \frac{1}{x} + c$: जहाँ, c एक स्वेच्छ अचर है

Options :

2268953069737. 1
2268953069738. 2
2268953069739. 3
2268953069740. 4

Question Number : 314 Question Id : 226895791580 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $2f(x) + f\left(\frac{1}{x}\right) = \frac{1}{x} - 5, x \neq 0$, then $\int_1^2 f(x) dx$ is equal to:
(consider $\log_e x = \log x$)

1. $\frac{1}{6}[\log 16 - 13]$
2. $\frac{1}{3}[\log 8 - 13]$
3. $\frac{1}{3}[\log 8 - 14]$
4. $[\log 16 - 14]$

Options :

2268953069741. 1
2268953069742. 2
2268953069743. 3
2268953069744. 4

Question Number : 314 Question Id : 226895791580 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $2f(x) + f\left(\frac{1}{x}\right) = \frac{1}{x} - 5, x \neq 0$, तो $\int_1^2 f(x) dx$ बराबर है:
(जहाँ $\log_e x = \log x$)

1. $\frac{1}{6}[\log 16 - 13]$
2. $\frac{1}{3}[\log 8 - 13]$
3. $\frac{1}{3}[\log 8 - 14]$
4. $[\log 16 - 14]$

Options :

- 2268953069741. 1
- 2268953069742. 2
- 2268953069743. 3
- 2268953069744. 4

Question Number : 315 Question Id : 226895791581 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Area of the region bounded by the lines $|x| + |y| = 1, x \geq 0, y \geq 0$ is

- 1. 1 square units
- 2. $\frac{1}{2}$ square units
- 3. 2 square units
- 4. 4 square units

Options :

- 2268953069745. 1
- 2268953069746. 2
- 2268953069747. 3
- 2268953069748. 4

Question Number : 315 Question Id : 226895791581 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

रेखाओं $|x| + |y| = 1, x \geq 0, y \geq 0$ से घिरे क्षेत्र का क्षेत्रफल है

- 1. 1 वर्ग इकाइयाँ
- 2. $\frac{1}{2}$ वर्ग इकाइयाँ
- 3. 2 वर्ग इकाइयाँ
- 4. 4 वर्ग इकाइयाँ

Options :

- 2268953069745. 1
- 2268953069746. 2
- 2268953069747. 3
- 2268953069748. 4

Question Number : 316 Question Id : 226895791582 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The order and degree of the differential equation $\sqrt{1 + \left(\frac{dy}{dx}\right)^2} = \left(\frac{d^2y}{dx^2}\right)^{\frac{1}{3}}$ are

- 1. order = 2, degree = 2
- 2. order = 2, degree = $\frac{1}{3}$
- 3. order = 3, degree is not defined
- 4. order = 2, degree = 3

Options :

- 2268953069749. 1
- 2268953069750. 2
- 2268953069751. 3

Question Number : 316 Question Id : 226895791582 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

अवकल समीकरण $\sqrt{1 + \left(\frac{dy}{dx}\right)^2} = \left(\frac{d^2y}{dx^2}\right)^{\frac{1}{3}}$ की कोटि और घात है

1. कोटि = 2, घात = 2
2. कोटि = 2, घात = $\frac{1}{3}$
3. कोटि = 3, घात परिभाषित नहीं है
4. कोटि = 2, घात = 3

Options :

2268953069749. 1
2268953069750. 2
2268953069751. 3
2268953069752. 4

Question Number : 317 Question Id : 226895791583 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of the differential equation $\frac{dy}{dx} = \frac{x}{y}$ represents a family of

1. circles
2. ellipses
3. parabolas
4. hyperbolas

Options :

2268953069753. 1
2268953069754. 2
2268953069755. 3
2268953069756. 4

Question Number : 317 Question Id : 226895791583 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

अवकल समीकरण $\frac{dy}{dx} = \frac{x}{y}$ का हल दर्शाता है एक कुल

1. वृत्तों का
2. दीर्घवृत्तों का
3. परवलयों का
4. अतिपरवलयों का

Options :

2268953069753. 1
2268953069754. 2
2268953069755. 3
2268953069756. 4

Question Number : 318 Question Id : 226895791584 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The solution of initial value problem: $\frac{dy}{dx} = e^{3x+4y}; y(0) = -\frac{1}{4}$ is

1. $e^{-4y} + e^{3x} = 3e$
2. $3e^{-4y} + 4e^{3x} = 3e + 4$
3. $-4e^{-4y} + 3e^{3x} = 3e + 4$
4. $e^{-4y} - 3e^{3x} = 0$

Options :

2268953069757. 1
2268953069758. 2
2268953069759. 3
2268953069760. 4

Question Number : 318 Question Id : 226895791584 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

प्रारंभिक मान समस्या $\frac{dy}{dx} = e^{3x+4y}; y(0) = -\frac{1}{4}$ का हल है

1. $e^{-4y} + e^{3x} = 3e$
2. $3e^{-4y} + 4e^{3x} = 3e + 4$
3. $-4e^{-4y} + 3e^{3x} = 3e + 4$
4. $e^{-4y} - 3e^{3x} = 0$

Options :

2268953069757. 1
2268953069758. 2
2268953069759. 3
2268953069760. 4

Question Number : 319 Question Id : 226895791585 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Three coins are tossed, then

Match the **LIST-I** with **LIST-II**

LIST-I		LIST-II	
A.	Probability of occurrence of 3 heads or 3 tails	I.	$\frac{1}{8}$
B.	Probability of occurrence of at least two heads	II.	$\frac{7}{8}$
C.	Probability of occurrence of at most two heads	III.	$\frac{1}{2}$
D.	Probability of occurrence of no head	IV.	$\frac{1}{4}$

Choose the **correct** answer from the options given below:

1. A-I, B-II, C-III, D-IV
2. A-IV, B-III, C-I, D-II
3. A-III, B-IV, C-II, D-I
4. A-IV, B-III, C-II, D-I

Options :

2268953069761. 1
2268953069762. 2
2268953069763. 3
2268953069764. 4

Question Number : 319 Question Id : 226895791585 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

तीन सिक्के उछाले जाते हैं, तो

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	3 चित या 3 पट प्रकट होने की प्रायिकता	I.	$\frac{1}{8}$
B.	कम से कम दो चित प्रकट होने की प्रायिकता	II.	$\frac{7}{8}$
C.	अधिक से अधिक दो चित प्रकट होने की प्रायिकता	III.	$\frac{1}{2}$
D.	कोई चित प्रकट न होने की प्रायिकता	IV.	$\frac{1}{4}$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-I, B-II, C-III, D-IV
2. A-IV, B-III, C-I, D-II
3. A-III, B-IV, C-II, D-I
4. A-IV, B-III, C-II, D-I

Options :

2268953069761. 1
2268953069762. 2

2268953069763. 3

2268953069764. 4

Question Number : 320 Question Id : 226895791586 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

LIST-I		LIST-II	
Inequality		Solution Space	
A.	$2x + 3y \geq 6$	I.	half plane contains the origin, also points on the line $2x + 3y = 6$
B.	$2x + 3y \leq 6$	II.	half plane contains the origin but not points on the line $2x + 3y = 6$
C.	$2x + 3y > 6$	III.	half plane not contains the origin but contains points on the line $2x + 3y = 6$
D.	$2x + 3y < 6$	IV.	half plane neither contains the origin nor contains points on the line $2x + 3y = 6$

Choose the **correct** answer from the options given below:

1. A-II, B-III, C-I, D-IV
2. A-III, B-II, C-I, D-IV
3. A-III, B-I, C-IV, D-II
4. A-II, B-IV, C-I, D-III

Options :

2268953069765. 1

2268953069766. 2

2268953069767. 3

2268953069768. 4

Question Number : 320 Question Id : 226895791586 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I असमिका		सूची-II हल समष्टि	
A.	$2x + 3y \geq 6$	I.	रेखा $2x + 3y = 6$ पर स्थित बिंदुओं तथा मूलबिंदु सहित अर्धतल
B.	$2x + 3y \leq 6$	II.	मूलबिंदु सहित परन्तु रेखा $2x + 3y = 6$ पर स्थित बिंदुओं के बिना अर्धतल
C.	$2x + 3y > 6$	III.	रेखा $2x + 3y = 6$ पर स्थित बिंदुओं सहित परन्तु मूलबिंदु के बिना अर्धतल
D.	$2x + 3y < 6$	IV.	न तो मूलबिंदु और न ही रेखा $2x + 3y = 6$ पर स्थित बिंदुओं सहित अर्धतल

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-II, B-III, C-I, D-IV
2. A-III, B-II, C-I, D-IV
3. A-III, B-I, C-IV, D-II
4. A-II, B-IV, C-I, D-III

Options :

2268953069765. 1
2268953069766. 2
2268953069767. 3
2268953069768. 4

Section B1: Mathematics

Section Id :	22689516541
Section Number :	2
Section type :	Online
Mandatory or Optional :	Optional
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	175
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	22689532982
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 321 Question Id : 226895791587 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Relation R in the set $A = \{1, 2, 3, 4, \dots, 16\}$ defined as $R = \{(x, y) : 3x = y, x, y \in A\}$, then which of the following are correct ?

- A. domain of $R = \{1, 2, 3, 4, 5\}$.
- B. range of $R = \{3, 6, 9, 12, 15\}$.
- C. R is reflexive.
- D. R is not symmetric.

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. B and D only
- 3. A, B and C only
- 4. A, B and D only

Options :

- 2268953069769. 1
- 2268953069770. 2
- 2268953069771. 3
- 2268953069772. 4

Question Number : 321 Question Id : 226895791587 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

समुच्चय $A = \{1, 2, 3, 4, \dots, 16\}$ में संबंध R , इस प्रकार परिभाषित है कि $R = \{(x, y) : 3x = y, x, y \in A\}$ तो निम्नलिखित में से कौन से कथन सही है?

- A. R का प्रांत $= \{1, 2, 3, 4, 5\}$
- B. R का परिसर $= \{3, 6, 9, 12, 15\}$
- C. R स्वतुल्य है
- D. R सममित नहीं है

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. A और B केवल
- 2. B और D केवल
- 3. A, B और C केवल
- 4. A, B और D केवल

Options :

- 2268953069769. 1
- 2268953069770. 2
- 2268953069771. 3
- 2268953069772. 4

Question Number : 322 Question Id : 226895791588 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A function $f: N \rightarrow N$, (N : set of natural numbers) defined by $f(x) = x^2 + x + 1$ is

- 1. one-one and onto
- 2. one-one but not onto
- 3. many-one and onto
- 4. many-one but not onto

Options :

- 2268953069773. 1
- 2268953069774. 2
- 2268953069775. 3
- 2268953069776. 4

Question Number : 322 Question Id : 226895791588 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$f(x) = x^2 + x + 1$ द्वारा परिभाषित एक फलन $f: N \rightarrow N$, (N : प्राकृतिक संख्याओं का समुच्चय) है।

- 1. एकैकी और आच्छादक
- 2. एकैकी किंतु आच्छादक नहीं
- 3. बहुएक और आच्छादक
- 4. बहुएक किंतु आच्छादक नहीं

Options :

- 2268953069773. 1
- 2268953069774. 2
- 2268953069775. 3
- 2268953069776. 4

Question Number : 323 Question Id : 226895791589 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I Function		LIST-II Range (Principal value)	
A.	$\tan^{-1} x$	I.	$[0, \pi] - \left\{ \frac{\pi}{2} \right\}$
B.	$\sec^{-1} x$	II.	$\left[-\frac{\pi}{2}, \frac{\pi}{2} \right]$
C.	$\operatorname{cosec}^{-1} x$	III.	$\left[-\frac{\pi}{2}, \frac{\pi}{2} \right] - \{0\}$
D.	$\sin^{-1} x$	IV.	$\left(-\frac{\pi}{2}, \frac{\pi}{2} \right)$

