Question # 8 of 10 (Start time: 01:25:12 PM, 13 August 2021)

If $f(z)$ is complex valued function and C and $-C$ be the contours with same geometrical representation but opposite in direction. Then

Select the correct option

Reload Mat

- $\int_C f(-z)dz$
- $\int_C f(z)dz$
- $-\int_C f(z)dz$
- $-\int_C f(z)dz$

Let z_0 and z_1 be two points in simply connected domain D
and f be an analytic complex valued function in D and C be contour by joining z_0 and z_1 then

ect the correct option

Reload Math Equations

- $\int_{z_0}^{z_1} f(s)ds = F(z_1) - F(z_0)$
- $\int_{z_0}^{z_1} f(s)ds = F(z_0) + F(z_0)$
- $\int_{z_0}^{z_1} f(s)ds = F(z_0) - F(z_1)$

Consider function $f(z) = \exp(z^2 + 1)$ be differentiable and its derivatives are continuous in domain D then $\int_C f(z)dz = \ldots\ldots$ wh

Select the correct option

○	1
○	0 ✓
○	-1
○	2

Total Marks: 1

If function f is an analytic function in simple connected domain where $C_R(z_0) = \{z(t) : |z - z_0| = R\}, 0 \leqslant t \leqslant 2\pi$ and R be the radius of circle, then

correct option

Reload Math Equations

$$f(z_0) = \frac{1}{\pi} \int_0^{2\pi} f(z_0 + Re^{it})dt$$

$$f(z_0) = \frac{1}{2\pi} \int_0^{2\pi} f(z_0 + Re^{it})dt$$

$$f(z_0) = \frac{1}{4\pi} \int_0^{2\pi} f(z_0 + Re^{it})dt$$

$$f(z_0) = \frac{1}{2\pi i} \int_0^{2\pi} f(z_0 + Re^{it})dt$$

Find value of Green's theorem if P=x2 and Q=y2 for region x=1 and y=2 from origin.

Total

Select the correct option

- 0
- 2 ✓
- 1
- -2

Total Marks: 1

Evaluate the integral $\int_C \frac{e^z}{z^4} dz$ where the contour $C: |z| = 1$

the correct option

Reload Math Equations

$\frac{2\pi i}{3}$

$\frac{4\pi i}{3}$

$\frac{8\pi i}{3}$

$\frac{\pi i}{3}$

Evaluate the integral $\int_C f(z)dz$ where $C : z(t) = e^{it}$ for $0 \leqslant t \leqslant \pi$ and $f(z) = 1/z^2$

rect option

Reload Math Equations

$1 - e^{i\pi}$

$1 + e^{-i\pi}$

$1 + e^{i\pi}$

$1 - e^{-i\pi}$

Question # 4 of 10 (Start time: 01:19:45 PM, 13 August 2021)

A curve C is said to be a contour if it is constructed by joining finitely many smooth curves end to end.

Select the correct option

- False
- True

Evaluate $\int_C f(z)dz$ where $C : z(t) = (x + iy)\,t$ for $a \leqslant t \leqslant b$ and $f(z) = z$

