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60



Timer

Choose the correct option. (0.5 Marks)

This is an abelian group $\{ -3n : n \in \mathbb{Z} \}$ under

OPTIONS

division

multiplication

addition

subtraction



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SKIP

SUBMIT ANSWER

**Choose the correct option. (0.5 Marks)**

The value of $2 * 5$ where * is defined as Modulo 7 is?

OPTIONS

1

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2

2

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Timer**Choose the correct option. (0.5 Marks)**

What is the value of $(a^{-1} b)^{-1}$ is in the group (G, \cdot) ?

OPTIONS

$b^{-1} a$

all

ba

ab

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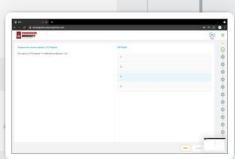
12

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SKIP

SUBMIT



**Choose the correct option. (0.5 Marks)**

Abelian group is also called....group

OPTIONS

closed

additive

commutative

open



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Timer

Choose the correct option. (0.5 Marks)

For abelian group G:

OPTIONS ab=ba for all a, b in G

all

closure property does not hold

identity element does not exist

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Timer

Choose the correct option. (0.5 Marks)

Property $a*b=b*a$ is called....

OPTIONS

associative

additive

distributive

commutative



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Timer

**Choose the correct option. (0.5 Marks)**(ba)⁻¹ = ____ If a, b are elements of a group G?**OPTIONS**b⁻¹ aa⁻¹ b⁻¹b⁻¹ a⁻¹a⁻¹ b

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**Choose the correct option. (0.5 Marks)**

Which of the following is true?

OPTIONS

Set of all matrices forms a group under multiplication

All of the mentioned

Set of all non-singular matrices forms a group under multiplication

Set of all rational negative numbers forms a group under multiplication

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**Choose the correct option. (0.5 Marks)**

Property $a*(b*c)=(a*b)*c$ is called.....

OPTIONS associative additive distributive commutative

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Skip**Submit**

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**Choose the correct option. (0.5 Marks)**

If a, b are positive integers, define $a * b = a$ where $ab \equiv a \pmod{7}$, with this $*$ operation, then inverse of 3 in group $G = \{1, 2, 3, 4, 5, 6\}$ is

OPTIONS

3

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60
Timer**Choose the correct option. (0.5 Marks)**

The value of the limit $(1-\cos x)/x$ as x tends to 0 is

OPTIONS 0

Infinity

Not defined

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**Choose the correct option. (0.5 Marks)**

Let G denote the set of all $n \times n$ non-singular matrices with rational numbers as entries. Then under multiplication G is a/an.... Group

OPTIONS

finite abelian

infinite nonabelian

finite nonabelian

infinite abelian

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Timer

Choose the correct option. (0.5 Marks)

If $172=14 \pmod{x}$ then x can take values:

OPTIONS

38

79

66

54

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Timer

Choose the correct option. (0.5 Marks)

Which properties can be held by a semigroup?

OPTIONS

closure and associative

All other options

inverse

identity

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Timer

Choose the correct option. (0.5 Marks)

A cyclic group can be generated by a/an element.

OPTIONS single multiplicative inverse non singular

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SKIP

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Timer

Choose the correct option. (0.5 Marks)

if G is a group such that $(ab)^2=a^2 b^2$ for all a, b in G then G is

OPTIONS

non abelian

none

all

abelian

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Timer

Choose the correct option. (0.5 Marks)

The set of all nth roots of unity under multiplication of complex numbers form a/an

OPTIONS

abelian group

all

semigroup

nonabelian

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Timer

Choose the correct option. (0.5 Marks)

If H & K are two distinct subgroups of a group G then which of the following is subgroup of G....

OPTIONS

HUK

None

both

H intersection K



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Timer

Choose the correct option. (0.5 Marks)

non empty set A is termed as an algebraic structure with respect to

OPTIONS

binary operation *

all

binary operation +

ternary operation?

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Timer

**Choose the correct option. (0.5 Marks)**

Matrix multiplication is

OPTIONS

commutative

all

additive

associative



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Timer

**PASSAGE**

Consider the Group $G = \{ +1, -1, +i, -i \}$ Where i is (iota) .

Read the following Statement and Choose the correct option. (1 Marks)

Is it a Group under the multiplication operation?

OPTIONS

Yes

No

Not Possible

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Skip**Submit**



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Timer

**PASSAGE**

Consider the Group $G = \{ +1, -1, +i, -i \}$ Where i is (iota) .

Read the following Statement and Choose the correct option. (1 Marks)

If it is a cyclic group then what is the order of its generator

OPTIONS

1

2

3

4



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Skip**Submit**



PASSAGE

Consider the Group $G = \{ +1, -1, +i, -i \}$ Where i is (iota) .