Choose the **correct** answer from the options given below:

- 1. A-IV, B-I, C-III, D-II
- 2. A-II, B-III, C-I, D-IV
- 3. A-IV, B-III, C-I, D-II
- 4. A-II, B-IV, C-III, D-I

Options :

- 2268953069777. 1
- 2268953069778. 2
- 2268953069779. 3
- 2268953069780. 4

Question Number : 323 Question Id : 226895791589 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I फलन		सूची-II परिसर (मुख्य मान)	
A.	$\tan^{-1} x$	I.	$[0, \pi] - \left\{ \frac{\pi}{2} \right\}$
B.	$\sec^{-1} x$	II.	$\left[-\frac{\pi}{2}, \frac{\pi}{2} \right]$
C.	$\operatorname{cosec}^{-1} x$	III.	$\left[-\frac{\pi}{2}, \frac{\pi}{2} \right] - \{0\}$
D.	$\sin^{-1} x$	IV.	$\left(-\frac{\pi}{2}, \frac{\pi}{2} \right)$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-IV, B-I, C-III, D-II
2. A-II, B-III, C-I, D-IV
3. A-IV, B-III, C-I, D-II
4. A-II, B-IV, C-III, D-I

Options :

2268953069777. 1
2268953069778. 2
2268953069779. 3
2268953069780. 4

Question Number : 324 Question Id : 226895791590 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If A is square matrix such that $A^2 = A$, then $(2I + A)^4 - 65A$ is equal to (Where I is identity matrix)

1. $8I$
2. $16I$
3. $16I + A$
4. $8I + A$

Options :

2268953069781. 1
2268953069782. 2
2268953069783. 3
2268953069784. 4

Question Number : 324 Question Id : 226895791590 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि A वर्ग आव्यूह इस प्रकार है कि $A^2 = A$, तो $(2I + A)^4 - 65A$ बराबर है (जहाँ I तत्समक आव्यूह है)

1. $8I$
2. $16I$
3. $16I + A$
4. $8I + A$

Options :

2268953069781. 1
2268953069782. 2
2268953069783. 3
2268953069784. 4

Question Number : 325 Question Id : 226895791591 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, such that $A^2 - 4A + \lambda I = 0$, where I is identity matrix of order 2, then ' λ ' is equal to

1. -1
2. 1
3. -2
4. 2

Options :

2268953069785. 1
2268953069786. 2
2268953069787. 3
2268953069788. 4

Question Number : 325 Question Id : 226895791591 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}$, इस प्रकार है कि $A^2 - 4A + \lambda I = 0$, जहाँ I कोटि 2 का तत्समक आव्यूह है तो ' λ ' बराबर है

1. -1
2. 1
3. -2
4. 2

Options :

2268953069785. 1
2268953069786. 2
2268953069787. 3
2268953069788. 4

Question Number : 326 Question Id : 226895791592 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A = [a_{ij}]_{3 \times 3}$, $a_{ij} = \begin{cases} 0, & i \neq j \\ i + j, & i = j \end{cases}$, then which of the following statements are correct ?

- A. A is scalar matrix
- B. A is diagonal matrix
- C. A is unit matrix
- D. A is symmetric matrix

Choose the **correct** answer from the options given below:

- 1. B and C only
- 2. A, B and C only
- 3. B and D only
- 4. C and D only

Options :

- 2268953069789. 1
- 2268953069790. 2
- 2268953069791. 3
- 2268953069792. 4

Question Number : 326 Question Id : 226895791592 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $A = [a_{ij}]_{3 \times 3}$, $a_{ij} = \begin{cases} 0, & i \neq j \\ i + j, & i = j \end{cases}$ तो निम्नलिखित में से कौन सा कथन सही है?

- A. A अदिश आव्यूह है
- B. A विकर्ण आव्यूह है
- C. A तत्समक आव्यूह है
- D. A सममित आव्यूह है

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल B और C
- 2. केवल A, B और C
- 3. केवल B और D
- 4. केवल C और D

Options :

- 2268953069789. 1
- 2268953069790. 2
- 2268953069791. 3
- 2268953069792. 4

Question Number : 327 Question Id : 226895791593 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A(x_1, y_1)$, $B(x_2, y_2)$ and $C(x_3, y_3)$ are the vertices of an equilateral triangle

whose each side is equal to k , then the value of $\begin{vmatrix} x_1 & y_1 & 2 \\ x_2 & y_2 & 2 \\ x_3 & y_3 & 2 \end{vmatrix}^2$ is

1. $3k^2$
2. $4k^2$
3. $3k^4$
4. $4k^4$

Options :

2268953069793. 1
2268953069794. 2
2268953069795. 3
2268953069796. 4

Question Number : 327 Question Id : 226895791593 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $A(x_1, y_1)$, $B(x_2, y_2)$ और $C(x_3, y_3)$ एक समबाहु त्रिभुज के शीर्ष हैं जिसकी

प्रत्येक भुजा k के बराबर है, तो $\begin{vmatrix} x_1 & y_1 & 2 \\ x_2 & y_2 & 2 \\ x_3 & y_3 & 2 \end{vmatrix}^2$ का मान है

1. $3k^2$
2. $4k^2$
3. $3k^4$
4. $4k^4$

Options :

2268953069793. 1
2268953069794. 2
2268953069795. 3
2268953069796. 4

Question Number : 328 Question Id : 226895791594 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If x, y, z are all different from zero and $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = 0$, then the value of $x^{-1} + y^{-1} + z^{-1}$ is

1. xyz
2. -1
3. 1
4. 0

Options :

2268953069797. 1
2268953069798. 2
2268953069799. 3
2268953069800. 4

Question Number : 328 Question Id : 226895791594 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि x, y, z शून्येतर हैं तथा $\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = 0$, तो $x^{-1} + y^{-1} + z^{-1}$ का मान है :

1. xyz
2. -1
3. 1
4. 0

Options :

2268953069797. 1
2268953069798. 2
2268953069799. 3
2268953069800. 4

Question Number : 329 Question Id : 226895791595 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $A = \begin{bmatrix} 1 & 0 & 0 \\ 3 & 3 & 0 \\ 5 & 2 & -1 \end{bmatrix}$, then

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	$ \text{adj } A $	I.	81
B.	$ A $	II.	-27
C.	$ A \text{ adj } A $	III.	9
D.	$ \text{adj } (\text{adj } A) $	IV.	-3

Choose the **correct** answer from the options given below:

1. A-II, B-III, C-IV, D-I
2. A-I, B-IV, C-II, D-III
3. A-IV, B-III, C-II, D-I
4. A-III, B-IV, C-II, D-I

Options :

2268953069801. 1
2268953069802. 2
2268953069803. 3
2268953069804. 4

Question Number : 329 Question Id : 226895791595 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $A = \begin{bmatrix} 1 & 0 & 0 \\ 3 & 3 & 0 \\ 5 & 2 & -1 \end{bmatrix}$, तो

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	$ \text{adj } A $	I.	81
B.	$ A $	II.	-27
C.	$ A \text{ adj } A $	III.	9
D.	$ \text{adj}(\text{adj } A) $	IV.	-3

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-II, B-III, C-IV, D-I
2. A-I, B-IV, C-II, D-III
3. A-IV, B-III, C-II, D-I
4. A-III, B-IV, C-II, D-I

Options :

2268953069801. 1
 2268953069802. 2
 2268953069803. 3
 2268953069804. 4

Question Number : 330 Question Id : 226895791596 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Function $f(x) = \begin{cases} k(x^2 - 6x + 13) & : x < 1 \\ |x-3| & : x \geq 1 \end{cases}$ is differentiable at $x = 1$, then the value of k is

1. 4
2. $\frac{1}{4}$
3. $-\frac{1}{4}$
4. -4

Options :

2268953069805. 1
 2268953069806. 2
 2268953069807. 3
 2268953069808. 4

Question Number : 330 Question Id : 226895791596 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

फलन $f(x) = \begin{cases} k(x^2 - 6x + 13) & : x < 1 \\ |x - 3| & : x \geq 1 \end{cases}$, $x = 1$ पर अवकलनीय है, तो k का मान है

1. 4
2. $\frac{1}{4}$
3. $-\frac{1}{4}$
4. -4

Options :

2268953069805. 1
 2268953069806. 2
 2268953069807. 3
 2268953069808. 4

Question Number : 331 Question Id : 226895791597 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $y = x^x, x > 0$ then $y''(2) - 2y'(2)$ is equal to

1. $8\log_e 2 - 2$
2. $4(\log_e 2)^2 + 2$
3. $4(\log_e 2)^2 - 2$
4. $4(\log_e 2) + 2$

Options :

2268953069809. 1
 2268953069810. 2
 2268953069811. 3
 2268953069812. 4

Question Number : 331 Question Id : 226895791597 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $y = x^x, x > 0$ है तो $y''(2) - 2y'(2)$ बराबर है

1. $8\log_e 2 - 2$
2. $4(\log_e 2)^2 + 2$
3. $4(\log_e 2)^2 - 2$
4. $4(\log_e 2) + 2$

Options :

2268953069809. 1
 2268953069810. 2
 2268953069811. 3
 2268953069812. 4

Question Number : 332 Question Id : 226895791598 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $x = \sec \theta + \cos \theta$, $y = \sec^n \theta + \cos^n \theta$, then $\frac{dy}{dx}$ is equal to

1. $\frac{n^2(y^2 + 4)}{x^2 + 4}$
2. $\frac{n^2(y^2 - 4)}{x^2 - 4}$
3. $n \left(\sqrt{\frac{y^2 + 4}{x^2 + 4}} \right)$
4. $n \left(\sqrt{\frac{y^2 - 4}{x^2 - 4}} \right)$

Options :

2268953069813. 1
2268953069814. 2
2268953069815. 3
2268953069816. 4

Question Number : 332 Question Id : 226895791598 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $x = \sec \theta + \cos \theta$, $y = \sec^n \theta + \cos^n \theta$, तो $\frac{dy}{dx}$ बराबर है

1. $\frac{n^2(y^2 + 4)}{x^2 + 4}$
2. $\frac{n^2(y^2 - 4)}{x^2 - 4}$
3. $n \left(\sqrt{\frac{y^2 + 4}{x^2 + 4}} \right)$
4. $n \left(\sqrt{\frac{y^2 - 4}{x^2 - 4}} \right)$

Options :

2268953069813. 1
2268953069814. 2
2268953069815. 3
2268953069816. 4

Question Number : 333 Question Id : 226895791599 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $f(x) = (x - a)^2 + (x - b)^2 + (x - c)^2$, then $f(x)$ has minimum at x equal to:

1. $3\sqrt{abc}$
2. $3abc$
3. $\frac{a+b+c}{3}$
4. $\frac{3}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}}$

Options :

- 2268953069817. 1
- 2268953069818. 2
- 2268953069819. 3
- 2268953069820. 4

Question Number : 333 Question Id : 226895791599 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $f(x) = (x-a)^2 + (x-b)^2 + (x-c)^2$ तो $f(x)$ का न्यूनतम मान x के किस मान पर है?

- 1. $3\sqrt{abc}$
- 2. $3abc$
- 3. $\frac{a+b+c}{3}$
- 4. $\frac{3}{\frac{1}{a} + \frac{1}{b} + \frac{1}{c}}$

Options :

- 2268953069817. 1
- 2268953069818. 2
- 2268953069819. 3
- 2268953069820. 4

Question Number : 334 Question Id : 226895791600 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For the Function $f(x) = \tan x - 4x, x \in \left(0, \frac{\pi}{2}\right)$, which of the following statements are correct?