option

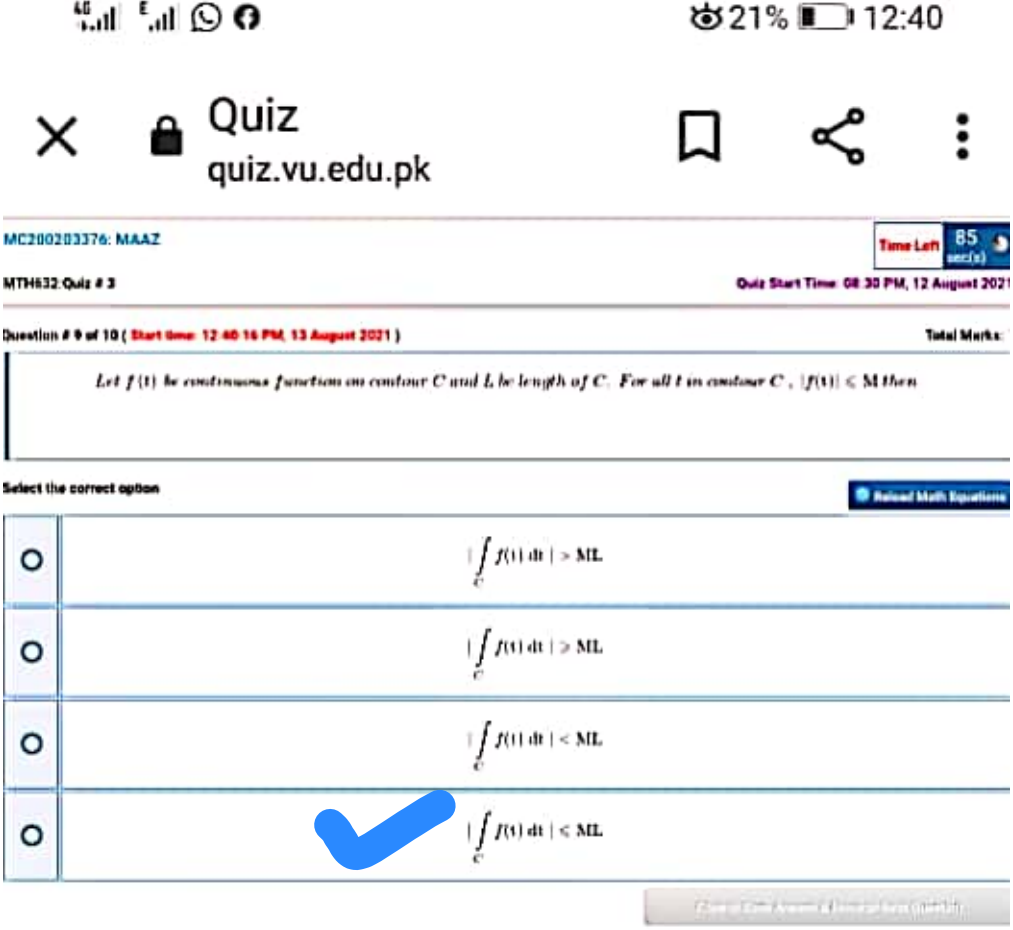
Reload Math Equations

$$\frac{(b^2 - a^2)(x + iy)^2}{2}$$

$$\frac{(b^2 + a^2)(x + iy)}{2}$$

$$\frac{(b^2 - a^2)(x + iy)}{2}$$

$$\frac{(b^2 + a^2)(x + iy)^2}{2}$$



MC200203376: MAAZ

Time Left 86 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 8 of 10 (Start time: 12:37:37 PM, 13 August 2021)

Total Marks: 1

If function f is an analytic function in simple connected domain where $C_R(z_o) = \{z(t) : |z - z_o| = R\}, 0 \leqslant t \leqslant 2\pi$ and R be the radius of circle, then

Select the correct option

Reload Math Equations

- $f(z_o) = \frac{1}{\pi} \int_0^{2\pi} f(z_o + \mathrm{Re}^{it}) dt$
- ✓ $f(z_o) = \frac{1}{2\pi} \int_0^{2\pi} f(z_o + \mathrm{Re}^{it}) dt$
- $f(z_o) = \frac{1}{4\pi} \int_0^{2\pi} f(z_o + \mathrm{Re}^{it}) dt$
- $f(z_o) = \frac{1}{2\pi i} \int_0^{2\pi} f(z_o + \mathrm{Re}^{it}) dt$

Click to Save Answer & Move to Next Question

Let α lies in the interior of contour C and

$$P_n(z) = a_n z^n + a_{n-1} z^{n-1} + a_{n-2} z^{n-2} + \ldots + a_1 z + a_0 z^0$$

then the value of $\int_C \frac{P_n(z)}{z-\alpha} dz$ is ... when $n = 3$

rect option

Reload Math Equations

- $2\pi i P_3(\alpha)$ ✓
- $2\pi i P_n(\alpha)$
- $2\pi P_3(\alpha)$
- $2\pi P_n(\alpha)$

