GOVT. OF NCT OF DELHI
Delhi Subordinate Services Selection Board
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Participant ID	
Participant Name	
Test Date	10/07/2021
Test Time	9:00 AM - 12:00 PM
Subject	PGT-Maths (Female)

Section : **Mental Ability**

Q.1   Which answer figure will complete the pattern in the question figure?

Ans

✗ 1.

✗ 2.

✔ 3.

✗ 4.

Question ID : **97675511956**

walking in the south direction and walks a distance of 7 meters. Now he took a
walk 6m. Again he takes a left turn and walks 15m and reached a point P. In
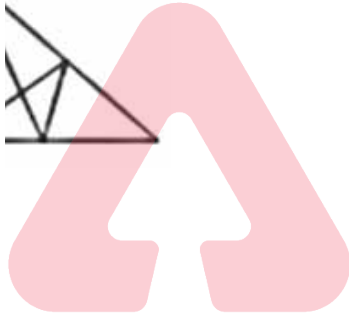on is Rahul from the initial point?

h-East

h-East

h-West

h-West

otion that is to unrelated (or odd one out amongst) the given set of words.

er

er

angles are there in the given figure?

...iagram that best represents the relationship among the given classes.

...Pen

(diagram options showing circles within squares)

...tion in which the words share the same relationship as that shared by the given

...atment

...e : Work

... Bricks

...t : lawyer

...ge : Job

...n responses, find the missing term in the series.

...X , G15W , ?

.../

...G

...J

ng question, select the related letter cluster from the given alternatives.

: : ACZO : ?

i

V

V

ing number in the series given below.

n responses, find the missing letter cluster in the series.

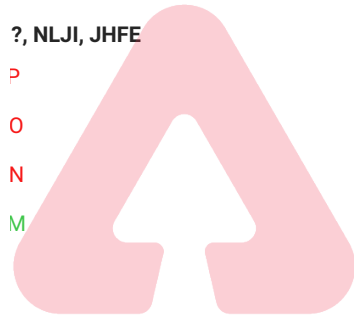?, NLJI, JHFE

P

O

N

M

de language, 'MAPED' is coded as '64' and 'RECK' is coded as '41'. How will
ed as in that language?

n below are given two statements followed by two conclusion. You have to
given statements to be true even if they seem to be at variance with the
own facts and then decide which of the given conclusions logically follows
given statements, disregarding commonly known facts.

res.
are tyres.

are clutchs.
hs are cars.

ly conclusion II follows

her conclusion I or II follows

ly conclusion I follows

ither conclusion I nor II follows

Question ID : **97675511948**

e photograph, Mamta said that the woman in this photo is the wife of the son
wife's only daughter. How is the Mamta related to that woman?

her

er-in-law

er

Question ID : **97675511946**

ore than Rahul. Yamuna scored as much as Divya. Lokita scored less than
scored more than Yamuna. Manju scored less than Divya. Who scored the

ju

a

l

una

Question ID : **97675511945**

n given, relations between different elements are shown in the statements.
ents are followed by two conclusions. Find out which of the given conclusions
given statements and select the correct alternative from the given choices.

P < Q ≥ R = S ≥ L

II is true

r I or II is true

ɪns should be interchanged to make the given equation correct?

− 1 = 14

] ×

] +

] +

] −

ɔr image of the following figure.

figure:

iagram that best represents the relationship among the given classes.

ronavirus, Diabetes
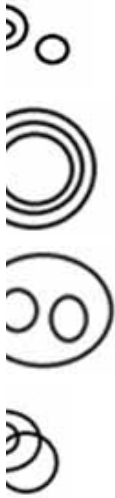
re given in the following question. All figures have something in common
ind the odd figure out.
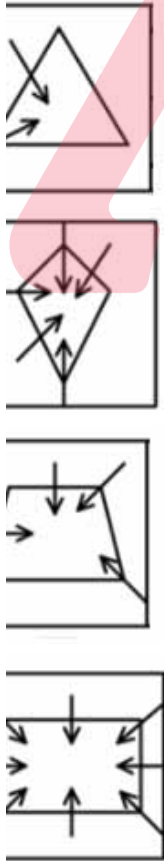
n below, there are two statements followed by four conclusions given in
nave to take the given statements to be true even if they seem to be at
commonly known facts and then decide which of the given conclusion
w(s) from the given statements.

s are diamonds.
are crystals.

iamonds are emeralds

e emeralds are diamonds

e crystals are emeralds

rystals are emeralds

e first initiative of Mahatma Gandhi as a nationalist in India?

la

andar

edabad

nparan

following is the largest **District** in India as per area?

1bai

e

jalore

1chh

e following years was the Indian Policy Resolution adopted by the Parliament?

following individuals composed the National Song "Vande Mataram"?

ajendra Prasad

ndranath Tagore

Mangeshkar

kimchandra Chatterjee

nt Nyiragongo volcano has erupted. In which of the following countries is it

occo

agascar

ocratic Republic of Congo

ria

following commission was appointed by the Central Government on Union-
s in 1983?

lvad Commission

kar Commission

Commission

aria Commission

st ever Indian recipient of a Nobel Prize?

ndranath Tagore

aman

rtya Sen

er Teresa

following individuals is the author of the book "Anandamath"?

kimchandra Chatterji

ajendra Prasad

shi Premchand

ndranath Tagore

ding capacity is the highest in which of the following soils?

k Soil

Soil

ey Soil

Soil

Question ID : **97675511967**

of India was built to commemorate the visit of which of the following Kings?

George V

William IV

Edward VII

George I

Question ID : **97675511961**

following mahajanapadas was Vaishali the capital of?

ti

adha

chala

Question ID : **97675511970**

he following laid the foundation of Golden Temple?

Arjan Sahib

at Mian Mir ji

Amardas Sahib

Ramdas Sahib

Question ID : **97675511960**

following refractive defects of vision is also known as Far-sightedness?

pia

ermetropia

byopia

ract

Question ID : **97675511964**

ad won the first Cricket World Cup in the year 1975?

stan

ralia

Indies

Question ID : **97675511975**

following organizations developed the COVID-19 vaccine Covishield?

erna

n Medical Association

at Biotech

m Institute of India

Question ID : **97675511977**

cientific Name of National Bird of India?

ock

Cokoo

Cristatus

hera Tigris

Question ID : **97675511965**

ate the process for the removal of the Vice-President of India?

ident

e of People

cil of Ministers

cil of States

Question ID : **97675511972**

judge who presided over Mahatma Gandhi's hearing during the Non-
Movement in the year 1922?

ce James Dewar

ce William McDonell

ce CN Broomfield

ce Henry Davison

Question ID : **97675511969**

following Tennis player won the ATP Rome 2021 (Paris Open)?

k Djokovic

el Nadal

Murray

er Federar

-Officio Chairperson of the NITI Aayog?

President

e Minister

e Minister

ident

Ability

st fraction of the following fractions.

hose edge is 8 cm are joined together to form a single cuboid. What is the
new cuboid so formed?

50 cm^3

50 cm^3

4 cm^3

50 cm^3

ht 2 items at the same price. He sold one item at 20 percent profit and another
rcent profit. What is the overall percentage profit he made?

ercent

percent

percent

percent

= 243 and $5^{(q-p)} = 5$, then find the value of $(p \times q)$?

owing table carefully to answer the given question.

nployees in different departments of five organisations

nisation → oartment ↓	A	B	C	D	E
HR	145	80	120	180	160
Finance	120	75	100	220	140
Marketing	150	90	115	200	190
IT	225	110	160	280	220
ninistration	180	120	130	110	130

tio between the number of employees from Finance and Marketing
together of organization B and these two departments together of
O respectively?

3

1

3

...e in the place of question mark (?) in the given expression?

$$\times 35 + 45^2 - 15^2) = ?^2$$

...hes his college in 2 hours by his bike at an average speed of 30 km/hr, then
...e his average speed by his car to reach the college half an hour earlier?

...m/hr

...m/h

...m/hr

...m/hr

...shirt is decreased by 25 percent and hence the sale is increased by 20
... will be the effect on the total revenue of the shop?