- A. $f(x)$ is increasing in $\left(0, \frac{\pi}{3}\right)$
- B. $f(x)$ is increasing in $\left(\frac{\pi}{3}, \frac{\pi}{2}\right)$
- C. $f(x)$ is decreasing in $\left(0, \frac{\pi}{3}\right)$
- D. $f(x)$ is decreasing in $\left(\frac{\pi}{3}, \frac{\pi}{2}\right)$

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. A and D only
- 3. B and C only
- 4. B and D only

Options :

- 2268953069821. 1
- 2268953069822. 2
- 2268953069823. 3
- 2268953069824. 4

Question Number : 334 Question Id : 226895791600 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

फलन $f(x) = \tan x - 4x, x \in \left(0, \frac{\pi}{2}\right)$ के लिए, निम्नलिखित में से कौन सा कथन सही है?

- A. $f(x), \left(0, \frac{\pi}{3}\right)$ में वर्धमान है।
- B. $f(x), \left(\frac{\pi}{3}, \frac{\pi}{2}\right)$ में वर्धमान है।
- C. $f(x), \left(0, \frac{\pi}{3}\right)$ में ह्रासमान है।
- D. $f(x), \left(\frac{\pi}{3}, \frac{\pi}{2}\right)$ में ह्रासमान है।

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और B
- 2. केवल A और D
- 3. केवल B और C
- 4. केवल B और D

Options :

- 2268953069821. 1
- 2268953069822. 2
- 2268953069823. 3
- 2268953069824. 4

Question Number : 335 Question Id : 226895791601 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The difference between the greatest and least values of the function

$f(x) = \sin 2x - x$ on $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ is

- 1. $\frac{\pi}{2}$
- 2. $\frac{-\sqrt{3}}{2} + \frac{\pi}{6}$
- 3. π
- 4. $\frac{\sqrt{3}}{2} - \frac{\pi}{6}$

Options :

- 2268953069825. 1
- 2268953069826. 2
- 2268953069827. 3
- 2268953069828. 4

Question Number : 335 Question Id : 226895791601 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

अन्तराल $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ में फलन $f(x) = \sin 2x - x$ के उच्चतम और निम्नतम मानों का अंतर है

1. $\frac{\pi}{2}$
2. $\frac{-\sqrt{3}}{2} + \frac{\pi}{6}$
3. π
4. $\frac{\sqrt{3}}{2} - \frac{\pi}{6}$

Options :

2268953069825. 1
 2268953069826. 2
 2268953069827. 3
 2268953069828. 4

Question Number : 336 Question Id : 226895791602 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I Indefinite Integral		LIST-II Solution (where c is an arbitrary constant)	
A.	$\int \sqrt{16-x^2} dx$	I.	$\sin^{-1}\left(\frac{x}{4}\right) + c$
B.	$\int \frac{dx}{\sqrt{16-x^2}}$	II.	$\frac{x}{2}\sqrt{16-x^2} + 8 \sin^{-1}\left(\frac{x}{4}\right) + c$
C.	$\int \frac{dx}{\sqrt{x^2-16}}$	III.	$\frac{1}{8} \log \left \frac{4+x}{4-x} \right + c$
D.	$\int \frac{dx}{16-x^2}$	IV.	$\log \left x + \sqrt{x^2-16} \right + c$

Choose the **correct** answer from the options given below:

1. A-I, B-IV, C-III, D-II
2. A-II, B-I, C-III, D-IV
3. A-IV, B-II, C-III, D-I
4. A-II, B-I, C-IV, D-III

Options :

2268953069829. 1
 2268953069830. 2
 2268953069831. 3
 2268953069832. 4

Question Number : 336 Question Id : 226895791602 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
अनिश्चित समाकलन		हल (जहाँ c एक स्वेच्छ अचर है)	
A.	$\int \sqrt{16-x^2} dx$	I.	$\sin^{-1}\left(\frac{x}{4}\right) + c$
B.	$\int \frac{dx}{\sqrt{16-x^2}}$	II.	$\frac{x}{2}\sqrt{16-x^2} + 8 \sin^{-1}\left(\frac{x}{4}\right) + c$
C.	$\int \frac{dx}{\sqrt{x^2-16}}$	III.	$\frac{1}{8} \log \left \frac{4+x}{4-x} \right + c$
D.	$\int \frac{dx}{16-x^2}$	IV.	$\log \left x + \sqrt{x^2-16} \right + c$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-I, B-IV, C-III, D-II
2. A-II, B-I, C-III, D-IV
3. A-IV, B-II, C-III, D-I
4. A-II, B-I, C-IV, D-III

Options :

2268953069829. 1
 2268953069830. 2
 2268953069831. 3
 2268953069832. 4

Question Number : 337 Question Id : 226895791603 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{\cos x}{1+e^x} dx =$$

1. 0
2. 1
3. -1
4. 2

Options :

2268953069833. 1
 2268953069834. 2
 2268953069835. 3
 2268953069836. 4

Question Number : 337 Question Id : 226895791603 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$$\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{\cos x}{1+e^x} dx =$$

1. 0
2. 1
3. -1
4. 2

Options :

2268953069833. 1
 2268953069834. 2
 2268953069835. 3
 2268953069836. 4

Question Number : 338 Question Id : 226895791604 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$$\int \frac{dx}{(x+1)\sqrt{x^2-1}} \text{ is equal to:}$$

[c is an arbitrary constant]

1. $\sqrt{\frac{x+1}{x-1}} + c$
2. $\sqrt{\frac{x}{x-1}} + c$
3. $\sqrt{\frac{x-1}{x+1}} + c$
4. $\sqrt{\frac{x}{x+1}} + c$

Options :

2268953069837. 1
 2268953069838. 2
 2268953069839. 3
 2268953069840. 4

Question Number : 338 Question Id : 226895791604 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int \frac{dx}{(x+1)\sqrt{x^2-1}}$ बराबर है:

[जहाँ c एक स्वेच्छ अचर है]

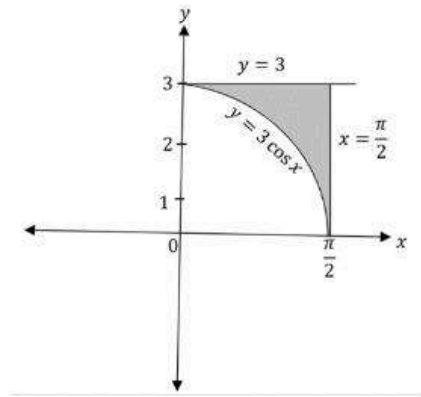
1. $\sqrt{\frac{x+1}{x-1}} + c$
2. $\sqrt{\frac{x}{x-1}} + c$
3. $\sqrt{\frac{x-1}{x+1}} + c$
4. $\sqrt{\frac{x}{x+1}} + c$

Options :

2268953069837. 1
 2268953069838. 2
 2268953069839. 3
 2268953069840. 4

Question Number : 339 Question Id : 226895791605 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the given figure, area of the shaded portion is equal to



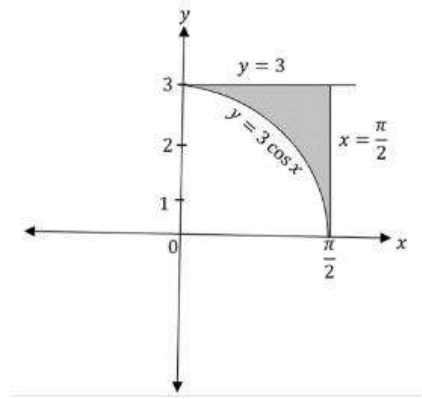
1. 3
2. $\frac{3\pi}{2}$
3. $3\left(\frac{\pi}{2} - 1\right)$
4. $3(\pi - 1)$

Options :

2268953069841. 1
 2268953069842. 2
 2268953069843. 3
 2268953069844. 4

Question Number : 339 Question Id : 226895791605 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

दी गई आकृति में, छायांकित क्षेत्र का क्षेत्रफल है



1. 3
2. $\frac{3\pi}{2}$
3. $3\left(\frac{\pi}{2} - 1\right)$
4. $3(\pi - 1)$

Options :

2268953069841. 1
 2268953069842. 2
 2268953069843. 3
 2268953069844. 4

Question Number : 340 Question Id : 226895791606 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The area of the region bounded by the line $y = 3x + 2$, the x -axis and the ordinates $x = -1$ and $x = 1$ is:

1. $\frac{25}{6}$
2. 4
3. 0
4. $\frac{13}{3}$

Options :

2268953069845. 1
 2268953069846. 2
 2268953069847. 3
 2268953069848. 4

Question Number : 340 Question Id : 226895791606 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

रेखा $y = 3x + 2$, x -अक्ष एवं कोटियों $x = -1$ एवं $x = 1$ से घिरे क्षेत्र का क्षेत्रफल है:

1. $\frac{25}{6}$
2. 4
3. 0
4. $\frac{13}{3}$

Options :

2268953069845. 1
 2268953069846. 2
 2268953069847. 3
 2268953069848. 4

Question Number : 341 Question Id : 226895791607 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I Differential Equations		LIST-II Solutions[c is an arbitrary constant]	
A.	$x \, dy = y \, dx$	I.	$y = e^x + c$
B.	$\log\left(\frac{dy}{dx}\right) = x$	II.	$y = c \, e^x$
C.	$\frac{y \, dx - dy}{y} = 0$	III.	$xy = c$
D.	$x \, dy + y \, dx = 0$	IV.	$y = cx$

Choose the **correct** answer from the options given below:

1. A-IV, B-II, C-I, D-III
2. A-IV, B-I, C-II, D-III
3. A-III, B-II, C-I, D-IV
4. A-III, B-I, C-II, D-IV

Options :

2268953069849. 1
 2268953069850. 2
 2268953069851. 3
 2268953069852. 4

Question Number : 341 Question Id : 226895791607 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I अवकल समीकरण		सूची-II हल [c एक स्वेच्छ अचर है]	
A.	$x \, dy = y \, dx$	I.	$y = e^x + c$
B.	$\log\left(\frac{dy}{dx}\right) = x$	II.	$y = c \, e^x$
C.	$\frac{y \, dx - dy}{y} = 0$	III.	$xy = c$
D.	$x \, dy + y \, dx = 0$	IV.	$y = cx$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-IV, B-II, C-I, D-III
2. A-IV, B-I, C-II, D-III
3. A-III, B-II, C-I, D-IV
4. A-III, B-I, C-II, D-IV

Options :

2268953069849. 1
2268953069850. 2
2268953069851. 3
2268953069852. 4

Question Number : 342 Question Id : 226895791608 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The general solution of the differential equation of the type $\frac{dy}{dx} + py = Q$ is:

(where P and Q are functions of x only or constant)

1. $y \, e^{\int p \, dy} = \int \left(Q \, e^{\int p \, dy} \right) dy + c$: (where c is an arbitrary constant)
2. $y \, e^{\int p \, dx} = \int \left(Q \, e^{\int p \, dx} \right) dx + c$: (where c is an arbitrary constant)
3. $x \, e^{\int p \, dy} = \int \left(Q \, e^{\int p \, dy} \right) dy + c$: (where c is an arbitrary constant)
4. $x \, e^{\int p \, dy} = \int \left(Q \, e^{\int p \, dx} \right) dx + c$ (where c is an arbitrary constant)

Options :

2268953069853. 1
2268953069854. 2
2268953069855. 3
2268953069856. 4

Question Number : 342 Question Id : 226895791608 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\frac{dy}{dx} + py = Q$ के रूप वाले अवकल समीकरण का व्यापक हल है:

(जहाँ, P और Q केवल x के फलन या अचर हैं)