MC200203376: MAAZ

Time Left 86 sec(s)

MTH632 Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 8 of 10 (Start time: 12:37:37 PM, 13 August 2021)

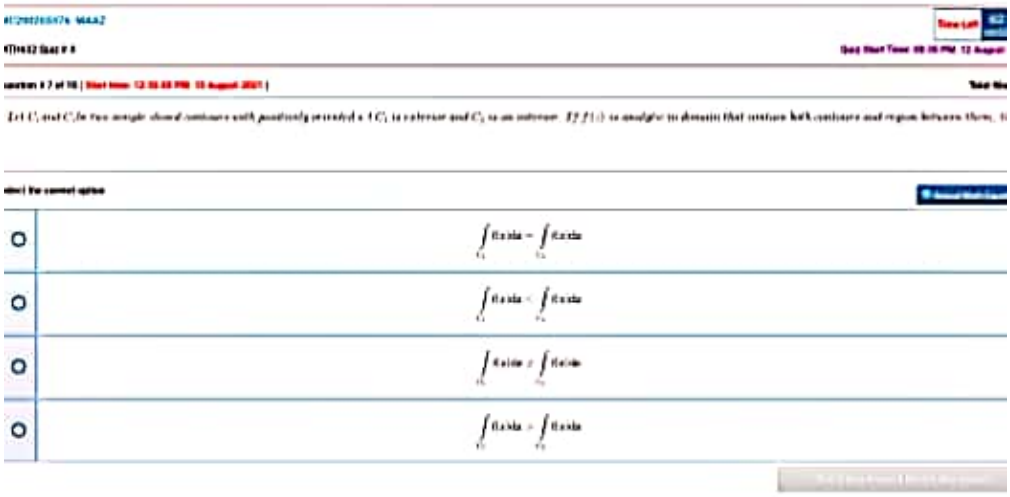
Total Marks:

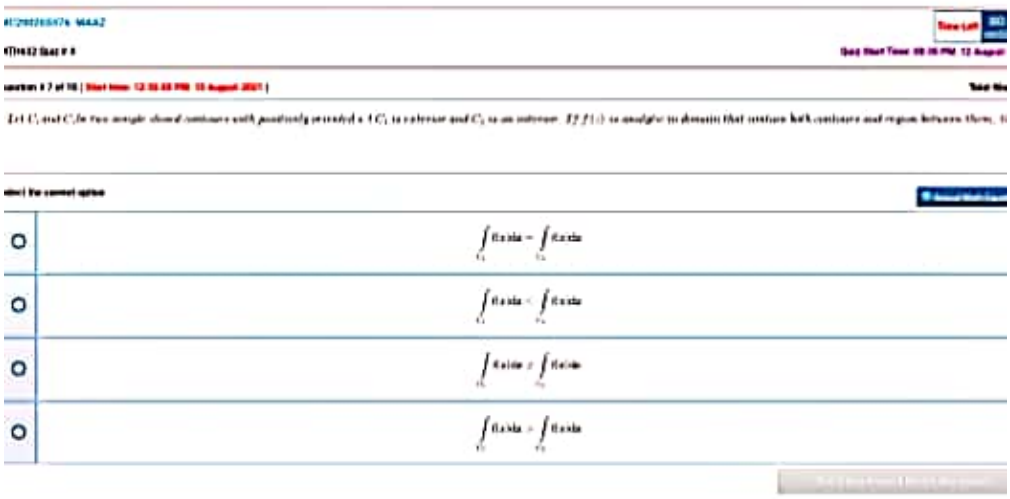
If function f is an analytic function in simple connected domain where $C_R(z_0) = \{z(t) : |z - z_0| = R\}, 0 \le t \le 2\pi$ and R be the radius of circle, then