...ercent decrease

...ercent increase

...rcent increase

...ffect

...3600 is divided into two principals. One principal is invested at 8 percent p.a.
...d the other is invested at 9 percent p.a. for 3 years. If the total simple interest
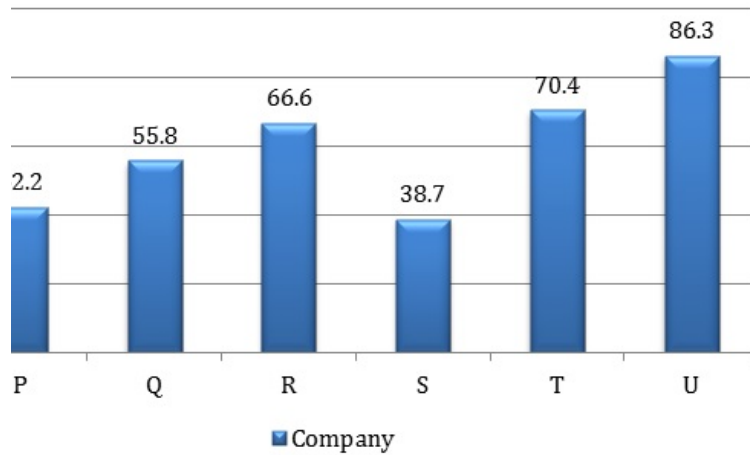...s. 741, then find the larger principal.

...100

...400

...800

...500

bar graph shows the sales (in Rs. crore) of six companies in 2012-13.

mate percentage of the total sales of the given six companies together was the
any T?

ercent

percent

percent

5 percent

ill come in place of question mark (?) in the following question?

$$\sqrt[3]{27} - \sqrt[3]{343} = ?$$

numbers is 33. If average of first 15 numbers is 28 and average of last 25
, then what is the average of remaining five numbers?

...umbers is 3 times their HCF. The sum of the LCM and the HCF is 44. If one
... then the other number is:

...owing table carefully to answer the given question.

...mployees in different departments of five organisations

...nisation → / ...partment ↓	A	B	C	D	E
HR	145	80	120	180	160
Finance	120	75	100	220	140
Marketing	150	90	115	200	190
IT	225	110	160	280	220
...ninistration	180	120	130	110	130

...mployees in IT department of organization C is what per cent of the total
...mployees in organization C in all the departments together?
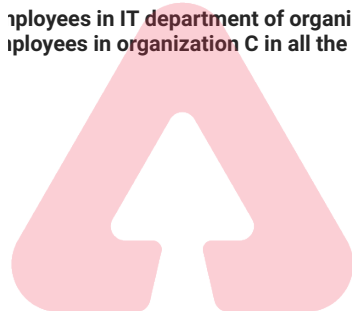
...ours to type 24 pages. Neelam takes 9 hours to type 45 pages. In how many
...ll type 351 pages together?

...ours

...ours

...ours

...ours

...peed of boat in upstream to speed of boat in downstream is 2: 3. The time
... to cover 45 km in downstream is t hours, then in t hours how many kilometers
...ed by boat in upstream?

...m

...m

... took the examination in a school, and 13 percent of the students got
... the number of boys who got distinction is 2 more than the number of girls who
... n. If 20 percent of the girls got distinction, find the total number of boys in the

... ains tin, copper and zinc in the ratio of 4:6:5. Find the quantity of copper to be
... kg of this alloy to form a new alloy in which the ratio of the above elements in
... er is 4:4:5?

... g

... g

... g

... he diagonal of a kite is 16 cm and its area is 96 cm^2, what is the length of the
... l of the kite?

... m

... m

... m

... m

... e three partners in a business who shared profit in the ratio of 2:5:3. If they had
... months, 6 months and 9 months respectively, what is the ratio of their

... 9

...

... 4

... glish

...st appropriate meaning of the given idiom/ phrase.

...usic

...e offered warm hospitality

...e greeted rudely

...njoy a music programme

...ear the consequences

...rd which means the same as the group of words given.

...that combines media of communication:

...itasking

...imillionaire

...iple

...imedia

...ongly spelt word.

...met

...deur

...eful

...antee

...ng question, four sentences are given out of which three sentences are
...y incorrect while one is correct. Find out which sentence is grammatically
...elect the appropriate option.

...gation on this portal should be such that the complete law-making chain, right
...nt act to the subordinate legislations, is clearly visible.

...entral Acts and subordinate legislations passed by the Centre, include rules,
...nd circulars, should be made available on this portal.

...data uploaded on the portal should available in machine readable PDF formats.

...portal should allow uploaded of state government Acts, regulations and
...egislations as well.

...st appropriate antonym of the given word.

...y

...st appropriate option to substitute the underlined segment in the given
...here is no need to substitute it, select 'No substitution required'.

...rends in agricultural production, fish harvest, bio-energy production and
...terials have increased, in response to <u>populational growth, rising demand and
...evelopment.</u>

...lation growth, rising demand and technological development.

...ubstitution required.

...lated growth, rising demand and technological development.

...lation growing, rising demand and technological development.

Question ID : **97675512002**

...e following sentences in their correct order to form a meaningful paragraph.

...o many reasons to include veggies into your diet.
...ories, nutrient-dense, versatile and tasty.
...se the term healthy, vegetable is the first word that comes to our mind.
... plate with healthy and nutritious food items is an effective way to lose weight.

...S

...

...Q

...R

Question ID : **97675512005**

...st appropriate synonym of the given word.

...E

...air

...nce

...le

...sity

Question ID : **97675512007**

...st appropriate option to fill in the blank.

...l aware that to _____ hygiene, we have to keep ourselves and our
...clean.

...erve

...w

...tain

...ure

Question ID : **97675512004**

st appropriate meaning of the given idiom/ phrase.

finger

gs always get worse before they get better

xperience unpleasant consequences

llent health

od condition espc. Getting a lot of money

st appropriate option to fill in the blank.

_____ damp grass, breaking a leg, cracking a bone in the other and hurting

e following sentences in their correct order to form a meaningful paragraph.

ment of Maharashtra has come up with guidelines for organising of Ganesh

rs need to have more than 20 people, then they need to take permission from
ict Collector.
n time, no more than 20 people will be allowed to gather in the sanctum within
ere the Ganesh idol is kept for worshipping.
t Collector will then verify the size of the pandal and will give permission if
social distancing will be maintained with 20 plus people.

Q

S

S

R

egment in the sentence which contains the grammatical error from the given

e the examination faster and answered one more question he would have

had wrote the examination faster

answered one more question

ould have scored better

rror

rectly spelt word

unner

runner

runner

runner

st appropriate option to substitute the underlined segment in the given
here is no need to substitute it, select 'No substitution required'.

rom the two events <u>will be counted</u> for "ranking of competing nations" at the
Games, the CGF said on Monday.

e count

ubstitution required

count

ounted

on:

wing passage and answer the questions below.

of Rome, Marullus and Flavius, break up a gathering of citizens who want to
us Caesar's triumphant return from war. The victory is marked by public games
ar's protégé, Mark Antony, takes part. On his way to the arena, Caesar is stopped
who warns him that he should 'Beware the Ides [15th] of March.'

rs, Caius Cassius and Marcus Brutus, are suspicious of Caesar's reactions to
holds in the Republic. They fear he will accept offers to become Emperor. He
ing a lot of power recently and people treat him like a god. Cassius, a
neral himself, is jealous of Caesar. Brutus has a more balanced view of the
on. The conspirator Casca enters and tells Brutus of a ceremony held by the
ey offered Caesar a crown three times, and he refused it every time. But the
re still wary of his aspirations.

a, and their allies plant false documents to manipulate Brutus to join their cause
esar. After doing so, they visit Brutus at night in his home to persuade him of
here they plan Caesar's death. Brutus is troubled but refuses to confide in his
Portia. On 15 March, Caesar's wife, Calpurnia, urges him not to go to the Senate.
isionary dreams and fears the portents of the overnight storms.

ertheless persuaded by flattery to go to the Capitol. At the Capitol, he is stabbed
pirator in turn. As Brutus gives the final blow, Caesar utters the famous phrase:

No : 16

onspirators plant false documents?

anipulate Portia to join their cause to remove Brutus

anipulate Cassius to join their cause to remove Brutus

anipulate Caesar to join their cause to remove Brutus

anipulate Brutus to join their cause to remove Caesar

wing passage and answer the questions below.

of Rome, Marullus and Flavius, break up a gathering of citizens who want to
us Caesar's triumphant return from war. The victory is marked by public games
ar's protégé, Mark Antony, takes part. On his way to the arena, Caesar is stopped
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esar. After doing so, they visit Brutus at night in his home to persuade him of
here they plan Caesar's death. Brutus is troubled but refuses to confide in his
Portia. On 15 March, Caesar's wife, Calpurnia, urges him not to go to the Senate.
isionary dreams and fears the portents of the overnight storms.