1. $y e^{\int p dy} = \int \left(Q e^{\int p dy} \right) dy + c$: (जहाँ c एक स्वेच्छ अचर है)
2. $y e^{\int p dx} = \int \left(Q e^{\int p dx} \right) dx + c$: (जहाँ c एक स्वेच्छ अचर है)
3. $x e^{\int p dy} = \int \left(Q e^{\int p dy} \right) dy + c$: (जहाँ c एक स्वेच्छ अचर है)
4. $x e^{\int p dy} = \int \left(Q e^{\int p dx} \right) dx + c$: (जहाँ c एक स्वेच्छ अचर है)

Options :

2268953069853. 1
 2268953069854. 2
 2268953069855. 3
 2268953069856. 4

Question Number : 343 Question Id : 226895791609 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	If $ \vec{a} = \sqrt{26}$, $ \vec{b} = 7$ and $ \vec{a} \times \vec{b} = 35$, then $ \vec{a} \cdot \vec{b} $ is equal to	I.	4
B.	If $2\hat{i} - 3\hat{j} + 4\hat{k}$ and $a\hat{i} - 6\hat{j} + 8\hat{k}$ are collinear, then 'a' is equal to	II.	2
C.	If $2\hat{i} + \hat{j} + \hat{k}$ and $2\hat{i} - 4\hat{j} + \lambda\hat{k}$ are perpendicular, then λ is equal to	III.	7
D.	$(\hat{i} \times \hat{j}) \cdot \hat{k} + (\hat{j} \times \hat{k}) \cdot \hat{i}$ is equal to	IV.	0

Choose the **correct** answer from the options given below:

1. A-III, B-II, C-IV, D-I
2. A-III, B-I, C-IV, D-II
3. A-II, B-I, C-III, D-IV
4. A-I, B-IV, C-II, D-III

Options :

2268953069857. 1
 2268953069858. 2
 2268953069859. 3
 2268953069860. 4

Question Number : 343 Question Id : 226895791609 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	यदि $ \vec{a} = \sqrt{26}$, $ \vec{b} = 7$ और $ \vec{a} \times \vec{b} = 35$, तो $ \vec{a} \cdot \vec{b} $ बराबर है	I.	4
B.	यदि $2\hat{i} - 3\hat{j} + 4\hat{k}$ और $a\hat{i} - 6\hat{j} + 8\hat{k}$ सरिस्तीय हैं, तो 'a' बराबर है	II.	2
C.	यदि $2\hat{i} + \hat{j} + \hat{k}$ और $2\hat{i} - 4\hat{j} + \lambda\hat{k}$ लंबवत हैं, तो λ बराबर है	III.	7
D.	$(\hat{i} \times \hat{j}) \cdot \hat{k} + (\hat{j} \times \hat{k}) \cdot \hat{i}$ बराबर है	IV.	0

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-III, B-II, C-IV, D-I
2. A-III, B-I, C-IV, D-II
3. A-II, B-I, C-III, D-IV
4. A-I, B-IV, C-II, D-III

Options :

2268953069857. 1
 2268953069858. 2
 2268953069859. 3
 2268953069860. 4

Question Number : 344 Question Id : 226895791610 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\vec{a} = x\hat{i} + y\hat{j} + z\hat{k}$, $\vec{b} = \hat{i} + \hat{k}$ and $\vec{c} = y\hat{i} + z\hat{j} + x\hat{k}$ are three vectors such that $\vec{a} \times \vec{b} \perp \vec{c}$, then

1. $y^2 = xz$
2. $x^2 = yz$
3. $z^2 = xy$
4. $xyz = 1$

Options :

2268953069861. 1
 2268953069862. 2
 2268953069863. 3
 2268953069864. 4

Question Number : 344 Question Id : 226895791610 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $\vec{a} = x\hat{i} + y\hat{j} + z\hat{k}$, $\vec{b} = \hat{i} + \hat{k}$ और $\vec{c} = y\hat{i} + y\hat{j} + z\hat{k}$ तीन सदिश इस प्रकार हैं कि $\vec{a} \times \vec{b} \perp \vec{c}$, तो

1. $y^2 = xz$
2. $x^2 = yz$
3. $z^2 = xy$
4. $xyz = 1$

Options :

2268953069861. 1
2268953069862. 2
2268953069863. 3
2268953069864. 4

Question Number : 345 Question Id : 226895791611 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\vec{a}$ is any vector, then the value of $|\vec{a} \times \hat{i}|^2 + |\vec{a} \times \hat{j}|^2 + |\vec{a} \times \hat{k}|^2$ is equal to

1. $2|\vec{a}|^2$
2. $|\vec{a}|^2$
3. $4|\vec{a}|^2$
4. $3|\vec{a}|^2$

Options :

2268953069865. 1
2268953069866. 2
2268953069867. 3
2268953069868. 4

Question Number : 345 Question Id : 226895791611 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $\vec{a}$ कोई सदिश है, तो $|\vec{a} \times \hat{i}|^2 + |\vec{a} \times \hat{j}|^2 + |\vec{a} \times \hat{k}|^2$ बराबर है :

1. $2|\vec{a}|^2$
2. $|\vec{a}|^2$
3. $4|\vec{a}|^2$
4. $3|\vec{a}|^2$

Options :

2268953069865. 1
2268953069866. 2
2268953069867. 3
2268953069868. 4

Question Number : 346 Question Id : 226895791612 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $\vec{a}$, $\vec{b}$ and $\vec{c}$ are three unit vectors such that $\vec{a} \cdot \vec{b} = \vec{a} \cdot \vec{c} = 0$ and angle between $\vec{b}$ and $\vec{c}$ is $\frac{\pi}{6}$, then

1. $\vec{a} = \vec{b} \times \vec{c}$
2. $\vec{a} = \pm(\vec{b} \times \vec{c})$
3. $\vec{a} = 2(\vec{b} \times \vec{c})$
4. $\vec{a} = \pm 2(\vec{b} \times \vec{c})$

Options :

2268953069869. 1
 2268953069870. 2
 2268953069871. 3
 2268953069872. 4

Question Number : 346 Question Id : 226895791612 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $\vec{a}$, $\vec{b}$ और $\vec{c}$ तीन इकाई सदिश इस प्रकार हैं कि $\vec{a} \cdot \vec{b} = \vec{a} \cdot \vec{c} = 0$ और $\vec{b}$ और $\vec{c}$ के बीच का कोण $\frac{\pi}{6}$ है, तो

1. $\vec{a} = \vec{b} \times \vec{c}$
2. $\vec{a} = \pm(\vec{b} \times \vec{c})$
3. $\vec{a} = 2(\vec{b} \times \vec{c})$
4. $\vec{a} = \pm 2(\vec{b} \times \vec{c})$

Options :

2268953069869. 1
 2268953069870. 2
 2268953069871. 3
 2268953069872. 4

Question Number : 347 Question Id : 226895791613 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If α , β , γ are angles of inclinations of a line with x , y and z -axis respectively, then which of the following are correct?

- A. $\cos^2 \alpha + \cos^2 \beta + \cos^2 \gamma = 1$
- B. $\cos 2\alpha + \cos 2\beta + \cos 2\gamma = -1$
- C. $\sin^2 \alpha + \sin^2 \beta + \sin^2 \gamma = -2$
- D. $\cos^2 \alpha + \cos^2 \beta + \cos^2 \gamma = 2$

Choose the correct answer from the options given below:

1. A and B only
2. A, B and C only
3. B and D only
4. A and D only

Options :

2268953069873. 1

2268953069874. 2

2268953069875. 3

2268953069876. 4

Question Number : 347 Question Id : 226895791613 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि एक रेखा द्वारा x, y और z -अक्ष की धनात्मक दिशाओं के साथ बनाए गए क्रमशः कोण α, β एवं γ हैं, तो निम्नलिखित में से कौन सा कथन सही है?

- A. $\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1$
- B. $\cos 2\alpha + \cos 2\beta + \cos 2\gamma = -1$
- C. $\sin^2\alpha + \sin^2\beta + \sin^2\gamma = -2$
- D. $\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 2$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और B
- 2. केवल A, B और C
- 3. केवल B और D
- 4. केवल A और D

Options :

2268953069873. 1

2268953069874. 2

2268953069875. 3

2268953069876. 4

Question Number : 348 Question Id : 226895791614 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The lines $x = py + q, z = ry + s$ and $x = p'y + q', z = r'y + s'$ are perpendicular if

- 1. $pp' + rr' = 0$
- 2. $pp' + rr' + 1 = 0$
- 3. $\frac{p}{p'} = \frac{r}{r'}$
- 4. $pp' = rr'$

Options :

2268953069877. 1

2268953069878. 2

2268953069879. 3

2268953069880. 4

Question Number : 348 Question Id : 226895791614 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

रेखाएँ $x = py + q, z = ry + s$ और $x = p'y + q', z = r'y + s'$ लंबवत हैं, यदि

1. $pp' + rr' = 0$
2. $pp' + rr' + 1 = 0$
3. $\frac{p}{p'} = \frac{r}{r'}$
4. $pp' = rr'$

Options :

2268953069877. 1
2268953069878. 2
2268953069879. 3
2268953069880. 4

Question Number : 349 Question Id : 226895791615 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two lines L_1 and L_2 are given as $L_1: \vec{r} = (\hat{i} + 2\hat{j} + 3\hat{k}) + \lambda(2\hat{i} + 3\hat{j} + 4\hat{k})$ and $L_2: \vec{r} = (2\hat{i} + 4\hat{j} + 5\hat{k}) + \mu(4\hat{i} + 6\hat{j} + 8\hat{k})$, where λ and μ are real parameters. Then which of the following statements are correct ?

- A. Shortest distance between line L_1 and L_2 is $\sqrt{\frac{5}{29}}$.
- B. line L_1 and L_2 are parallel.
- C. line L_1 and L_2 are concurrent lines.
- D. line L_1 and L_2 are perpendicular.

Choose the **correct** answer from the options given below:

1. B and C only
2. C and D only
3. A and C only
4. A and B only

Options :

2268953069881. 1
2268953069882. 2
2268953069883. 3
2268953069884. 4

Question Number : 349 Question Id : 226895791615 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

दो रेखाएँ L_1 और L_2 , जिनके सदिश समीकरण निम्नलिखित हैं,

$$L_1: \vec{r} = (\hat{i} + 2\hat{j} + 3\hat{k}) + \lambda(2\hat{i} + 3\hat{j} + 4\hat{k}) \text{ और } L_2: \vec{r} = (2\hat{i} + 4\hat{j} + 5\hat{k}) + \mu(4\hat{i} + 6\hat{j} + 8\hat{k}),$$

जहाँ λ और μ वास्तविक प्राचल हैं। तो निम्नलिखित में से कौन सा कथन सही है?