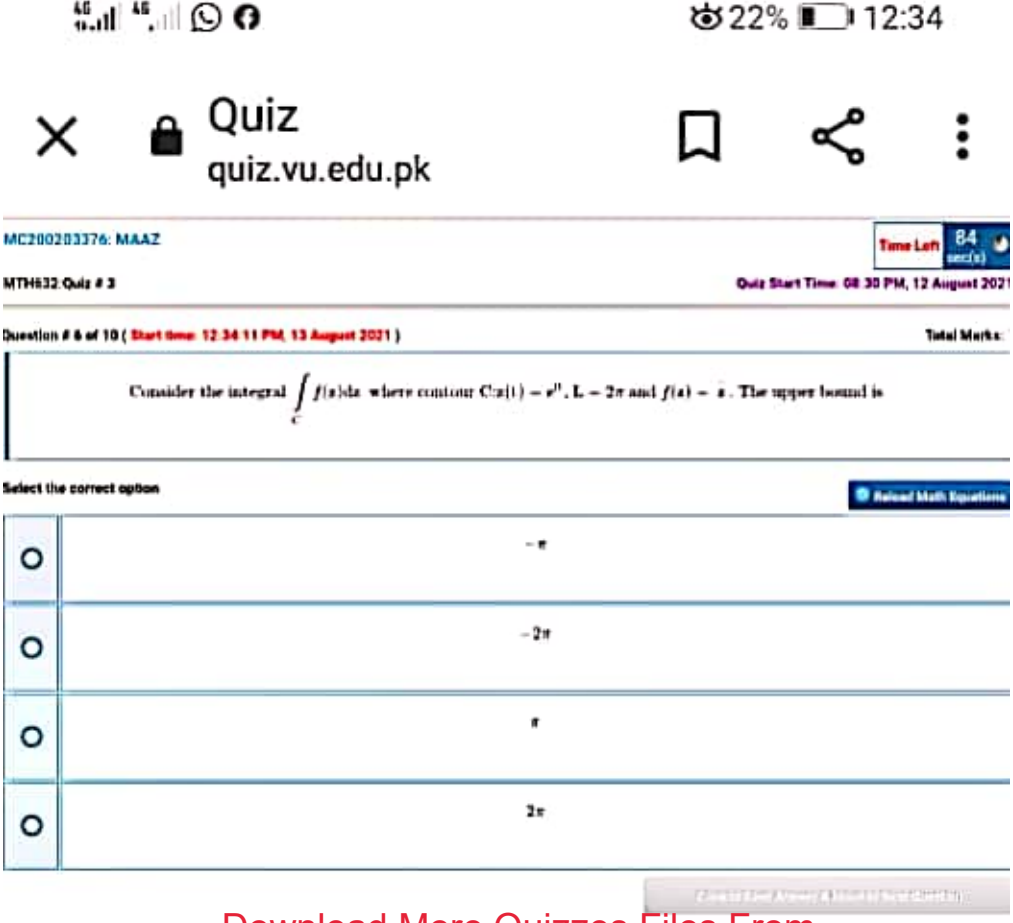
Select the correct option

Reload Math Equations

○	$f(z_0) = \frac{1}{\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
○ ✔	$f(z_0) = \frac{1}{2\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
○	$f(z_0) = \frac{1}{4\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
○	$f(z_0) = \frac{1}{2\pi i}\int_0^{2\pi} f(z_0 + Re^{it})dt$







Inequalities Involving Contour Integrals

Theorem (ML inequality)

If $f(z)$ is continuous on contour C, then

$$\left| \int_C f(z)\,dz \right| \le ML$$

quiz

Where L is length of the contour and M is upper bound for the modulus $|f(z)|$ on C, that is,