Read the following Statement and Choose the correct option. (1 Marks)

What is its identity Element ?

OPTIONS

1

-1

iota

None

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Timer

2

8

1

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1

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1

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**PASSAGE**

Consider the Group $G = \{ +1, -1, +i, -i \}$ Where i is (iota) .

Read the following Statement and Choose the correct option. (1 Marks)

If it is a cyclic group then inverse of positive iota is

OPTIONS

positive iota only

negative iota only

negative iota and positive iota both

None



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Skip**Submit**

**PASSAGE**

Consider the Group $G = \{ +1, -1, +i, -i \}$ Where i is (iota) .

Read the following Statement and Choose the correct option. (1 Marks)

If it is a cyclic group then its Generators are

OPTIONS

-1

1

negative iota only

negative iota and positive iota both



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Skip**Submit**

PASSAGE

Suppose $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$, then

Read the following Statement and Choose the correct option. (1 Marks)

The Value of constant " a " is

OPTIONS

1

0

0.75

0.5

None of mentioned



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SKIP

SUBMIT



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Timer

PASSAGE

Suppose $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$, then

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of numerator, as x tends to zero

OPTIONS

1 - a + b

1 - a - b

0

1 - b

None of mentioned

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SKIP

SUBMIT



**PASSAGE**

Suppose $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$, then

Read the following Statement and Choose the correct option. (1 Marks)

The Value of constant " b " is

OPTIONS

0

infinity

-0.5

-1

None of mentioned



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Skip**Submit**

**PASSAGE**

Suppose $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$, then

Read the following Statement and Choose the correct option. (1 Marks)

Which is true?

OPTIONS

Both are positive integers

Both are negative integers

✓ One positive and One Negative integer

Both are imaginary number

None of mentioned

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Timer

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Skip**Submit**

PASSAGE

Suppose $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$, then

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of denominator, as x tends to zero

OPTIONS

infinity

0



1

2

None of mentioned

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SKIP

SUBMIT



59
Timer

PASSAGE

Evaluate the limit

Choose the correct option.

$$\lim_{x \rightarrow 0} (\cosec x)^{\frac{1}{\log x}}$$

OPTIONS

1

1/e

-1/e

-1

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SKIP

SUBMIT





PASSAGE

Evaluate the limit

Choose the correct option.

$$\lim_{x \rightarrow 0} x^x$$

OPTIONS

0

-1

2

1

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SKIP

SUBMIT



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Timer

PASSAGE

Evaluate the limit

Choose the correct option.

$$\lim_{x \rightarrow \pi/2} (\sin x)^{\tan x}$$

OPTIONS

0

1

-1

none of the mentioned

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SKIP

SUBMIT



59
Timer

PASSAGE

Evaluate the limit

Choose the correct option.

$$\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{\sin x} \right)$$

OPTIONS

1

0

-1

none of the mentioned

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SKIP

SUBMIT



PASSAGE

Evaluate the limit

Choose the correct option.

$$\lim_{x \rightarrow 1} \left(\frac{x}{x-1} - \frac{1}{\log x} \right)$$

OPTIONS

0

1

-1/2

1/2

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SKIP

SUBMIT



**PASSAGE**

Consider $(Q, *)$ is set of rational numbers excluding 1 and $*$ is defined as $a*b=a+b-ab$, for all a,b belongs Q

Read the following Statement and Choose the correct option. (1 Marks)

Inverse element of 4 is

OPTIONS

✓ 4/3

4/5

5/4

3/4

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PASSAGE

Consider $(Q, *)$ is set of rational numbers excluding 1 and $*$ is defined as $a * b = a + b - ab$, for all a, b belongs Q

Read the following Statement and Choose the correct option. (1 Marks)

Identity element of Q is

OPTIONS

- 0
- 1
- 2
- 3

- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39

Skip**Submit**



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Timer

**PASSAGE**

Consider $(Q, *)$ is set of rational numbers excluding 1 and $*$ is defined as $a * b = a + b - ab$, for all a, b belongs Q

Read the following Statement and Choose the correct option. (1 Marks)

Q is

OPTIONS

Semigroup

Monoid

Group

All of the above



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SKIP**SUBMIT**

**PASSAGE**

Consider $(Q, *)$ is set of rational numbers excluding 1 and $*$ is defined as $a * b = a + b - ab$, for all a, b belongs Q

Read the following Statement and Choose the correct option. (1 Marks)

Inverse element of 3 is

OPTIONS

1

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

0

-3/2

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Skip**Submit**

**PASSAGE**

Consider $(Q, *)$ is set of rational numbers excluding 1 and $*$ is defined as $a*b=a+b-ab$, for all a,b belongs Q

Read the following Statement and Choose the correct option. (1 Marks)

Inverse element of 2 is

OPTIONS

1

2

3

4

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Skip**Submit**