- A. रेखा L_1 और L_2 के बीच की न्यूनतम दूरी $\sqrt{\frac{5}{29}}$ है
- B. रेखा L_1 और L_2 समानांतर हैं
- C. रेखा L_1 और L_2 संगामी हैं
- D. रेखा L_1 और L_2 लंबवत हैं

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल B और C
- 2. केवल C और D
- 3. केवल A और C
- 4. केवल A और B

Options :

- 2268953069881. 1
- 2268953069882. 2
- 2268953069883. 3
- 2268953069884. 4

Question Number : 350 Question Id : 226895791616 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The objective function of a LPP is given by $z = ax + by$, where a and b are constants. If minimum of z occurs at two points $(50, 30)$ and $(20, 40)$, then

- 1. $3b = a$
- 2. $3b + a = 0$
- 3. $3a + b = 0$
- 4. $3a - b = 0$

Options :

- 2268953069885. 1
- 2268953069886. 2
- 2268953069887. 3
- 2268953069888. 4

Question Number : 350 Question Id : 226895791616 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

रेखिक प्रोग्रामन समस्या का उद्देश्य फलन $z = ax + by$ है, जहाँ a और b अचर हैं।

यदि z का न्यूनतम मान दो बिंदुओं $(50, 30)$ और $(20, 40)$ पर प्राप्त होता है, तो

- 1. $3b = a$
- 2. $3b + a = 0$
- 3. $3a + b = 0$
- 4. $3a - b = 0$

Options :

- 2268953069885. 1
- 2268953069886. 2

2268953069887. 3

2268953069888. 4

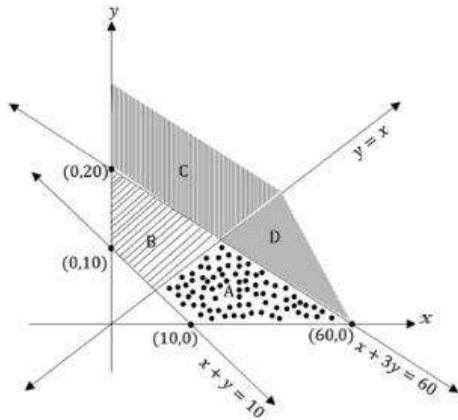
Question Number : 351 Question Id : 226895791617 Question Type : MCQ Option Shuffling : No Display Question Number :
Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In the linear programming problem:

Minimize $z = x + y$, subject to the constraints:

$$x + 3y \leq 60, x + y \geq 10, x \leq y, x \geq 0, y \geq 0$$

Which of the following region in graph given below represents the feasible region of the above LPP?



1. A
2. B
3. C
4. D

Options :

2268953069889. 1

2268953069890. 2

2268953069891. 3

2268953069892. 4

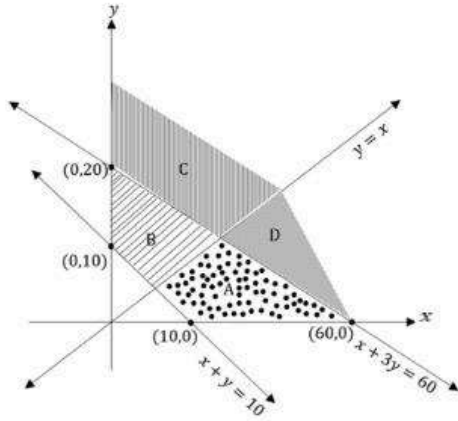
Question Number : 351 Question Id : 226895791617 Question Type : MCQ Option Shuffling : No Display Question Number :
Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

रैखिक प्रोग्रामन समस्या में:

व्यवरोधों $x + 3y \leq 60$, $x + y \geq 10$, $x \leq y$, $x \geq 0$, $y \geq 0$ के अंतर्गत:

उद्देश्य फलन $z = x + y$ का न्यूनतमीकरण करें।

नीचे दी गई आकृति में कौन सा क्षेत्र उपरोक्त LPP के सुसंगत क्षेत्र को दर्शाता है:



1. A

2. B

3. C

4. D

Options :

2268953069889. 1

2268953069890. 2

2268953069891. 3

2268953069892. 4

Question Number : 352 Question Id : 226895791618 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A speaks truth in 80% cases and B in 90% cases. The probability that they contradict each other in stating the same fact, is:

1. $\frac{17}{50}$

2. $\frac{13}{50}$

3. $\frac{19}{50}$

4. $\frac{11}{50}$

Options :

2268953069893. 1

2268953069894. 2

2268953069895. 3

2268953069896. 4

Question Number : 352 Question Id : 226895791618 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A 80 प्रतिशत प्रकरणों और B 90 प्रतिशत प्रकरणों में सच बोलता है। एक ही तथ्य को बताने के लिए परस्पर विरोधाभास की प्रायिकता है:

1. $\frac{17}{50}$
2. $\frac{13}{50}$
3. $\frac{19}{50}$
4. $\frac{11}{50}$

Options :

2268953069893. 1
2268953069894. 2
2268953069895. 3
2268953069896. 4

Question Number : 353 Question Id : 226895791619 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If A and B are two events such that $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ and $P(A \cap B) = \frac{1}{4}$, then

$$P\left(\frac{A'}{B}\right) =$$

1. $\frac{3}{4}$
2. $\frac{1}{4}$
3. $\frac{1}{2}$
4. $\frac{5}{8}$

Options :

2268953069897. 1
2268953069898. 2
2268953069899. 3
2268953069900. 4

Question Number : 353 Question Id : 226895791619 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि A और B दो घटनाएँ हैं जहाँ $P(A) = \frac{1}{2}$, $P(B) = \frac{1}{3}$ और $P(A \cap B) = \frac{1}{4}$, तो $P\left(\frac{A'}{B}\right) =$

1. $\frac{3}{4}$

2. $\frac{1}{4}$

3. $\frac{1}{2}$

4. $\frac{5}{8}$

Options :

2268953069897. 1

2268953069898. 2

2268953069899. 3

2268953069900. 4

Question Number : 354 Question Id : 226895791620 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The probability of the simultaneous occurrence of two events A and B is p . If the probability that exactly one of A and B occurs is q , then

A. $P(\bar{A}) + P(\bar{B}) = 2 + 2q - p$

B. $P(\bar{A}) + P(\bar{B}) = 2 - 2p - q$

C. $P(\bar{A} \cap \bar{B}) = 1 - p - q$

D. $P((A \cap B)|(A \cup B)) = \frac{p}{p+q}$

Choose the **correct** answer from the options given below:

1. A, C and D only

2. B, C and D only

3. C and D only

4. B only

Options :

2268953069901. 1

2268953069902. 2

2268953069903. 3

2268953069904. 4

Question Number : 354 Question Id : 226895791620 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A और B दो घटनाओं के एक साथ घटित होने की प्रायिकता p है। यदि A और B में से ठीक एक के घटने की प्रायिकता q है, तो

A. $P(\bar{A}) + P(\bar{B}) = 2 + 2q - p$

B. $P(\bar{A}) + P(\bar{B}) = 2 - 2p - q$

C. $P(\bar{A} \cap \bar{B}) = 1 - p - q$

D. $P((A \cap B) | (A \cup B)) = \frac{p}{p+q}$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. केवल A, C और D

2. केवल B, C और D

3. केवल C और D

4. केवल B

Options :

2268953069901. 1

2268953069902. 2

2268953069903. 3

2268953069904. 4

Question Number : 355 Question Id : 226895791621 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A letter is known to have come for 'RAVINDRA' or 'DEVINDRAN'. On the envelop just two consecutive letters 'RA' are visible. The probability that the letter has come for 'RAVINDRA' is:

1. $\frac{16}{23}$

2. $\frac{7}{11}$

3. $\frac{4}{11}$

4. $\frac{7}{23}$

Options :

2268953069905. 1

2268953069906. 2

2268953069907. 3

2268953069908. 4

Question Number : 355 Question Id : 226895791621 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

ज्ञात है कि 'RAVINDRA' या 'DEVINDRAN' के लिए एक पत्र आना था, लिफाफे पर केवल दो क्रमागत अक्षरों 'RA' दिखाई दे रहे हैं। इस पत्र के 'RAVINDRA' के लिए आने की प्रायिकता है:

1. $\frac{16}{23}$

2. $\frac{7}{11}$

3. $\frac{4}{11}$

4. $\frac{7}{23}$

Options :

2268953069905. 1

2268953069906. 2

2268953069907. 3

2268953069908. 4

Section B2: Applied Mathematics

Section Id :	22689516542
Section Number :	3
Section type :	Online
Mandatory or Optional :	Optional
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	175
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	22689532983
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 356 Question Id : 226895791622 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The effective rate that is equivalent to a nominal rate of 6% per annum compounded semi-annually is

1. 6%

2. 6.09%

3. 0.069%

4. 9.06%

Options :

2268953069909. 1

2268953069910. 2

2268953069911. 3

2268953069912. 4

Question Number : 356 Question Id : 226895791622 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

प्रभावी दर जो अर्ध-वार्षिक चक्रवृद्धि 6% प्रति वर्ष की नामित दर के बराबर है, वह दर है :

1. 6%
2. 6.09%
3. 0.069%
4. 9.06%

Options :

2268953069909. 1
2268953069910. 2
2268953069911. 3
2268953069912. 4

Question Number : 357 Question Id : 226895791623 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Assume an investment's starting value is ₹ 10,000 and it grows to ₹ 60,000 in 4 years, then the CAGR % of the investment is,

[given : $(6)^{1/4} = 1.565$]

1. 65%
2. 56.5%
3. 65.5%
4. 55.6%

Options :

2268953069913. 1
2268953069914. 2
2268953069915. 3
2268953069916. 4

Question Number : 357 Question Id : 226895791623 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

मान लीजिए कि किसी निवेश का प्रारंभिक मूल्य ₹ 10,000 है और यह 4 वर्षों में ₹ 60,000 हो जाता है, तो निवेश का चक्रवृद्धि वार्षिक वृद्धि दर% (CAGR%) है:

[दिया है $(6)^{1/4} = 1.565$]

1. 65%
2. 56.5%
3. 65.5%
4. 55.6%

Options :

2268953069913. 1
2268953069914. 2
2268953069915. 3
2268953069916. 4

Question Number : 358 Question Id : 226895791624 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Vishal purchased a machine costing ₹ 50,000. The estimated useful life of the machine is 10 years with a scrap value of ₹ 5,000. The annual depreciation using linear method is,

1. ₹ 45,000
2. ₹ 4,500
3. ₹ 3500
4. ₹ 2500

Options :

2268953069917. 1
2268953069918. 2
2268953069919. 3
2268953069920. 4

Question Number : 358 Question Id : 226895791624 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

विशाल ने 50,000 रुपये की लागत वाली एक मशीन खरीदी। मशीन का अनुमानित उपयोगी जीवन काल, 5,000 रुपये के रद्दी (स्क्रेप) मूल्य के साथ, 10 वर्ष है। रैखिक विधि का उपयोग करते हुए वार्षिक मूल्यहास है :

1. ₹ 45,000
2. ₹ 4,500
3. ₹ 3500
4. ₹ 2500

Options :

2268953069917. 1
2268953069918. 2
2268953069919. 3
2268953069920. 4

Question Number : 359 Question Id : 226895791625 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Vatsala takes a loan of ₹ 2,00,000 at an interest rate of 10% per annum for 5 years. Her EMI using flat rate method is,

1. ₹ 20,000
2. ₹ 1,666.6
3. ₹ 5,000
4. ₹ 15,000

Options :

2268953069921. 1
2268953069922. 2
2268953069923. 3
2268953069924. 4

Question Number : 359 Question Id : 226895791625 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

वत्सला 5 वर्षों के लिए 10 प्रतिशत प्रति वर्ष की ब्याज दर पर ₹ 2,00,000 का ऋण लेती है।

समान दर विधि द्वारा उसकी समान मासिक किस्त (EMI) है :

1. ₹ 20,000
2. ₹ 1,666.6
3. ₹ 5,000
4. ₹ 15,000

Options :

2268953069921. 1
2268953069922. 2
2268953069923. 3
2268953069924. 4

Question Number : 360 Question Id : 226895791626 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Face value of a bond is

1. the rate at which a bond yields interest
2. the price at which the bond is sold to buyers at the time of issue
3. the annual interest rate paid by the bond issuer to the bond holder
4. the discount rate which returns the market price of a bond without embedded optionality

Options :

2268953069925. 1
2268953069926. 2
2268953069927. 3
2268953069928. 4

Question Number : 360 Question Id : 226895791626 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

बॉन्ड का अंकित मूल्य है

1. वह दर जिस पर बांड ब्याज देता है
2. वह मूल्य जिस पर बांड जारी करने के समय खरीदारों को बेचा जाता है
3. बांड जारीकर्ता द्वारा बांड धारक को भुगतान की जाने वाली वार्षिक ब्याज दर
4. छूट दर जो अंतर्निहित ऐच्छिकता के बिना बांड के बाजार मूल्य को लौटाती है

Options :

2268953069925. 1
2268953069926. 2
2268953069927. 3
2268953069928. 4

Question Number : 361 Question Id : 226895791627 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

At what rate of interest per annum will the present value of a perpetuity of ₹ 500 payable at the end of every 6 months be ₹ 10,000?