$$|f(z)| \le M, \qquad \text{for all } z \in C.$$

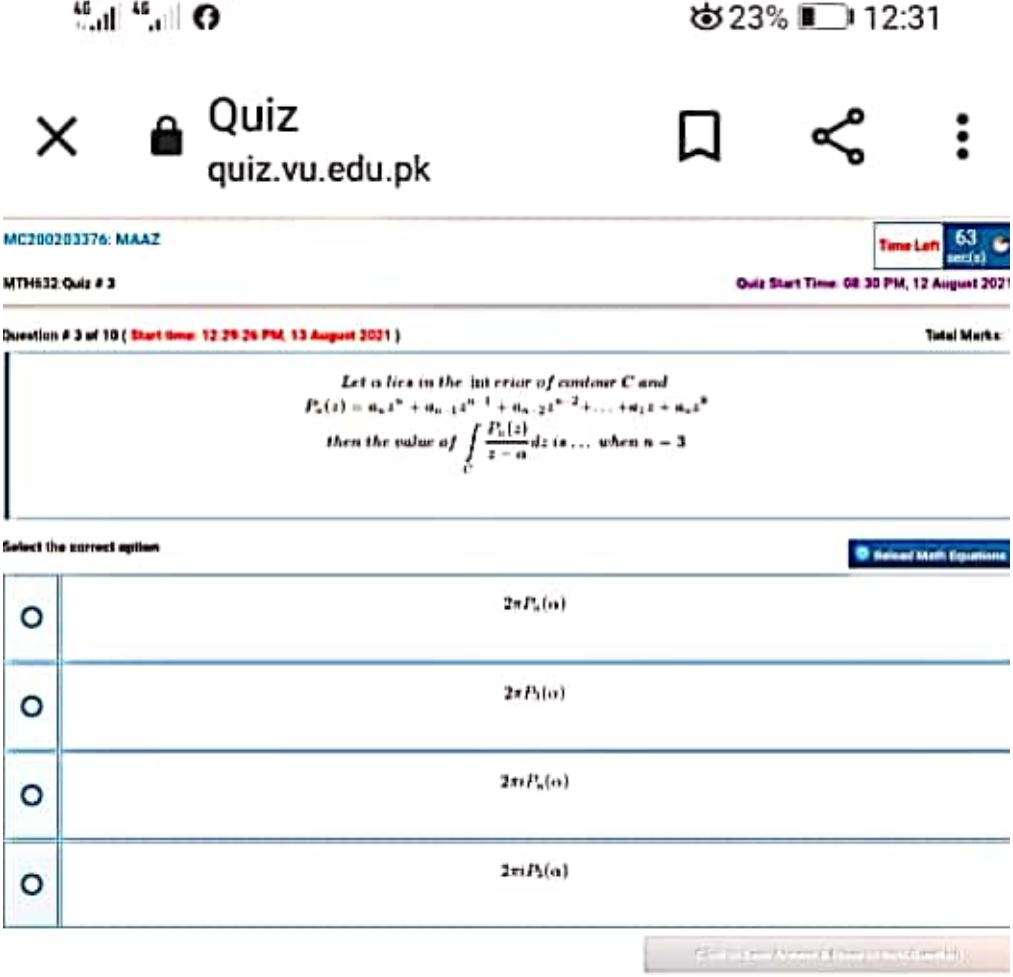
Proof:

Inequalities Involving Contour Integrals

Example ($\left|\int_C f(z)\,dz\right| \le ML$): Find upper bound of

$$\int_C \bar{z}\,dz$$

where $C: z(t) = e^{it}$, $0 \le t \le 2\pi$



MC200203376: MAAZ

Time Left 86 sec(s)

MTH632 Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 2 of 10 (Start time: 12:28:23 PM, 13 August 2021)

Total Marks:

Mathematically, the functions in Green's theorem will be

Select the correct option

- Continuous derivatives
- Discrete partial derivatives
- Continuous partial derivatives ✔
- Discrete derivatives

MC200203376: MAAZ

Time Left 87 sec(s)

MTH632 Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 4 of 10 (Start time: 12:31:37 PM, 13 August 2021)

Total Marks:

If the interior of every simple closed contour C is contained in the domain D , then domain is said to be....