ertheless persuaded by flattery to go to the Capitol. At the Capitol, he is stabbed
pirator in turn. As Brutus gives the final blow, Caesar utters the famous phrase:

No : 17

the given passage, Portia has been portrayed as-

is' wife

ius' daughter

a's mother

urnia's sister

Question ID : **97675512017**

wing passage and answer the questions below.

of Rome, Marullus and Flavius, break up a gathering of citizens who want to
us Caesar's triumphant return from war. The victory is marked by public games
ar's protégé, Mark Antony, takes part. On his way to the arena, Caesar is stopped
who warns him that he should 'Beware the Ides [15th] of March.'

rs, Caius Cassius and Marcus Brutus, are suspicious of Caesar's reactions to
holds in the Republic. They fear he will accept offers to become Emperor. He
ing a lot of power recently and people treat him like a god. Cassius, a
neral himself, is jealous of Caesar. Brutus has a more balanced view of the
on. The conspirator Casca enters and tells Brutus of a ceremony held by the
ey offered Caesar a crown three times, and he refused it every time. But the
re still wary of his aspirations.

a, and their allies plant false documents to manipulate Brutus to join their cause
esar. After doing so, they visit Brutus at night in his home to persuade him of
here they plan Caesar's death. Brutus is troubled but refuses to confide in his
Portia. On 15 March, Caesar's wife, Calpurnia, urges him not to go to the Senate.
isionary dreams and fears the portents of the overnight storms.

ertheless persuaded by flattery to go to the Capitol. At the Capitol, he is stabbed
irator in turn. As Brutus gives the final blow, Caesar utters the famous phrase:

No : 18

his line "He has been gaining a lot of power recently and people treat him like a
according to the given passage:

s Caesar

s Cassius

urnia

us Brutus

Question ID : **97675512015**

on:

wing passage and answer the questions below.

of Rome, Marullus and Flavius, break up a gathering of citizens who want to
us Caesar's triumphant return from war. The victory is marked by public games
ar's protégé, Mark Antony, takes part. On his way to the arena, Caesar is stopped
who warns him that he should 'Beware the Ides [15th] of March.'

rs, Caius Cassius and Marcus Brutus, are suspicious of Caesar's reactions to
holds in the Republic. They fear he will accept offers to become Emperor. He
ng a lot of power recently and people treat him like a god. Cassius, a
neral himself, is jealous of Caesar. Brutus has a more balanced view of the
on. The conspirator Casca enters and tells Brutus of a ceremony held by the
ey offered Caesar a crown three times, and he refused it every time. But the
re still wary of his aspirations.

a, and their allies plant false documents to manipulate Brutus to join their cause
esar. After doing so, they visit Brutus at night in his home to persuade him of
here they plan Caesar's death. Brutus is troubled but refuses to confide in his
Portia. On 15 March, Caesar's wife, Calpurnia, urges him not to go to the Senate.
isionary dreams and fears the portents of the overnight storms.

ertheless persuaded by flattery to go to the Capitol. At the Capitol, he is stabbed
pirator in turn. As Brutus gives the final blow, Caesar utters the famous phrase:

No : 19

ollowing statements is incorrect according to the given passage?

ar is nevertheless persuaded by flattery to go to the Capitol.

offered Caesar a crown three times, and he refused it every time.

ar utters the famous phrase: Et tu, Brute?

e Capitol, Cassius is stabbed by each conspirator in turn.

Question ID : **97675512019**

...wing passage and answer the questions below.

...of Rome, Marullus and Flavius, break up a gathering of citizens who want to ...us Caesar's triumphant return from war. The victory is marked by public games ...ar's protégé, Mark Antony, takes part. On his way to the arena, Caesar is stopped ...who warns him that he should 'Beware the Ides [15th] of March.'

...rs, Caius Cassius and Marcus Brutus, are suspicious of Caesar's reactions to ...holds in the Republic. They fear he will accept offers to become Emperor. He ...ing a lot of power recently and people treat him like a god. Cassius, a ...neral himself, is jealous of Caesar. Brutus has a more balanced view of the ...on. The conspirator Casca enters and tells Brutus of a ceremony held by the ...ey offered Caesar a crown three times, and he refused it every time. But the ...re still wary of his aspirations.

...a, and their allies plant false documents to manipulate Brutus to join their cause ...esar. After doing so, they visit Brutus at night in his home to persuade him of ...here they plan Caesar's death. Brutus is troubled but refuses to confide in his ...Portia. On 15 March, Caesar's wife, Calpurnia, urges him not to go to the Senate. ...isionary dreams and fears the portents of the overnight storms.

...ertheless persuaded by flattery to go to the Capitol. At the Capitol, he is stabbed ...irator in turn. As Brutus gives the final blow, Caesar utters the famous phrase:

No : 20

...ar's wife, Calpurnia, urge him not to go to the Senate?

...use she was told to do so by the two senators Brutus and Cassius

...use an stranger told her to be killed by some senators

...use she was not much concerned about Caesar's prestige

...use she had a visionary dream of something bad to happen

Question ID : **97675512016**

...ndi

...य में निम्न में से किस चिन्ह का प्रयोग नहीं किया गया है?

... या विशेषण बनती हैं, उन्हें "नामधातु क्रिया" कहते हैं।

...राम चिन्ह

...वेराम चिन्ह

...ग चिन्ह

...ं चिन्ह

Question ID : **97675512034**

...से कौन-सा शब्द "निष्ठा" का पर्यायवाची नहीं है?

...

ा के लिए एक शब्द का चयन कीजिए-

ान से दूसरे स्थान पर न ले जाया जा सके-

ील

पन्न

‍

से तत्सम शब्द का चयन कीजिए-

वा

श्रया

से अशुद्ध वर्तनी वाले वाक्य का चयन कीजिए-

का व्यवहारिक ज्ञान अपेक्षित है।

गे कक्षा में कितने छात्र हैं।

ञामा आध्यात्मिक धर्म-गुरू हैं।

य के लिए स्वच्छ जल आवश्यक है।

से कौन-सा शब्द सदैव बहुवचन में प्रयुक्त होता है?

ा

ा

से कौन-सा शब्द तत्पुरुष समास का उदाहरण नहीं है?

ा

ध

ग्रह

ष्ट

से उत्तमपुरुष वाचक सर्वनाम का चयन कीजिए-

से कौन-सा वाक्य विस्मयादिबोधक वाक्य है?

कितनी ठंडी रात है।

ह कार्य नहीं करेंगे।

ीवन में उन्नति करें।

अब जा चुका होगा।

से मुहावरा "अंडे का शहजादा" का क्या अर्थ है?

अनुभवी होना।

ी मनुष्य।

परिश्रम करने वाला।

वहीन व्यक्ति।

से दिया गया वाक्य किस काल का उदाहरण है?

न रहे थे।

न भूतकाल

य वर्तमानकाल

भूतकाल

मद् भूतकाल

से लोकोक्ति "अपना रख पराया चख" का क्या अर्थ है?

त चीज का विशेष मूल्य नहीं होता।

सफलता मिले, उसी का यश फैले।

ा छोड़ कर थोडे में ही संतुष्ट होना।

वस्तु की रक्षा, दूसरे की वस्तु का उपभोग।

से "आराधना" शब्द का विशेषण कौन-सा है?

ा

चित

ा

य

से अशुद्ध वर्तनी वाले शब्द का चयन कीजिए-

ल

ाग

ावश्यक

येत

से "अवाक्" का विलोम शब्द कौन-सा है?

ह

ह

ा

on:

श का ध्यानपूर्वक अध्ययन कर प्रश्नों के उत्तर दीजिए-

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No : 16

से उपर्युक्त गद्यांश का उचित शीर्षक कौन-सा है?

देह: चिरस्थायी एवं सनातनी शक्ति

और कर्म

मूर्ति गाँधी

ा महत्व

श का ध्यानपूर्वक अध्ययन कर प्रश्नों के उत्तर दीजिए-

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No : 17

के अनुसार, गाँधीजी की महानता का रहस्य क्या है?