1. 15%
2. 10%
3. 20%
4. 25%

Options :

2268953069929. 1
2268953069930. 2
2268953069931. 3
2268953069932. 4

Question Number : 361 Question Id : 226895791627 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

वार्षिक ब्याज की किस दर पर हर 6 महीने के अंत में देय ₹ 500 की शाश्वत राशि का वर्तमान मूल्य ₹ 10,000 होगा?

1. 15 प्रतिशत
2. 10 प्रतिशत
3. 20 प्रतिशत
4. 25 प्रतिशत

Options :

2268953069929. 1
2268953069930. 2
2268953069931. 3
2268953069932. 4

Question Number : 362 Question Id : 226895791628 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let X denote the number of hours a person drive during a randomly selected working day. The probability that X can take the value x_i has the following form, where k is some unknown constant.

$$P(X = x_i) = \begin{cases} 0.2, & \text{if } x_i = 0 \\ kx_i, & \text{if } x_i = 1 \text{ or } 2 \\ k(4 - x_i), & \text{if } x_i = 3 \\ 0, & \text{otherwise} \end{cases}$$

Match the **LIST-I** with **LIST-II**

LIST-I		LIST-II	
A.	The value of k	I.	1
B.	The probability that the person drive atleast two hours on a selected working day	II.	0.4
C.	The probability that the person drive atmost three hours on a selected working day	III.	0.2
D.	The probability that the person drive atmost one hour on a selected working day	IV.	0.6

Choose the **correct** answer from the options given below:

1. A-III, B-II, C-I, D-IV
2. A-III, B-IV, C-I, D-II
3. A-IV, B-II, C-III, D-I
4. A-IV, B-III, C-II, D-I

Options :

2268953069933. 1
 2268953069934. 2
 2268953069935. 3
 2268953069936. 4

Question Number : 362 Question Id : 226895791628 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

मान लीजिए कि चर X यादृच्छिक चुने गए एक कार्य दिवस के दौरान एक व्यक्ति द्वारा गाड़ी चलाने के घंटों की संख्या को दर्शाता है। प्रायिकता बंटन फलन $P(X = x_i)$ निम्न प्रकार से परिभाषित है, जहाँ k कोई अज्ञात अचर है।

$$P(X = x_i) = \begin{cases} 0.2, & \text{यदि } x_i = 0 \\ kx_i, & \text{यदि } x_i = 1 \text{ या } 2 \\ k(4 - x_i), & \text{यदि } x_i = 3 \\ 0, & \text{अन्यथा} \end{cases}$$

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	k का मान	I.	1
B.	एक चुने गए कार्य दिवस पर व्यक्ति द्वारा कम से कम दो घंटे गाड़ी चलाने की प्रायिकता	II.	0.4
C.	एक चयनित कार्य दिवस पर व्यक्ति द्वारा अधिक से अधिक तीन घंटे गाड़ी चलाने की प्रायिकता	III.	0.2
D.	एक चयनित कार्य दिवस पर व्यक्ति द्वारा अधिक से अधिक एक घंटा गाड़ी चलाने की प्रायिकता	IV.	0.6

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-III, B-II, C-I, D-IV
2. A-III, B-IV, C-I, D-II
3. A-IV, B-II, C-III, D-I
4. A-IV, B-III, C-II, D-I

Options :

2268953069933. 1
 2268953069934. 2
 2268953069935. 3
 2268953069936. 4

Question Number : 363 Question Id : 226895791629 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

LIST-I		LIST-II	
A.	In a binomial distribution, if $n = 20$, $q = 0.75$ then its mean is	I.	25
B.	An unbiased coin is tossed 4 times. The mean of the number of tails is	II.	5
C.	In a binomial distribution, mean is 5 and variance is 4, then the number of trials is	III.	0.5
D.	In a binomial distribution, if mean is 8 and variance is 4, then the probability of success is	IV.	2

Choose the **correct** answer from the options given below:

1. A-III, B-IV, C-I, D-II
2. A-II, B-I, C-IV, D-III
3. A-II, B-IV, C-I, D-III
4. A-II, B-I, C-III, D-IV

Options :

2268953069937. 1
 2268953069938. 2
 2268953069939. 3
 2268953069940. 4

Question Number : 363 Question Id : 226895791629 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	एक द्विपद बंटन में, यदि $n = 20$, $q = 0.75$ तो इसका माध्य है	I.	25
B.	एक अनभिनत सिक्के को 4 बार उछाला जाता है। पटों की संख्या का माध्य है	II.	5
C.	एक द्विपद बंटन में, माध्य 5 है और प्रसरण 4 है, तो परीक्षणों की संख्या है	III.	0.5
D.	एक द्विपद बंटन में, यदि माध्य 8 है और प्रसरण 4 है, तो सफलता की प्रायिकता है	IV.	2

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A-III, B-IV, C-I, D-II
2. A-II, B-I, C-IV, D-III
3. A-II, B-IV, C-I, D-III
4. A-II, B-I, C-III, D-IV

Options :

2268953069937. 1
 2268953069938. 2
 2268953069939. 3
 2268953069940. 4

Question Number : 364 Question Id : 226895791630 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If X is a Poisson variate such that $4P(X = 2) = 3P(X = 1)$, then the mean of the distribution is equal to:

1. 1.5
2. 2
3. 3
4. 4

Options :

2268953069941. 1
2268953069942. 2
2268953069943. 3
2268953069944. 4

Question Number : 364 Question Id : 226895791630 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि X एक प्वासो विचर है जहाँ $4P(X = 2) = 3P(X = 1)$, तो बंटन का माध्य है:

1. 1.5
2. 2
3. 3
4. 4

Options :

2268953069941. 1
2268953069942. 2
2268953069943. 3
2268953069944. 4

Question Number : 365 Question Id : 226895791631 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a math aptitude test, students scores are found to be normally distributed having mean as 45 and standard deviation 5. What percent of students scored more than the mean score?

1. 45%
2. 50%
3. 5%
4. 60%

Options :

2268953069945. 1
2268953069946. 2
2268953069947. 3
2268953069948. 4

Question Number : 365 Question Id : 226895791631 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

गणित अभिरूचि परीक्षण में, छात्रों के अंक, माध्य 45 और मानक विचलन 5 के साथ प्रसामान्य बंटन का अनुसरण करते हैं। कितने प्रतिशत छात्रों ने माध्य अंक से अधिक अंक प्राप्त किए?

1. 45%
2. 50%
3. 5%
4. 60%

Options :

2268953069945. 1
2268953069946. 2
2268953069947. 3
2268953069948. 4

Question Number : 366 Question Id : 226895791632 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $y = e^{4x} (92)^x$; then $\frac{dy}{dx}$ is equal to

($\log_e x = \log x$)

1. $4x e^{4x} \cdot 92^{x-1}$
2. $e^{4x} 92^{x-1} [368 + x]$
3. $e^{4x} (92)^x [4 + \log 92]$
4. $e^{4x} 92^x \log 92$

Options :

2268953069949. 1
2268953069950. 2
2268953069951. 3
2268953069952. 4

Question Number : 366 Question Id : 226895791632 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $y = e^{4x} (92)^x$; तो $\frac{dy}{dx}$ इसके बराबर है:

(जहाँ $\log_e x = \log x$)

1. $4x e^{4x} \cdot 92^{x-1}$
2. $e^{4x} 92^{x-1} [368 + x]$
3. $e^{4x} (92)^x [4 + \log 92]$
4. $e^{4x} 92^x \log 92$

Options :

2268953069949. 1
2268953069950. 2
2268953069951. 3
2268953069952. 4

Question Number : 367 Question Id : 226895791633 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The order and degree of the following differential equation :

$$y = px + \sqrt{a^2 p^2 + b^2}, \text{ where } p = \frac{dy}{dx}, \text{ are}$$

1. Order = 2 : degree = 2
2. Order = 1 : degree = 1
3. Order = 1 : degree = 2
4. Order = 2 : degree = 1

Options :

2268953069953. 1
2268953069954. 2
2268953069955. 3
2268953069956. 4

Question Number : 367 Question Id : 226895791633 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित अवकल समीकरण $y = px + \sqrt{a^2 p^2 + b^2}$, जहाँ $p = \frac{dy}{dx}$, की कोटि और

घात हैं :

1. कोटि = 2: घात = 2
2. कोटि = 1: घात = 1
3. कोटि = 1: घात = 2
4. कोटि = 2: घात = 1

Options :

2268953069953. 1
2268953069954. 2
2268953069955. 3
2268953069956. 4

Question Number : 368 Question Id : 226895791634 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The demand function for a certain product is represented by the equation $p = 150 + 12x - x^2$, where x is the number of units demanded and p is the price per unit. The marginal revenue when 5 units are sold is

1. ₹ 195
2. ₹ 282
3. ₹ 91
4. ₹ 185

Options :

2268953069957. 1
2268953069958. 2
2268953069959. 3
2268953069960. 4

Question Number : 368 Question Id : 226895791634 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

एक निश्चित उत्पाद के लिए मांग फलन को समीकरण $p = 150 + 12x - x^2$ द्वारा दर्शाया गया है, जहाँ x मांग की गई इकाइयों की संख्या है और p प्रति इकाई मूल्य है। जब 5 इकाइयाँ बेची जाती हैं तो सीमांत राजस्व है

1. ₹ 195
2. ₹ 282
3. ₹ 91
4. ₹ 185

Options :

2268953069957. 1
2268953069958. 2
2268953069959. 3
2268953069960. 4

Question Number : 369 Question Id : 226895791635 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The function $f(x) = 4x^3 - 18x^2 + 27x - 7$ has:-

1. Maxima at $x = \frac{3}{2}$
2. Minima at $x = \frac{3}{2}$
3. Point of inflexion at $x = \frac{3}{2}$
4. Maximum value of function is 156

Options :

2268953069961. 1
2268953069962. 2
2268953069963. 3
2268953069964. 4

Question Number : 369 Question Id : 226895791635 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

फलन $f(x) = 4x^3 - 18x^2 + 27x - 7$ रखता है:-

1. $x = \frac{3}{2}$ पर उच्चतम
2. $x = \frac{3}{2}$ पर न्यूनतम
3. $x = \frac{3}{2}$ पर नति परिवर्तन बिंदु
4. फलन का उच्चतम मान 156 है

Options :

2268953069961. 1
2268953069962. 2
2268953069963. 3
2268953069964. 4

Question Number : 370 Question Id : 226895791636 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The function $f(x) = \frac{2}{x} + 5, x \neq 0$ is

1. increasing function for $x \in \mathbb{R} - \{0\}$
2. increasing function for $x \in (0, \infty)$
3. neither increasing nor decreasing function for $x \in (0, \infty)$
4. decreasing function for $x \in \mathbb{R} - \{0\}$

Options :

2268953069965. 1
2268953069966. 2
2268953069967. 3
2268953069968. 4

Question Number : 370 Question Id : 226895791636 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

फलन $f(x) = \frac{2}{x} + 5, x \neq 0$ है

1. $x \in \mathbb{R} - \{0\}$ के लिए वर्धमान
2. $x \in (0, \infty)$ के लिए वर्धमान
3. $x \in (0, \infty)$ के लिए न तो वर्धमान और न ही हासमान
4. $x \in \mathbb{R} - \{0\}$ के लिए हासमान

Options :