Select the correct option

- Unbounded
- Disconnected
- Simple connected ✔
- None of above

MC200203376: MAAZ

Time Left 83 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 5 of 10 (Start time: 12:32:50 PM, 13 August 2021)

Total Marks:

Let $f(z)$ be an analytic in a domain D and D be the interior and boundary of th circle 'r' defined as $|z-a|=r$ and $|f(z)| \leq M$, then $|f^{(n)}(a)| \leq \frac{n!M}{r^n}$

Select the correct option

Reload Math Equations

- ML Inequality
- Cauchy Inequality
- Cauchy Schwarz Inequality
- None of above

MC200203376: MAAZ

Time Left 84 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 3 of 10 (Start time: 12:29:26 PM, 13 August 2021)

Total Marks:

Let α lies in the interior of contour C and
$P_n(z) = a_n z^n + a_{n-1} z^{n-1} + a_{n-2} z^{n-2} + \ldots + a_1 z + a_0 z^0$
then the value of $\int_C \frac{P_n(z)}{z-\alpha} dz$ is ... when $n = 3$

Select the correct option

Reload Math Equations

O	$2\pi P_n(\alpha)$
O	$2\pi P_3(\alpha)$
O	$2\pi P_n(\alpha)$
O	$2\pi P_3(\alpha)$

MC200203376: MAAZ

Time Left 85 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 10 of 10 (Start time: 12:41:08 PM, 13 August 2021)

Total Marks:

If $f(z)$ is an analytic function in domain D then for $n \geq 0$ where n is a positive integer,

Select the correct option

Reload Math Equations

- $f^{(n)}(z)$ is analytic in disconnected D
- None of above
- $f^{(n)}(z)$ is not analytic in simple connected D
- $f^{(n)}(z)$ is an analytic in simple connected D

MC200203376: MAAZ

Time Left 63 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 3 of 10 (Start time: 12:29:26 PM, 13 August 2021)

Total Marks:

Let a lies in the interior of contour C and
$P_n(z) = a_n z^n + a_{n-1} z^{n-1} + a_{n-2} z^{n-2} + \ldots + a_1 z + a_0 z^0$
then the value of $\int_C \frac{P_n(z)}{z-a} dz$ is ... when $n = 3$

Select the correct option

Reload Math Equations

O	$2\pi P_n(a)$
O	$2\pi P_3(a)$
O	$2\pi P_n(a)$
O	$2\pi P_3(a)$

Question # 4 of 10 (Start time: 01:19:45 PM, 13 August 2021)

A curve C is said to be a contour if it is constructed by joining finitely many smooth curves end to end.

Select the correct option

- False
- True ✓

MC200203376: MAAZ

Time Left 85 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 10 of 10 (Start time: 12:41:08 PM, 13 August 2021)

Total Marks:

If $f(z)$ is an analytic function in domain D then for $n > 0$ where n is a positive integer.

Select the correct option

Reload Math Equations

- $f^{(n)}(z)$ is analytic in disconnected D
- None of above
- $f^{(n)}(z)$ is not analytic in simple connected D
- $f^{(n)}(z)$ is an analytic in simple connected D

MC200203376: MAAZ

Time Left 84 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 3 of 10 (Start time: 12:29:26 PM, 13 August 2021)