ारीबों की सहायता करते थे।

इते थे वही करते थे।

इते थे वह, कभी नही करते थे।

ारे व्यक्ति कहते थे, वही करते थे।

Question ID : **97675512037**

श का ध्यानपूर्वक अध्ययन कर प्रश्नों के उत्तर दीजिए-

ं शक्तियाँ हैं- वाणी और कर्म। कुछ लोग वचन से संसार को राह दिखाते हैं और कुछ लोग कर्म से। शब्द
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No : 18

के संदर्भ में, प्राय: सज्जन व्यक्ति संसार को _____राह दिखाते है।

कार्यक्षमता से।

गरीबो की मदद करने की भावना से।

बुद्धिक्षमता से।

कर्म एवं वाणी से।

Question ID : **97675512039**

श का ध्यानपूर्वक अध्ययन कर प्रश्नों के उत्तर दीजिए-

ं शक्तियाँ हैं- वाणी और कर्म। कुछ लोग वचन से संसार को राह दिखाते हैं और कुछ लोग कर्म से। शब्द
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ाे कौन-सा शब्द "सार्थकता" का पर्यायवाची नही है?

पूर्ति

ता

गेता

क

Question ID : **97675512040**

श का ध्यानपूर्वक अध्ययन कर प्रश्नों के उत्तर दीजिए-

ं शक्तियाँ हैं- वाणी और कर्म। कुछ लोग वचन से संसार को राह दिखाते हैं और कुछ लोग कर्म से। शब्द
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ाे "चिरस्थायी" से क्या अभिप्राय है?

ाीघ्र नष्ट होने वाला।

ग दिमाग स्थिर न हो।

क रहनेवाला या टिकाऊ।

ठोर परिश्रम न करता हो।

Question ID : **97675512038**
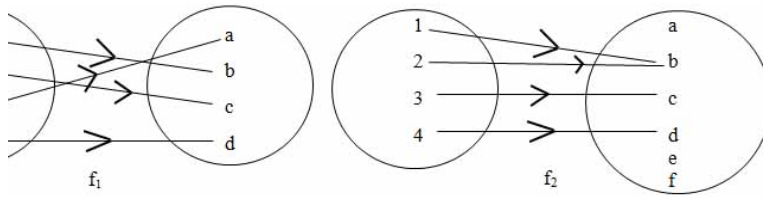
following is correct if the above image represents the functions f_1 and f_2?

is one-one, f_2 is one-one

is onto, f_2 is one-one

is one-one, f_2 is onto

s onto, f_2 is onto

$\rightarrow$ R defined by $f(x) = x^2 - 3x + 2$, then $f(f(x)) =$

$+ 6x^3 - 13x^2 + 3x$

$- 6x^3 + 10x^2 - 3x$

$+ 6x^3 + 10x^2 + 3x$

$- 6x^3 - 13x^2 + 3x$

---

for all $n \in \mathbf{N}$, then $\lim\limits_{n\to\infty} U_n^{1/n}$ is equal to-

$\begin{matrix} 1 \\ \infty \end{matrix} \dfrac{U_n + 1}{U_n}$

$\begin{matrix} 1 \\ \infty \end{matrix} \dfrac{U_{n-1}}{U_n}$

$\begin{matrix} 1 \\ \infty \end{matrix} \dfrac{U_n}{U_{n-1}}$

$\begin{matrix} 1 \\ \infty \end{matrix} \dfrac{U_n}{U_{n+1}}$

d g: R→ R are given by f(x) = cos x, and g(x) = 3x², then -

: fog

: be determined

nd fog both do not exist

: fog

y convergent series is a series which is -

lutely Convergent

ergent but not absolutely

convergent but absolutely convergent

lutely divergent

R is defined as R= {(a, b) : a ≤ b²} is _____.

sitive

exive

metric

an Equivalence Relation

following is incorrect?

y sequence has a monotone subsequence

y sequence has a limit point

y bounded sequence has a convergent subsequence

y sequence has a countable number of terms

integer function f: R→ R given by f(x) = [x], (where [x] denotes the greatest
___.

One, onto

One, but not onto

er One-One nor onto

, but not One-One

y operation * on **N** is defined as a * b = a³ + b³, then −

commutative but not associative

both associated and commutative

either commutative nor associative

associative but not commutative

---

the following tests does not give absolute convergence of a series?

Test

parison Test

Test

nitz's test

---

ain of convergence for $x - \frac{x}{2} + \frac{x}{3} - \frac{x}{4} + \ldots \ldots$ is

)

)

]

]

---

the following series is divergent?

in $1/n$

$1/n^3$

in $1/n^2$

$/\sqrt{n} \tan 1/n^2$

---

s $\sum (-1)^{n+1} \frac{1}{n}$ is-

ounded

ditionally Convergent

$\sum b_n^2$ are convergent series of positive real numbers then, $\sum \sqrt{a_n \cdot b_n}$

t be convergent

or may not be convergent

vergent

be convergent

ence $\{x_n\}$, where $x_n = 1 + \frac{1}{3} + \frac{1}{5} + \ldots \ldots + \frac{1}{2n-1}$ is-

Cauchy sequence

llatory

otonically decreasing

vergent

and p = {(a,a) ,(b,b) ,(c,c), (d,d),(a,b),(b,a),(b,c),(c,b)}, then p is-

xive and symmetric

valence

metric and transitive

xive and transitive

en by f(x) = 4x + 3, then inverse of f is

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

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

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

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

e defined as f(x) = 8x. Choose the correct answer:

either one-one nor onto

ne-one onto

...ce $\{a^2_n\}$ converges to a^2, then the sequence $\{a_n\}$ converges to-

...ot convergent

...ī

...d g : B → C are one−one, then gof : A → C is-

...one

...her One-One, nor onto

...one and onto both

...the following is true?

$: (B \cup C) = (A \times B) \cap (A \times C)$

$: (B \cap C) = (A \times B) \cup (A \times C)$

$- B) \times C = (A \times C) - (B \times C)$

$: (B - C) = (A \times C) - (A \times B)$

...following is not true?

...z) = u + i.v is an analytic function, then u and v are both harmonic functions

...unction does not satisfy Cauchy − Riemann equations, then it is not analytic

...nd v are both harmonic functions then f (z) = u + i.v is analytic

...z) = u + i.v is an analytic function, then u (x, y) = c_1 and v (x, y) = c_2 are

$x^3 - 3xy^2$ of an analytic function $f(z) = u + i.v$, then -

rmonic conjugate and $v(x,y) = 3x^2y - y^3 + c$, c is any constant

rmonic conjugate and $v(x,y) = 3x^2y - y^3 + c$, c is real constant

rmonic conjugate and $v(x, y) = y^2 - 3x^2y + c$, c is real constant

rmonic conjugate and $v(x,y) = y^3 - 3x^2y + c$, c is any constant

, then how many elements are there in P(A)?

lement

n-empty sets A, B, C are having relation $A \cap B = A \cap C$ and $A \cup B = A$

=C

mplete metric space then no non-empty open sub-set of X is of first category.
m states this?

chy's Theorem

ano- Weierstrass Theorem

Baire category Theorem

mediate Value Theorem

$= \dfrac{1}{z}, z \neq 0,$ then

...isfies Cauchy – Riemann equation, but not analytic for all $z \neq 0$

...ontinuous only but nowhere differentiable

...es not satisfy Cauchy – Riemann equation for all $z \neq 0$

...nalytic for all $z \neq 0$

Question ID : **97675512065**

...nber and $f = r^n (\cos n\theta + i.\sin n\theta)$, then

...nalytic everywhere except possibly at $r = 0$

...nalytic nowhere

...nalytic everywhere except possibly at $\theta = 0$

...nalytic everywhere

Question ID : **97675512061**

...are two non-empty sets such that $n(X) = 17, n(Y) = 23$ and $n(X \cup Y) = 38$,
...Y) is -

Question ID : **97675512078**

...s of convergence of the power series $\sum_{n=0}^{\infty} \dfrac{(n!)^2}{2n!} z^n$ is

Question ID : **97675512066**

...of the integral $\displaystyle\int_c \dfrac{z^2 e^{2z}}{z^2 + 1} dz,$ where c is a circle $|z| = 2$ is -

...sin2

following represents De Morgan's Law?

$\cap$ B = A' $\cup$ B'

' $\cup$ B') = A $\cap$ B'

$\cup$ B') = A' $\cap$ B

$\cup$ B)' = A' $\cap$ B'

400 players, 250 play football and 200 play cricket, then how many people play
es?