2268953069965. 1
2268953069966. 2
2268953069967. 3
2268953069968. 4

Question Number : 371 Question Id : 226895791637 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int (x+1)e^x dx$ is equal to

[C is an arbitrary constant]

1. $(x+1)e^x + C$
2. $e^x + C$
3. $xe^x + C$
4. $(x+1) + C$

Options :

2268953069969. 1
2268953069970. 2
2268953069971. 3
2268953069972. 4

Question Number : 371 Question Id : 226895791637 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

$\int (x+1)e^x dx$ बराबर है

[c स्वेच्छ अचर है]

1. $(x+1)e^x + C$
2. $e^x + C$
3. $xe^x + C$
4. $(x+1) + C$

Options :

2268953069969. 1
2268953069970. 2
2268953069971. 3
2268953069972. 4

Question Number : 372 Question Id : 226895791638 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Particular solution of the differential equation $(x-1)\frac{dy}{dx} = 2xy$, when $y(2) = 1$

is:- (consider $\log_e x = \log x$)

1. $\log|y| + \log(x-1)^2 = 2x + 4$
2. $\log|y| - \log(x-1)^2 = 2x - 4$
3. $\log|y| + \log(x-1)^2 = 2x - 4$
4. $\log|y| - \log(x-1)^2 = 2x + 4$

Options :

2268953069973. 1
2268953069974. 2
2268953069975. 3
2268953069976. 4

Question Number : 372 Question Id : 226895791638 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

अवकल समीकरण $(x-1)\frac{dy}{dx} = 2xy$ का विशिष्ट हल, जब $y(2) = 1$ है:

($\log_e x = \log x$)

1. $\log|y| + \log(x-1)^2 = 2x + 4$
2. $\log|y| - \log(x-1)^2 = 2x - 4$
3. $\log|y| + \log(x-1)^2 = 2x - 4$
4. $\log|y| - \log(x-1)^2 = 2x + 4$

Options :

2268953069973. 1
2268953069974. 2
2268953069975. 3
2268953069976. 4

Question Number : 373 Question Id : 226895791639 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Let R be the feasible region for a linear programming problem, and Let $z = ax + by$ be the objective function. If the feasible region R is bounded then which of the following are true ?

- A. The maximum or minimum value of objective function may not exist.
- B. The objective function z has both a maximum and a minimum value on R .
- C. Maximum and minimum values lie in the unbounded region
- D. The objective function $z = ax + by$ has both a maximum value and a minimum value and each of these values occurs at a corner point of R .

Choose the **correct** answer from the options given below:

- 1. A and B only
- 2. A and D only
- 3. B and D only
- 4. C and D only

Options :

- 2268953069977. 1
- 2268953069978. 2
- 2268953069979. 3
- 2268953069980. 4

Question Number : 373 Question Id : 226895791639 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

मान लीजिए कि R एक रैखिक प्रोग्रामन समस्या के लिए सुसंगत क्षेत्र है, और $z = ax + by$ उद्देश्य फलन है। यदि सुसंगत क्षेत्र R परिबद्ध है तो निम्नलिखित में से कौन सा कथन सही है?

- A. उद्देश्य फलन का अधिकतम या न्यूनतम मान अस्तित्व में नहीं भी हो सकता है।
- B. उद्देश्य फलन z , R पर अधिकतम और न्यूनतम दोनों मान रखता है।
- C. अधिकतम और न्यूनतम मान अपरिबद्ध क्षेत्र में स्थित हैं।
- D. उद्देश्य फलन $z = ax + by$ अधिकतम मान और न्यूनतम मान दोनों रखता है और इनमें से प्रत्येक मान R के एक कोनीय बिंदु पर होता है।

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और B
- 2. केवल A और D
- 3. केवल B और D
- 4. केवल C और D

Options :

- 2268953069977. 1
- 2268953069978. 2
- 2268953069979. 3
- 2268953069980. 4

Question Number : 374 Question Id : 226895791640 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider a LPP given by

$$\text{Maximize } Z = 38x + 19y$$

Subjected to $3x + 5y \leq 15$, $5x + 2y \leq 10$, and $x, y \geq 0$

The optimum value of Z is,

1. 85
2. 190
3. 240
4. 57

Options :

2268953069981. 1
2268953069982. 2
2268953069983. 3
2268953069984. 4

Question Number : 374 Question Id : 226895791640 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

व्यवरोधों $3x + 5y \leq 15$, $5x + 2y \leq 10$, और $x, y \geq 0$ के अधीन उद्देश्य फलन $Z = 38x + 19y$ का अधिकतमीकरण करें, द्वारा दिए गए रेखिक प्रोग्रामन समस्या (एल. पी. पी.) पर विचार करें। Z का इष्टतम मान है:

1. 85
2. 190
3. 240
4. 57

Options :

2268953069981. 1
2268953069982. 2
2268953069983. 3
2268953069984. 4

Question Number : 375 Question Id : 226895791641 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following is/are true about parameter ?

- A. It is a characteristic of a sample.
- B. It is a characteristic of a population.
- C. It is a numerical value that is taken from the entire population, such as the population mean.
- D. It is the numerical value taken from a sample and calculated from the sample observations alone.

Choose the **correct** answer from the options given below:

1. A only
2. B and D only
3. B and C only
4. A and D only

Options :

2268953069985. 1
2268953069986. 2
2268953069987. 3
2268953069988. 4

Question Number : 375 Question Id : 226895791641 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित में से कौन सा/से कथन प्राचल के बारे में सही है/हैं?

- A. यह एक प्रतिदर्श की अभिलाक्षणिक है।
- B. यह एक समष्टि की अभिलाक्षणिक है।
- C. यह एक संख्यात्मक मान है जो सम्पूर्ण समष्टि से लिया जाता है, जैसे कि समष्टि माध्य।
- D. यह एक प्रतिदर्श से लिया गया संख्यात्मक मान है और केवल प्रतिदर्श के अवलोकन से गणना की जाती है।

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A
- 2. केवल B और D
- 3. केवल B और C
- 4. केवल A और D

Options :

2268953069985. 1
2268953069986. 2
2268953069987. 3
2268953069988. 4

Question Number : 376 Question Id : 226895791642 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Consider a office having seating capacity of 58 employees and all of them are to be seated in such a way that an employee can sit on any available vacant seat . What will be the degree of freedom?

- 1. 58
- 2. 57
- 3. 59
- 4. 58.5

Options :

2268953069989. 1
2268953069990. 2
2268953069991. 3
2268953069992. 4

Question Number : 376 Question Id : 226895791642 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

58 कर्मचारियों के बैठने की क्षमता वाले कार्यालय पर विचार करें और उन सभी को इस तरह से बैठाया जाना चाहिए कि एक कर्मचारी किसी भी उपलब्ध खाली सीट पर बैठ सके। स्वतंत्रता की कोटि क्या होगी?

1. 58
2. 57
3. 59
4. 58.5

Options :

2268953069989. 1
2268953069990. 2
2268953069991. 3
2268953069992. 4

Question Number : 377 Question Id : 226895791643 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The following data are from a simple random sample: 3, 7, 4, 12, 4, 12. The point estimate of the population mean is,

1. 42
2. 7
3. 24
4. 6

Options :

2268953069993. 1
2268953069994. 2
2268953069995. 3
2268953069996. 4

Question Number : 377 Question Id : 226895791643 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

निम्नलिखित आँकड़े एक साधारण यादृच्छिक प्रतिदर्श से हैं: 3,7,4,12,4,12 तो समष्टि माध्य का बिंदु आकलन है:

1. 42
2. 7
3. 24
4. 6

Options :

2268953069993. 1
2268953069994. 2
2268953069995. 3
2268953069996. 4

Question Number : 378 Question Id : 226895791644 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The patterns and behavior of the data in any time series are based on which of the following components.

- A. Seasonal component
- B. Secular trend component
- C. Irregular component
- D. Cyclical component

Choose the correct answer from the options given below:

- 1. A and B only
- 2. B and C only
- 3. B, C and D only
- 4. A, B, C and D

Options :

2268953069997. 1
2268953069998. 2
2268953069999. 3
2268953070000. 4

Question Number : 378 Question Id : 226895791644 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

किसी भी काल श्रेणी में आंकड़ों के प्रतिरूप (पैटर्न) और व्यवहार निम्नलिखित घटकों में से किस पर आधारित होते हैं

- A. मौसमी घटक
- B. दीर्घकालिक प्रवृत्ति घटक
- C. अनियमित घटक
- D. चक्रीय घटक

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और B
- 2. केवल B और C
- 3. केवल B, C और D
- 4. A, B, C और D

Options :

2268953069997. 1
2268953069998. 2
2268953069999. 3
2268953070000. 4

Question Number : 379 Question Id : 226895791645 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The number of wedding cards, in thousands, distributed in a certain city on each day for a week is given as follows:-

21, 35, 19, 27, 32, 22, 12.

The three days moving averages will be:

1. 25, 28, 26, 23, 21
2. 25, 24, 23, 27, 26
3. 25, 27, 26, 27, 22
4. 24, 28, 26, 22, 25

Options :

2268953070001. 1
2268953070002. 2
2268953070003. 3
2268953070004. 4

Question Number : 379 Question Id : 226895791645 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

एक सप्ताह के लिए प्रत्येक दिन एक निश्चित शहर में वितरित किए जाने वाले शादी के कार्डों की संख्या, हजारों में, इस प्रकार दी गई है: -

21, 35, 19, 27, 32, 22, 12

तीन दिनों का गतिमान माध्य होगा:

1. 25, 28, 26, 23, 21
2. 25, 24, 23, 27, 26
3. 25, 27, 26, 27, 22
4. 24, 28, 26, 22, 25

Options :

2268953070001. 1
2268953070002. 2
2268953070003. 3
2268953070004. 4

Question Number : 380 Question Id : 226895791646 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

LIST-I Matrix A		LIST-II $ \text{adj } A $	
A.	$A = \begin{bmatrix} 2 & 4 \\ 1 & 3 \end{bmatrix}$	I.	1
B.	$A = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$	II.	7
C.	$A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	III.	2
D.	$A = \begin{bmatrix} 6 & 1 \\ 5 & 2 \end{bmatrix}$	IV.	6

Choose the **correct** answer from the options given below:

1. A - I, B - II, C - III, D - IV
2. A - IV, B - II, C - III, D - I
3. A - III, B - IV, C - I, D - II
4. A - III, B - IV, C - II, D - I

Options :

2268953070005. 1
 2268953070006. 2
 2268953070007. 3
 2268953070008. 4

Question Number : 380 Question Id : 226895791646 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I आव्यूह A		सूची-II $ \text{adj } A $	
A.	$A = \begin{bmatrix} 2 & 4 \\ 1 & 3 \end{bmatrix}$	I.	1
B.	$A = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$	II.	7
C.	$A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	III.	2
D.	$A = \begin{bmatrix} 6 & 1 \\ 5 & 2 \end{bmatrix}$	IV.	6

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A - I, B - II, C - III, D - IV
2. A - IV, B - II, C - III, D - I
3. A - III, B - IV, C - I, D - II
4. A - III, B - IV, C - II, D - I

Options :

2268953070005. 1

2268953070006. 2

2268953070007. 3

2268953070008. 4

Question Number : 381 Question Id : 226895791647 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

For a given square matrix A of order n , if there exists another square matrix B of the same order n , such that $AB = BA = I$, then A is said to be invertible and B is called the inverse matrix of A .

Which of the following statements are not TRUE ?

- A. Inverse of a matrix, if it exists, is unique.
- B. For two invertible matrices of same order, say A and B , then $(AB)^{-1} = A^{-1}B^{-1}$
- C. For an invertible matrix A , $(A^{-1})^{-1} = A$
- D. For an invertible matrix A , $(A^T)^{-1} = A^T$

Choose the correct answer from the options given below:

- 1. A and C only
- 2. B and D only
- 3. A, C and D only
- 4. A and D only

Options :

2268953070009. 1

2268953070010. 2

2268953070011. 3

2268953070012. 4

Question Number : 381 Question Id : 226895791647 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

n कोटि के दिए गए वर्ग आव्यूह A के लिए, यदि उसी कोटि n का एक और वर्ग आव्यूह B इस प्रकार मौजूद है कि $AB = BA = I$, तो A को व्युत्क्रमणीय कहा जाता है और B को A का व्युत्क्रम आव्यूह कहा जाता है।

निम्नलिखित में से कौन से कथन सत्य नहीं है?

- A. एक आव्यूह का व्युत्क्रम, यदि यह मौजूद है, तो अद्वितीय है।
- B. एक ही क्रम के दो व्युत्क्रमणीय आव्यूहों के लिए, मान लीजिए A और B , तो $(AB)^{-1} = A^{-1}B^{-1}$
- C. एक व्युत्क्रमणीय आव्यूह A के लिए, $(A^{-1})^{-1} = A$
- D. एक व्युत्क्रमणीय आव्यूह A के लिए, $(A^T)^{-1} = A^T$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और C
- 2. केवल B और D
- 3. केवल A, C और D
- 4. केवल A और D

Options :

2268953070009. 1
2268953070010. 2
2268953070011. 3
2268953070012. 4

Question Number : 382 Question Id : 226895791648 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the **LIST-I** with **LIST-II**

LIST-I		LIST-II	
A.	If A is a square matrix of order 3 such that $ A = 3$, then $ \text{adj}(\text{adj } A) =$	I.	16
B.	If A is a non-singular matrix and $ A = \frac{1}{16}$, then $ A^{-1} =$	II.	512
C.	If A is a square matrix of order 4 such that $ A = 2$, then $ \text{adj}(\text{adj } A) =$	III.	9
D.	If A is a square matrix of order 2 such that $ A = 9$, then $ \text{adj}(\text{adj } A) =$	IV.	81

Choose the **correct** answer from the options given below:

1. A - IV, B - I, C - III, D - II
2. A - IV, B - I, C - II, D - III
3. A - I, B - IV, C - III, D - II
4. A - III, B - I, C - IV, D - II

Options :

2268953070013. 1
2268953070014. 2
2268953070015. 3
2268953070016. 4

Question Number : 382 Question Id : 226895791648 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	यदि A कोटि 3 का एक वर्ग आव्यूह इस प्रकार है कि $ A = 3$, तो $ \text{adj}(\text{adj } A) =$	I.	16
B.	यदि A एक व्युत्क्रमणीय आव्यूह है और $ A = \frac{1}{16}$, तो $ A^{-1} =$	II.	512
C.	यदि A कोटि 4 का एक वर्ग आव्यूह इस प्रकार है कि $ A = 2$, तो $ \text{adj}(\text{adj } A) =$	III.	9
D.	यदि A कोटि 2 का एक वर्ग आव्यूह इस प्रकार है कि $ A = 9$, तो $ \text{adj}(\text{adj } A) =$	IV.	81

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A - IV, B - I, C - III, D - II
2. A - IV, B - I, C - II, D - III
3. A - I, B - IV, C - III, D - II
4. A - III, B - I, C - IV, D - II

Options :

2268953070013. 1
 2268953070014. 2
 2268953070015. 3
 2268953070016. 4

Question Number : 383 Question Id : 226895791649 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Match the LIST-I with LIST-II

LIST-I		LIST-II	
A.	Row matrix	I.	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{bmatrix}$
B.	Scalar matrix	II.	$\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$
C.	Column matrix	III.	$[1 \ 2 \ 3]$
D.	Diagonal matrix	IV.	$\begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$

Choose the **correct** answer from the options given below:

1. A - III, B - II, C - I, D - IV
2. A - III, B - II, C - IV, D - I
3. A - III, B - IV, C - II, D - I
4. A - III, B - I, C - IV, D - II

Options :

2268953070017. 1
 2268953070018. 2
 2268953070019. 3
 2268953070020. 4

Question Number : 383 Question Id : 226895791649 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

सूची-I का सूची-II से मिलान करें

सूची-I		सूची-II	
A.	पंक्ति आव्यूह	I.	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{bmatrix}$
B.	अदिश आव्यूह	II.	$\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$
C.	स्तम्भ आव्यूह	III.	$[1 \ 2 \ 3]$
D.	विकर्ण आव्यूह	IV.	$\begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

1. A - III, B - II, C - I, D - IV
2. A - III, B - II, C - IV, D - I
3. A - III, B - IV, C - II, D - I
4. A - III, B - I, C - IV, D - II

Options :

2268953070017. 1
2268953070018. 2
2268953070019. 3
2268953070020. 4

Question Number : 384 Question Id : 226895791650 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

The sum of two skew-symmetric matrices of the same order is a

1. symmetric matrix
2. zero matrix
3. skew-symmetric matrix
4. diagonal matrix

Options :

2268953070021. 1
2268953070022. 2
2268953070023. 3
2268953070024. 4

Question Number : 384 Question Id : 226895791650 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

एक ही कोटि के दो विषम-सममित आव्यूहों का योग है -

1. सममित आव्यूह
2. शून्य आव्यूह
3. विषम-सममित आव्यूह
4. विकर्ण आव्यूह

Options :

- 2268953070021. 1
- 2268953070022. 2
- 2268953070023. 3
- 2268953070024. 4

Question Number : 385 Question Id : 226895791651 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Which of the following properties are not correct for three real numbers a , b and c ?

- A. If $a > b$ and $b > c$, then $a < c$
- B. If $a > b$, and $c < 0$, then $ac < bc$
- C. If $a > b$, and $c < 0$, then $a \div c < b \div c$
- D. If $a > b$ and $c > 0$, then $a \div c < b \div c$

Choose the correct answer from the options given below:

- 1. A and D only
- 2. B, C and D only
- 3. A and B only
- 4. B and C only

Options :

- 2268953070025. 1
- 2268953070026. 2
- 2268953070027. 3
- 2268953070028. 4

Question Number : 385 Question Id : 226895791651 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

तीन वास्तविक संख्याओं a , b और c के लिए, निम्नलिखित में से कौन से गुण सही नहीं हैं?

- A. यदि $a > b$ और $b > c$, तो $a < c$
- B. यदि $a > b$, और $c < 0$, तो $ac < bc$
- C. यदि $a > b$, और $c < 0$, तो $a \div c < b \div c$
- D. यदि $a > b$ और $c > 0$, तो $a \div c < b \div c$

नीचे दिए गए विकल्पों में से सही उत्तर चुनें।

- 1. केवल A और D
- 2. केवल B, C और D
- 3. केवल A और B
- 4. केवल B और C

Options :

- 2268953070025. 1
- 2268953070026. 2
- 2268953070027. 3
- 2268953070028. 4

Question Number : 386 Question Id : 226895791652 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A tin container contains 50 litres of cow milk. From this container 5 litres cow milk was taken out and replaced with soya milk. This process was repeated further two more times. How much cow milk is there in the container now?

1. 364.5 litres
2. 36.45 litres
3. 3.645 litres
4. 40 litres

Options :

2268953070029. 1
2268953070030. 2
2268953070031. 3
2268953070032. 4

Question Number : 386 Question Id : 226895791652 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

एक टिन के पात्र में 50 लीटर गाय का दूध है। इस पात्र से 5 लीटर गाय का दूध निकाला गया और उसके स्थान पर सोया दूध मिलाया गया। इस प्रक्रिया को दो बार और दोहराया गया। पात्र में अब गाय का कितना दूध है?

1. 364.5 लीटर
2. 36.45 लीटर
3. 3.645 लीटर
4. 40 लीटर

Options :

2268953070029. 1
2268953070030. 2
2268953070031. 3
2268953070032. 4

Question Number : 387 Question Id : 226895791653 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

If $53 \equiv y \pmod{6}$, then the possible values of y are:-

1. 64, 58, 52, 46, 40,
2. 70, 76, 81, 87, 93, 98,
3. 65, 59, 53, 47, 41,
4. 70, 76, 82, 88, 94, 97

Options :

2268953070033. 1
2268953070034. 2
2268953070035. 3
2268953070036. 4

Question Number : 387 Question Id : 226895791653 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

यदि $53 \equiv y \pmod{6}$, तो y के संभावित मान हैं :-

1. 64, 58, 52, 46, 40,
2. 70, 76, 81, 87, 93, 98,
3. 65, 59, 53, 47, 41,
4. 70, 76, 82, 88, 94, 97

Options :

2268953070033. 1
2268953070034. 2
2268953070035. 3
2268953070036. 4

Question Number : 388 Question Id : 226895791654 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

A man can row a boat in still water at the rate of 17 km/hr. He finds that it takes him thrice as long to row upstream of a river as to row downstream of the same river. The speed of the stream is,

1. 15 km/hr
2. 11.5 km/hr
3. 8.5 km/hr
4. 6 km/hr

Options :

2268953070037. 1
2268953070038. 2
2268953070039. 3
2268953070040. 4

Question Number : 388 Question Id : 226895791654 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

एक व्यक्ति स्थिर जल में 17 कि. मी./घंटा की गति से नाव चला सकता है। वह पाता है कि उसे नदी की धारा के प्रतिकूल नाव चलाने में उसी नदी की धारा के अनुकूल नाव चलाने की तुलना में तीन गुना अधिक समय लगता है। धारा की गति है,

1. 15 किमी/घंटा
2. 11.5 कि. मी./घंटा
3. 8.5 कि. मी./घंटा
4. 6 किमी/घंटा

Options :

2268953070037. 1
2268953070038. 2
2268953070039. 3
2268953070040. 4

Question Number : 389 Question Id : 226895791655 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

Two pipes A and B can fill a tank in 12 minutes and 15 minutes respectively while a third pipe C can empty the full tank in 20 minutes. All the three pipes are opened in the beginning but pipe C is closed 6 minutes before the tank is filled. In what time will the tank is full?

1. 15 minutes
2. 10 minutes
3. 7 minutes
4. 17 minutes

Options :

2268953070041. 1
2268953070042. 2
2268953070043. 3
2268953070044. 4

Question Number : 389 Question Id : 226895791655 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

दो पाइप A और B एक टैंक को क्रमशः 12 मिनट और 15 मिनट में भर सकते हैं जबकि एक तीसरा पाइप C 20 मिनट में पूरा टैंक खाली कर सकता है। तीनों पाइप शुरू में एकसाथ खोल दिए जाते हैं लेकिन पाइप C टैंक भरने से 6 मिनट पहले बंद कर दिया जाता है। टैंक कितने समय में भर जाएगा?

1. 15 मिनट
2. 10 मिनट
3. 7 मिनट
4. 17 मिनट

Options :

2268953070041. 1
2268953070042. 2
2268953070043. 3
2268953070044. 4

Question Number : 390 Question Id : 226895791656 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

In a 700 m race, A reaches the finishing point in 30 seconds & B reaches in 35 seconds. By how much distance A beats B?

1. 75 m
2. 50 m
3. 100 m
4. 200 m

Options :

2268953070045. 1
2268953070046. 2
2268953070047. 3
2268953070048. 4

Question Number : 390 Question Id : 226895791656 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Is Question Mandatory : No Single Line Question Option : No Option Orientation : Vertical

700 मीटर की दौड़ में A, 30 सेकंड में अंतिम बिंदु तक पहुँच जाता है और B 35 सेकंड में पहुँच जाता है। A कितनी दूरी से B को हरा देता है?

1. 75 मीटर
2. 50 मीटर
3. 100 मीटर
4. 200 मीटर

Options :

2268953070045. 1

2268953070046. 2

2268953070047. 3

2268953070048. 4