$(x, y) + i.v (x, y)$ be analytic everywhere and u - v = (x - y).(x² + 4xy + y²),

$) = -i.z^3 + c$, c is arbitrary constant

$z) = i.z^3 + c$, where c is arbitrary constant

$) = z^2 (1 + i) + c$, c is arbitrary constant

$) = z (1 - i.z) + c$, c is arbitrary constant

C)] $\cap$ [A' $\cap$ (B' $\cap$ C')] is equal to -

iiversal set

$\cap$ (B' $\cap$ C')

ll set

$\cup$ (B $\cup$ C)

of the integral $\int_C \frac{ze^2}{(z-1)^3} dz$, where c is a circle $|z| = 2$ is-

c

$i\ c$

$i.c$

c

$z|^2$, then

ifferentiable only at zero

ifferentiable everywhere except 0

ifferentiable everywhere

ifferentiable nowhere

$x \in \mathbf{Z}\}$

$1: x \in \mathbf{Z}\}$

$2: x \in \mathbf{Z}\}$ then –

Z_2, Z_3 form a partition of $\mathbf{Z}$

$\cap Z_2 \cap Z_3 = \mathbf{Z}$

Z_2, Z_3 form a group under multiplication

Z_2, Z_3 form a partition of $\mathbf{R}$

,3,4,5,6,7,8,9}

4,}

3}, then (A ∪ B)' is –

5,8}

5,7,9}

$\frac{|z|}{Re(z)}$, if Re (z) $\neq$ 0

0 , if Re (z) = 0 , then –

ot continuous nowhere

ot continuous at 0

ot continuous only at 0

ot continuous everywhere

y + n = 0 be the normal to the circle $x^2 + y^2 + a^2$ then –

2

the point (-3, 8, 4) in the plane 6x - 3y - 2z + 1 = 0, is -

-2)

9)

0)

, 3)

quation of the cone which passes through the co-ordinate axes is-

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

y + fyz + gzx = 0

+ yz – zx = 0

$^2 + b^2 + cz^2 + 2hxy + 2fyz + 2gzx = 0$

f revolution of the straight line $z^2 = y$, x = 0 about the y axis is-

$+ z^2 = y$

$+ z^2 = x$

$= x^2 + y^2$

$= x^2 + z^2$

---

nals at the point $(ct_1 , \frac{c}{t_1})$ on the hyperbola $xy = c^2$ meets it

e point $(ct_2 , \frac{c}{t_2})$ then-

$t_1^3 = -1$

$t_1 = -1$

$t_2 = -1$

$t_1 = -1$

---

e sphere that passes through the points (0, 0, 0), (a, 0, 0), (0, b, 0), (0, 0, c) is -

$a)^2 + (y-b)^2 + (z-c)^2 = \frac{1}{2} \sqrt{(a^2 + b^2 + c^2)}$

$-\frac{a}{2})^2 + (y - \frac{b}{2})^2 + (z - \frac{c}{2})^2 = \frac{1}{2} (a^2 + b^2 + c^2)$

$+ y^2 + z^2 = a^2 + b^2 + c^2$

$-\frac{a}{2})^2 + (y - \frac{b}{2})^2 + (z - \frac{c}{2})^2 = \frac{1}{4} (a^2 + b^2 + c^2)$

---

on $ax^2 + by^2 + cz^2 + 2ux + 2vy + 2wz + d = 0$, represents a cone

$+ bv^2 + cw^2 = d$

$u + acv + abw = d$

$+c).u^2 + (a+c).v^2 + (a+b).w^2 = d$

dimension, the equation $x^2 = 2.\lambda.y, \lambda \neq 0$ represents –

liptic cylinder

inder

erbolic cylinder

abolic cylinder

---

e diameters of the hyperbola are such that -

meet the curve at real point

meet the curve at imaginary points

meet the curve at infinity

meets the curve at real point and another meets at imaginary point

---

es through a point (1, -2, 1) and is perpendicular of two planes 2x - 2y + z = 0
: = 4. The distance of the plane from the point (1, 2, 2) is -

$\sqrt{2}$

2

---

ordinate of a centre of the circle r = 4.cos θ + 3.sin θ is-

$\tan^{-1} \frac{2}{3}$)

$\tan^{-1} \frac{3}{4}$)

$\tan^{-1} \frac{3}{4}$)

$\tan^{-1} \frac{2}{3}$)

ween the lines represented by $x^2 - 2xy - y^2 + 2x + 3y - 1 = 0$, is -

$^{-1}$ (1/4)

$^{-1}$ (1/2)

gents to the ellipse $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} = 1$ makes intercepts of lengths h

he axis, then –

$+ \dfrac{k^2}{b^2} = 1$

$- \dfrac{k^2}{b^2} = 1$

$- \dfrac{b^2}{k^2} = 1$

$+ \dfrac{b^2}{k^2} = 1$

cal chord of a parabola and d be the distance from vertex, then-

$\dfrac{1}{d^2}$

$\dfrac{1}{d}$

d^2

d

:ity and semi – latus rectum of the curve $\frac{1}{r} = 8 + 5.\cos\theta$, are respectively –

8

$\frac{1}{8}$

$\frac{5}{3}$

8

d $S_2 = 0$ are the equations of a sphere, then $S_1 + \lambda.S_2 = 0$ represents–

here passing through the circle of intersection of the spheres

here passing through the plane of intersection

ne

cle

xy – ax – by + ab = 0 represents -

r of straight lines

erbola

cle

lipse

of the plane through the point (1, 2, -3) and normal to the straight line joining
, 3, 4) and (5, 2, -1) is-

?y - 5z - 9 = 0

/ - 5z - 19 = 0

/ + 5z + 19 = 0

/ - 3z - 17 = 0

bola or ellipse how many normals can be drawn?

t distance between the z– axis and the line $\frac{x-2}{1} = \frac{y-1}{2} = \frac{z+1}{2}$ is-

5

$\propto + \cot \propto = 2 + \sqrt{5}$, then value of $\cos \propto$ is-

be a necessary and sufficient condition for the curve v = constant to be a
the general surface?

$-FE_1 + 2EF_1 = 0$

$+FE_1 - 2EF_1 = 0$

$+FE_1 + 2EF_1 = 0$

$-FE_1 - 2EF_1 = 0$

of surface ds is given by-

$$= H^2 \sqrt{du^2 + dv^2}$$

$$= H \sqrt{du^2 + dv^2}$$

$$= H.dudv$$

$$= H^2 dudv$$

$\theta + \cos\theta$ and $Y = \cot\theta - \cos\theta$, then find the value of $\dfrac{X^2 - Y^2}{\sqrt{XY}}$.

$+ \cos^{-1}\left(\dfrac{q}{b}\right) = \alpha$, then $\dfrac{p^2}{a^2} + k \cos\alpha, + \dfrac{q^2}{b^2} = \sin^2\alpha$ where k is equal

$\dfrac{pq}{ab}$

$\dfrac{pq}{b}$

$\dfrac{pq}{ab}$

---

e of $\sqrt{3}\sin10°$ is equal to –

$0° - \cos70°$

$0° + \cos70°$

$)° + \sin40°$

$)° + \sin50°$

ot $\left(7\frac{1}{2}\right)^{\circ}$ is –

$\sqrt{3}+\sqrt{5}+\sqrt{6}$

$2+\sqrt{3}+\sqrt{5}+\sqrt{6}$

$\sqrt{2}+\sqrt{3}+\sqrt{6}$

$\sqrt{2}+\sqrt{3}+\sqrt{6}$

' is -

$\sqrt{5}$

$\sqrt{5}$

-1

-1

e xyz = 4, what shall be the equation of the tangent plane at the point (1, 2, 2)?

- z + 1 = 0

y + z = 2

y + z = 6

y + z − 1 = 0

s (A-30), where 3A and (A-30) are acute angles, find the value of (sin 2A + cos

+1

+1

-1

symptotic lines is given by-

$du^2 - 2M\,dudv + Ndv^2 = 0$

$u^2 - Ndv^2 = 0$

$dudv = 0$

$u^2 + 2M\,dudv + Ndv^2 = 0$

be a helix which of the following should be the most necessary and sufficient

ratio of the curvature and the torsion is constant

torsion is constant

product of the curvature and the torsion constant

curvature is constant

the appropriate matrix of the coefficient of Frenet–Serret formula?

$\begin{bmatrix} & k & 0 \\ k & 0 & \tau \\ & -\tau & 0 \end{bmatrix}$

$\begin{bmatrix} -k & 0 \\ 0 & -\tau \\ \tau & 0 \end{bmatrix}$

$\begin{bmatrix} \tau & 0 \\ 0 & k \\ -k & 0 \end{bmatrix}$

$\begin{bmatrix} -\tau & 0 \\ 0 & -k \\ k & 0 \end{bmatrix}$

surface, x = ucosv, y = usinv, z = cv. The first fundamental coefficients are

$0, u^2 + c^2$

$sv, sinv, u^2 + 1$

$0, \sqrt{u^2 + c^2}$

$0, u^2 + c^2$

value of $\dfrac{\cot^3 2A + 3\cot 2A \operatorname{cosec}^2 2A}{\operatorname{cosec}^3 2A(\cos^6 A - \sin^6 A)}$

the first quadrant and $2\sqrt{3}\sin A\cos A = \cos^2 A - \sin^2 A$, then the value
(A/2)sin(A/2) is:

point on a surface, then P will be a singularity of the surface if –

$\times\ r_2 \neq 0$

$= r_2$

$= r_2 = 0$

$\times\ r_2 = 0$

alue of: $\dfrac{\sec 8A\,(\tan 10A + \tan 6A)}{4(\tan 10A - \tan 6A)}$

A

4A

A

A

...oloid of revolution $z = x^2 + y^2$, the asymptotic lines is given by -

$du^2 + v^2 dv^2 = 0$

$...^2 + u^2 dv^2 = 0$

$...^2 - dv^2 = 0$

$...^2 + dv^2 = 0$

...elation between radius of spherical-curvature R and the radius of curvature ρ
...' and σ (the reciprocal of the torsion).

$= \sigma^2 + (\rho' \rho)^2$

$= \rho'^2 + (\rho \sigma)^2$

$= \sigma^2 + (\frac{p^1}{\sigma})^2$

$= \rho^2 + (\rho' \sigma)^2$

...sum of coefficient of the expansion $(1 + x - 3x^2)^{4165}$

...binomial theorem $(2^{3n} - 7n - 1)$ is divisible by which of the following numbers?

' of a continuous time signal $x(t) = e^{-A|t|}$, A>0 is _____

$\dfrac{2A}{+\omega^2)}$

$\dfrac{}{2)}$

$\dfrac{A}{+\omega^2)}$

$\dfrac{A}{2)}$

ntinuous function, then $\displaystyle\lim_{n\to\infty}\sum_{r=0}^{n-1}\dfrac{1}{n}f\left(\dfrac{r}{n}\right)$ can be expressed as -

$f(x)\,dx$

$xf(x)\,dx$

$\dfrac{1}{x}f\left(\dfrac{1}{x}\right)dx$

$f\left(\dfrac{1}{x}\right)dx$

ing integrator given by $y(t) = \int_{-\infty}^{\infty} x(t)dt$:

uces an abounded output for every causal bounded input

uces a bounded output for every anticausal bounded input

no finite zeros in its double-sided Laplace transform Y(s).

no finite singularities in its double sided Laplace transform Y(s)

(t) is given by $x(t) = \begin{cases} 1, & \dfrac{-T}{4} < t \le \dfrac{3T}{4} \\ -1, & \dfrac{3T}{4} < t \le \dfrac{7T}{4} \\ & -x(t+T) \end{cases}$

...ong the following gives the fundamental Fourier terms of x(t)?

$\sin\left(\dfrac{\pi t}{T} - \dfrac{\pi}{4}\right)$

$\sin\left(\dfrac{\pi t}{T} + \dfrac{\pi}{4}\right)$

$\cos\left(\dfrac{\pi t}{T} + \dfrac{\pi}{4}\right)$

$\cos\left(\dfrac{\pi t}{T} - \dfrac{\pi}{4}\right)$

...following is true?

...y integrable function is monotone increasing

...y integrable function is continuous

...y monotone function is integrable

...y discontinuous function is integrable

...remainder when 2^{252} is divided by 210?

...est coefficient of $(x+1)^{20}$ is:

...)!
...!

...)!
...)²

...)!

he number $(6 + 4\sqrt{3})$

$\sqrt{2} +1)^2$

$(\sqrt{3} -1)^2$

$\sqrt{3} +1)^2$

$(\sqrt{3} +1)^2$

l valued function of a real variable with period T. Its trigonometric
es expansion contains no terms of frequency $w = 2\pi \left(\frac{2k}{T}\right)$, k = 1, 2,
terms are present. Then y (t) satisfies the equation:

$) = y(t - T) = y(t - T/2)$

$) = y(T - t) = -y(t - T/2)$

$) = y(t +T) = y(t + T/2)$

$) = y(t - T) = -y(t - T/2)$

$= 2$, then the value of $\displaystyle\sum_{r=0}^{n} {}^{n}C_{r} a^{r} b^{n-r}$

1

nt of x^{-2} of this expansion $\left(2x^3 - \dfrac{7}{x}\right)^8$

e term in the expansion of $\left(x^2 + \frac{1}{x^2} + 2\right)^n$ is:

n!)

$\overline{)!}^2$

$\dfrac{)!}{)^2}$

$\overline{)!}^2$

$\dfrac{5..(2n+1)}{n!} 2^n$

---

following is true?

$^{00} > 10000$

00000000

1

1 and 2

ner 1 nor 2

2

---

der when $75^{75^{75}}$ is dividied by 37:

---

uous time system described by the equation $y(t) = x(t^2)$ comes under
y of −

causal, linear and time-variant

al, non-linear and time-varying

al, linear and time-varying

causal, non-linear and time-variant

ier series for the function f(x) = sin²(x) is:

· 0.5 sin 2x

· 0.5 cos 2x

0.5 sin 2x

· 0.5 cos 2x

= 500, then the value of xˣ is-

characterized by the differential equation $\frac{d^2y(t)}{dt^2} - \frac{dy}{dt} - 2y(t) = x(t)$ is –

linear and stable

ar and unstable

linear and unstable

ar and stable

)

e of statement P(n): 1.6 + 2.9 + 3.12 +……. + n(3n + 3)

· 1) (n + 2)

1) (n + 2) (n + 3)

· 6)

3) (n + 6)

ical ascending method the value of 1+2+3+.......... + n is _____.

-1) (n+2)
  2

n+1)
  2

ı+1)
  3

-1) (n+2)
  3

---

value of n, the statement $P(n) : n! < (\frac{n+1}{2})^n$, is true? Where n is a whole number.

---

following improper integral is convergent?

$\frac{1}{\log x}\,dx$

$\frac{1}{\sqrt{x}(x+1)}\,dx$

$\frac{\sqrt{x}}{\log x}\,dx$

$\frac{1}{1-\cos x}\,dx$

---

m of the statement is $\left(1 + \frac{1}{1}\right)\left(1 + \frac{1}{2}\right)\left(1 + \frac{1}{3}\right).....\left(1 + \frac{1}{n}\right)$ is-

-1)²

$+ \frac{1}{n}\bigr)$

ral $\int_0^1 \dfrac{x^3 \cos 3x}{2+x^2}$ lies between?

and $\dfrac{1}{2}$

and 1

and $\dfrac{3}{2}$

and $\dfrac{1}{3}$

ment $(x^n - y^n)$ is divisible by -

$+y)$

$^2 + y^2)$

$y)$

$+y)(x-y)$

f the following is true?

$] \to R$ be defined by

$-1)^{r-1}$, when $\dfrac{1}{r+1} < x \le \dfrac{1}{r}$, $r = 1, 2, 3, \dots \dots$

$\qquad 0$, $\qquad\qquad$ when $x = 0$

ot integrable in [0, 1]

ntegrable on [0, 1], but f in bounded

ntegrable on [0, 1], but f in unbounded

ntegrable on [0, 1]

ent is true?

$< \left(\frac{n+1}{2}\right)^n$

$> \left(\frac{n+1}{2}\right)^n$

$< \left(\frac{n}{2}\right)^n$

$> (n)^n$

$^{/2} x^n \sin x\ dx,\ n>1,$ then $I_n + n(n-1)I_{n-2}$ is equal to :

$\frac{\pi}{2}\Big)^{n-1}$

$\frac{\pi}{2}\Big)^{n}$

$\Big)^{n-1}$

$\Big)$

.2! + 3.3! + n.n! = (n + 1)! − 1, then P(n) statement is true -

> 1

> 4

ll negative values of n

ll values of n

an^{n}x dx , (n>1). $I_4 + I_6 = a\tan^5 x + bx^5 + c,$ where c is a constant of

, then the order pair (a, b) is equal to-

$\frac{1}{5}, -1\Big)$

$, \frac{4}{5}\Big)$

$, 0\Big)$

the inequality is true?

$< {}^1\!\!\int_0 e^{x^2}\, dx < 1$

$< {}^1\!\!\int_0 e^{x^2}\, dx < \dfrac{1}{2}$

$< {}^1\!\!\int_0 e^{x^2}\, dx < 1$

$< {}^1\!\!\int_0 e^{x^2}\, dx < e$

following improper integral is convergent?

$\dfrac{1}{x^2}\, dx$

$\dfrac{1}{\sqrt{x}}\, dx$

$\dfrac{1}{x^3}\, dx$

$\dfrac{1}{x^{3/2}}\, dx$

of the differential equation $(2D+1)2y = 0$ is -

$= (A + B)\, e^{-x/2}$

$= (A + Bx)\, e^{-x/2}$

$= (A + Bx)\, e^{-x}$

$= Ae^{-x/2}$

ion of the differential equation $x^2 \dfrac{d^2y}{dx^2} - 3x\dfrac{dy}{dx} + 4y = 0$ is:

$= (c_1 + c_2 \log x)\, x$

$= (c_1 + c_2 \log x)\, e^x$

ement $(5^{2n} - 1)$ is always divisible by-

nent $1.2 + 2.2^2 + 3.2^2 + \ldots\ldots n.2^2$ can be written in the form of –

1)$2^n + 2$

-1)$2^n + 2$

1)$2^{n+1} + 2$

-1)$2^{n+1} + 2$

$2^{n+2})$ is divisible by

$|x|$, then for any real numbers a and b with a < b ,the value
dx equals -

$a^3 - b^3$)

$a^3 + b^3$)

$|b|^3 - |a|^3$)

$|b^3 - a^3|$)

f onto homomorphism from Z_8 to Z_4 is-

a solution of the differential equation $x^2 y'' + xy' - y = 0$, then
linearly independent solution of the above equation is −

t - α), then the differential equation satisfying the relation is -

$$= -m^2x$$

$$= 1 - x^2$$

$$= m^2x$$

$$\frac{x}{2} = -\alpha^2x$$

: $^{2n-1}P_n = 3 : 5$, then what is the value of n?

group of a group G and K be a normal subgroup of a group G, then -

a normal subgroup of HK ∩ KH

a normal subgroup of HK

a normal subgroup of KH

not a normal subgroup of HK

(G',*) be two groups and f: G → G' be a homomorphism, then f (G)

cyclic subgroup of G' is commutative

cyclic subgroup of G' if G may not be cyclic

cyclic subgroup of G'

t a cyclic subgroup of G' if G is cyclic

group such that $a^2 = c$ for all $a \in G$, then G is:

– abelian group

ian Group

$\sqrt{3x} + c_2 \sin\sqrt{3x}) + c_3 e^{2x}$ is the general solution of-

$\frac{}{2} + 4y = 0$

$- 2 \frac{d^2y}{dx^2} + \frac{dy}{dx} - 2y = 0$

$\frac{}{3} + x \frac{dx}{dy} - 3x = 0$

$\frac{}{2} + 8y = 0$

(G', *) be two finite groups and Φ: G → G' be an epimorphism then -

is not a divisor of O(G')

, 2, 3, 4, 5 and 6 how many numbers between 3000 and 4000 can be made if
d be repeated?

e group G is simple if and only if -

= n, n is a positive integer

= n, n is an even integer

= n, n is an odd integer

= n, n is a prime integer

:ular integral of $(D^2 + a^2)y = \sin ax \ (D \equiv \frac{d}{dx})$ is −

$\frac{x}{2a} - \cos ax$

$\cos ax$

$\frac{a}{2} - \cos ax$

$\cos ax$

(G',*) be two groups and Φ: G → G' be a epimorphism. Then Φ is an
if and only if-

Φ ⊂ {eG'}

Φ ⊂ {eG}

Φ = { eG'}

Φ = { eG}

following is not true?

G be a group in which $(ab)^3 = a^3 b^3$ for all a, b ∈ G, then
= {x^3: x ∈ G} is normal subgroup of G

nutative subgroup of a group is normal subgroup of the group

I is normal subgroup of a finite group G, then [G:H] = 2.

G is non – commutative group of order 2p, p is prime and
re exists at least one element a of order p, then <a> is normal in G.

independent solutions of the differential equation $4\frac{d^2y}{dx^2} + 4\frac{dy}{dx} + 5y = 0$

^{2} cos x and $e^{x/2}$ sin x

^{2}cos x and $e^{-x/2}$sin x

$^{/2}$ cos x and $e^{x/2}$ sin x

$^{/2}$cos x and $e^{-x/2}$ sin x

r solution of differential equation $\frac{d^2y}{dx^2} - \frac{dy}{dx} - 2y = \cos x + 3 \sin x$ is-

x

<

<

ous mapping of compact metric space X into a metric space Y then:

niformly continuous

ot continuous

a jump at x = θ

step function

l solution of the differential equation $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + y = e^x \cos x$ is-

$+ c_2 x)e^{-x} + \frac{e^x}{25}(4 \sin x + 3 \cos x)$

$+ c_2 x)e^{-x} + \frac{e^x}{4}(4 \sin x + 3 \cos x)$

$+ c_2 x)e^{-x} + \frac{e^x}{9}(4 \sin x - 3 \cos x)$

$+ c_2 x + \sin x)e^{-x}$

on of the differential equation is $\frac{d^2y}{dx^2} - 3\frac{dy}{dx} + 2y = e^{3x}$ is-

$= c_1 e^x + c_2 e^{-2x} + \frac{1}{2}e^{3x}$

$= c_1 e^{-x} + c_2 e^{2x} + \frac{1}{2}e^{-3x}$

$= c_1 e^x + c_2 e^{-2x} + \frac{1}{2}e^{-3x}$

$= c_1 e^x + c_2 e^{2x} + \frac{1}{2}e^{3x}$

nit vector which is paralleled to the addition

tors $\vec{r_1} = 3\vec{i} - 2\vec{j}$ and $\vec{r_2} = -4\vec{i} + 4\vec{j}$

$(-\vec{i} - 2\vec{j})$

$5(\vec{i} + 2\vec{j})$
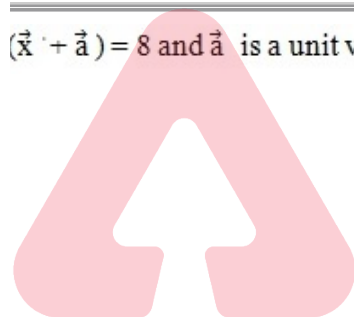
$5(-\vec{i} + 2\vec{j})$

$(\vec{i} - 2\vec{j})$

up of 11 cricketers. 4 can bat and 7 can bowl. In how many ways can a group
s be selected if the group has at least one batsman and bowler?

$(\vec{x} + \vec{a}) = 8$ and $\vec{a}$ is a unit vector, then $\vec{x}$ will have value of:

f(x) = x Sin (1/x), if x = 0 and f(0) = 1 has discontinuity at _____.

ıns can be repeated, then in how many ways a line can be made from six '+'
r '-' signs?

and (-√3, √3) are vectors of:

celes triangle

ateral triangle

near points

t angle triangle

6 and $^nC_r = 56$, then what is the value of n and r?

, r = 2

, r = 3

4, r = 4

, r = 8

f Matrix $S = \left\{ \begin{pmatrix} 2a & 0 \\ 0 & 2b \end{pmatrix} : a, b \in \mathbb{Z} \right\}$ contains-

ors of zero without unity

ors of zero with unity

ivisors of zero with unity

ivisors of zero without unity

on-zero vector of magnitude 'a' and λ is
scalar, then $\lambda\vec{a}$ is unit vector if —

$\dfrac{1}{|\lambda|}$

$|\lambda|$

= 1

= −1

2 then what is the value of m?

$^{25}C_{2r+1}$, then what is the value of $^rC_5$?

vals in which the function f given by strictly increasing $f(x) = 2xx^2 - 3x$:

∞

$\dfrac{3}{4}$

, ∞

$) , \dfrac{3}{4}$

s A $(-2\vec{i}+3\vec{j}+5\vec{k})$, B $(\vec{i}+2\vec{j}+3\vec{k})$, C $(7\vec{i}-\vec{k})$ are-

near

ed a equilateral triangle

ed a Right angle triangle

Collinear

tors $p\vec{i}+2\vec{j}$ and $3\vec{i} - 3\vec{j}$ are aligned, then what is the value of p?

of the distinct permutation of letters in JUXTAPOSED do the four vowels come

)60

)00

...-vectors of point A, B, C and D are $3\vec{i} - \vec{j}$, $2\vec{i} + 2\vec{j}$, $-2\vec{i} - 3\vec{j}$, $-4\vec{i} + 3\vec{j}$,

...such that AB || CD, then what is the ratio of their modulus?

...ber of diagonals of a polygon whose number of sides is "n".

...)(n - 5)/3

...3)/2

...1)/2

...)(n - 2)/3

... $\times Z_2$, +,.) forms a ring of module 2 such that (a, b) + (c, d)

...+ d) and (a, b) (c, d) = (a.c, b.d) for (a, b), (c, d) $\in Z_2 \times Z_2$ then-

...a commutative ring with unity and it contains divisor of zero

...a commutative ring with unity and it contains no divisor of zero

...a commutative ring without unity and it contains no divisor of zero

...a non commutative ring with unity and it contains divisor of zero

---

...sition-vectors of A and B are $8\vec{i} + 3\vec{j}$ and $2\vec{i} - 5\vec{j}$,

...rmine the direction of AB vector-

...^{1} (-3/5)

...^{1} (3/5)

...(-5/3)

...(5/3)

...s a commutative ring with unity, then the polynomial ring R |x| is-

...n commutative ring without unity

...mmutative ring with unity

...mmutative ring without unity

$\} \rightarrow \mathbf{R}$ defined by $f(x) = \frac{x+1}{x+2}$, $\forall\, x \in \mathbf{R} - \{-2\}$ is an example of –

onal Function

um Function

ulus Function

nomial Function

---

the following is TRUE?

sequence {n cos ¹⁄n} has a convergent sequence

y sequence that has a convergent subsequence is a Cauchy sequence

sequence {sin n} has a convergent subsequence

y sequence that has a convergent sequence is a bounded sequence

---

the following ring of matrix is not a field?

$\begin{pmatrix} a & b \\ -b & a \end{pmatrix}: \ a, b \in R\}$

$\begin{pmatrix} a & b \\ b & a \end{pmatrix}: \ a, b \in Q\}$

$\begin{pmatrix} a & b \\ b & a \end{pmatrix}: \ a, b \in R\}$

$\begin{pmatrix} a & b \\ 2b & a \end{pmatrix}: \ a, b \in Q\}$

---

e a convergent series of positive terms and let $\varSigma V_n$

gent series of positive terms. Then

sequence $\{V_n\}$ diverges to ∞

h the sequences $\{U_n\}$ and $\{V_n\}$ are convergent

sequence $\{U_n\}$ is convergent and the sequence $\{V_n\}$ is divergent

sequence $\{U_n\}$ converges to 0

the matrix $A = \begin{pmatrix} 40 & -29 & -11 \\ -18 & 30 & -12 \\ 26 & 24 & -50 \end{pmatrix}$ has a certain eigen value

ch of the following must be eigen value of A?

0

0

λ

$-\lambda$

ral $\int_0^\infty \text{Sin} x \, dx -$

s and is equal to 0

s and is equal to 1

s and is equal to -1

; not exist

$\sum_{n=1}^\infty \left[\frac{1}{\sqrt{n}} + \frac{(-1)^n}{n^{3/2}} \right]$ is -

latory

gent

ded

ergent

e a sequence of real number such that $\lim_{n \to \infty} U_n$ exists, then

$\lim_{n \to \infty} U_{2n}$ does not exist but $\lim_{n \to \infty} U_{2n+1}$ exists

h $\lim_{n \to \infty} U_{2n}$ and $\lim_{n \to \infty} U_{2n+1}$ do not exist

$\lim_{n \to \infty} U_{2n}$ exists but $\lim_{n \to \infty} U_{2n+1}$ does not exist

:h $\lim_{n \to \infty} U_{2n}$ and $\lim_{n \to \infty} U_{2n+1}$ exist

) be the set of all 2x2 matrices, then $(M_2(\mathbf{R}), +, .)$ is -

nmutative ring without zero divisors

n commutative ring with zero divisors

nmutative ring with zero divisors

n commutative ring without zero divisors

ral $\displaystyle\int_0^\infty \frac{|sin\,x|}{x}\,dx$

t convergent

solutely convergent

vergent

nvergent but not absolutely

units in a ring R with unity forms _____.

tegral domain

d

g with unity

up with respect to multiplication

$\dfrac{U_n}{n} = 1 \neq 0$, then the sequence $\{U_n\}$

or may not be bounded

t bounded

nvergent

unded

sidue classes (mod m) is an integral domain if m is:

e

tural number

teger

ional number

ce $\left\{ P + \frac{(-1)^n q}{n} \right\}$ is-

latory

gent

ounded

ded

nce $\{2 + (-1)^n\}$ has-

tly one constant subsequence

tly two constant subsequence

onstant subsequence

tly three constant subsequence

+, .) is an integral domain if and only if:

ositive integer

odd prime

odd

rime

$\left. \cdots \frac{3}{2} \cdot \frac{4}{3} \cdots\cdots\cdots \frac{n+1}{n} \right)^{1/n}$ is equal to

f $\lim\limits_{n \to \infty} \frac{1}{n}\left[\left(\frac{1}{2}\right)^n + \left(\frac{1}{2}\right)\left(\frac{1}{2}\right)^{n-1} + \cdots + \left(\frac{1}{n}\right)\left(\frac{1}{2}\right) \right]$ is

following ring is an integral domain?

Z, +, .)

.)

+, .)

+, .)

zero n x n real matrix with n ≥ 2. Which of the following statements is true?

$(M) = 0 \Rightarrow \text{rank}(M) = 0$

$k(M) = n \Rightarrow \det(M) \neq 1$

$k(M) = 1 \Rightarrow \det(M) \neq 0$

$(M) = 1 \Rightarrow \text{rank}(M) \neq 0$

Methodology

following subject/s Mathematics is a part of?

graphy

graphy, Economics and Commerce

omics

merce

"Mathematics is the language in which God has written the universe"?

hal Stone

bhatta

eo Galilei

and Russell

the following is not a problem-solving strategy in mathematics?

learning

ing

and error

ng backwards

the following statements is correct?

of two prime numbers is always a prime number

e is no even prime numbers

he smallest prime number

mposite number cannot be odd

llowing invented the letter system?

· Bhatta- I

argupta

magupta

anta

hematics was coined by-

ayoreans

amasciour

abactus

anorean

earning is an alternative to

petitive models

hing models

oteaching

on plan

bjectives have been divided into -

domains

domains

e domains

domains

rue about lesson plan?

ves from haphazard teaching

developed by students

ps in orderly delivery to content

velops confidence in teacher

following is not related to early number concept?

surement

sification

ervation

inclusion

the following is not a mathematical process?

orization

nation

surement

alization

is underlying team teaching is

gle teacher cannot control the class

best teachers in schools are shared by more students.

hers are not competent

hers feel bore while marking alone

**ibiting difficulty in sorting, recognising pattern, orienting numbers and shape,
nd measurement may have dyscalculia with difficulty in**

al motor coordination

uage processing

al motor skills

al memory

Piaget when the child is at formal operational stage, it is appropriate to

netry

handling

bers

and proportion

ematics teacher is one who -

urages convergent thinking

ins helpful, insightful and explain things well

only a lot of problems to practice with

ws the same method always

tics classroom emphasis is placed on

ematical content process and reasoning

ematical content

ematical algorithm and process

lem solving strategies

of students in cooperative learning groups are

o Fifteen

to ten

e to four

to Six

following is/ are not the principle of Curriculum-construction of mathematics?

rity of theory with practice

ciple of unit

ld not be child-centric

rinciple of preparation for life

following is /are true regarding the aims of teaching mathematics?
a good ability to solve problem
the ability to make decision
a good understanding of numbers and number system

1 and 3

and 3

1 and 2

2 and 3

Question ID : **97675512223**

nstructional objectives are best described in terms of the terminal behaviour
n the learners"?

it Samele

rt Miller's

rt Wadra

rt Mager

Question ID : **97675512229**