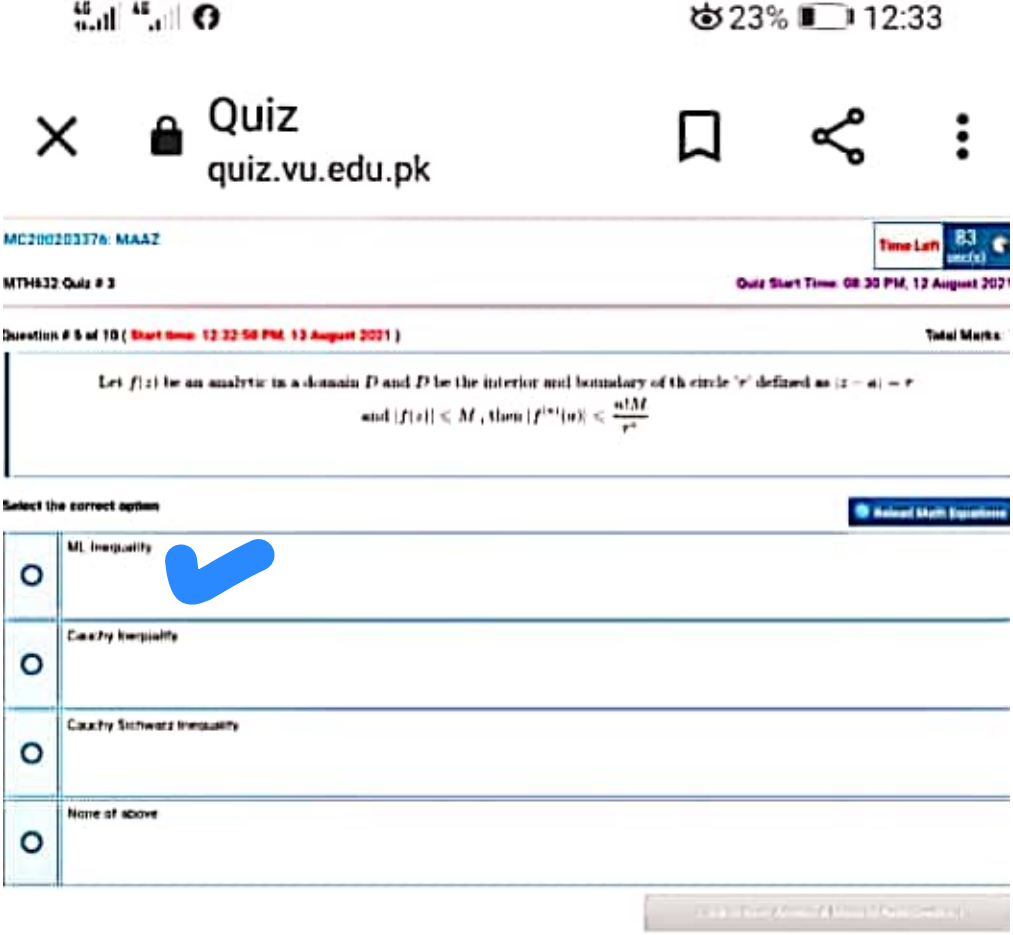
Total Marks:

Let z lies in the interior of contour C and
$P_n(z) = a_n z^n + a_{n-1} z^{n-1} + a_{n-2} z^{n-2} + \ldots + a_1 z + a_0 z^0$
then the value of $\int_C \frac{P_n(z)}{z-a} dz$ is ... when $n = 3$

Select the correct option

Reload Math Equations

O	$2\pi P_n(a)$
O	$2\pi P_3(a)$
O	$2\pi P_n(a)$
O	$2\pi P_3(a)$



MC200203376: MAAZ

Time Left 86 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 8 of 10 (Start time: 12:37:37 PM, 13 August 2021)

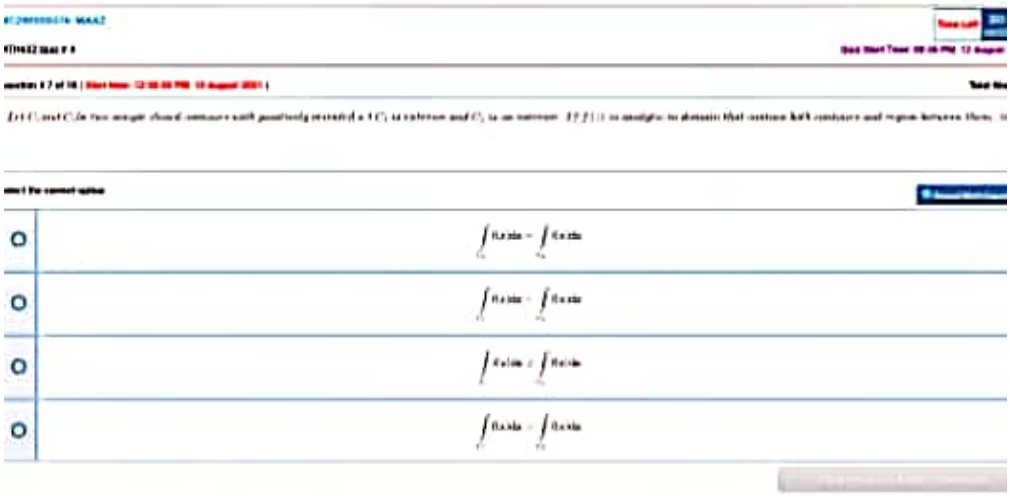
Total Marks:

If function f is an analytic function in simple connected domain where $C_R(z_0) = \{z(t) : |z - z_0| = R\}, 0 \le t \le 2\pi$ and R be the radius of circle, then

Select the correct option

Reload Math Equations

- $f(z_0) = \frac{1}{\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
- $f(z_0) = \frac{1}{2\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
- $f(z_0) = \frac{1}{4\pi}\int_0^{2\pi} f(z_0 + Re^{it})dt$
- $f(z_0) = \frac{1}{2\pi i}\int_0^{2\pi} f(z_0 + Re^{it})dt$



MC200203376: MAAZ

Time Left 84 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 6 of 10 (Start time: 12:34:11 PM, 13 August 2021) Total Marks:

Consider the integral $\int_C f(z)dz$ where contour $C: z(t) = e^{it}, L = 2\pi$ and $f(z) = \frac{1}{z}$. The upper bound is

Select the correct option

Reload Math Equations

- π
- 2π
- π
- 2π

MC200203376: MAAZ

Time Left 85 sec(s)

MTH632:Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 9 of 10 (Start time: 12:40:16 PM, 13 August 2021)

Total Marks:

Let $f(t)$ be continuous functions on contour C and L be length of C. For all t on contour C, $|f(t)| \leq M$ then

Select the correct option

Reload Math Equations

- $\left|\int_C f(t)\,dt\right| > ML$
- $\left|\int_C f(t)\,dt\right| > ML$
- $\left|\int_C f(t)\,dt\right| < ML$
- $\left|\int_C f(t)\,dt\right| \leq ML$ ✔

MC200203376: MAAZ

Time Left 87

MTH632 Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

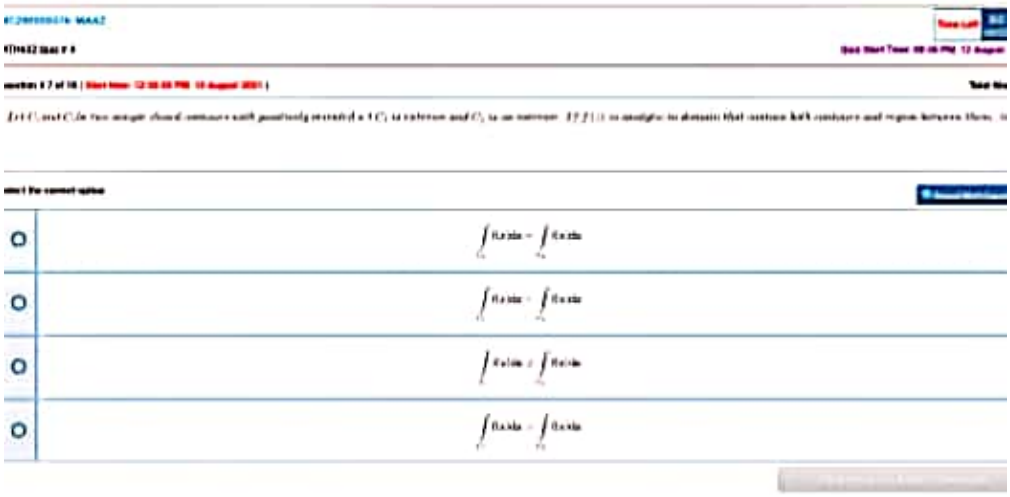
Question # 4 of 10 (Start time: 12:31:37 PM, 13 August 2021)

Total Marks

If the interior of every simple closed contour C is contained in the domain D , then domain is said to be....

Select the correct option

- Unbounded
- Disconnected
- Simple connected ✓
- None of above



Question # 8 of 10 (Start time: 12:37:37 PM, 13 August 2021)

Total Marks: 1

If function f is an analytic function in simple connected domain where $C_R(z_o) = \{z(t) : |z - z_o| = R\}, 0 \leqslant t \leqslant 2\pi$ and R be the radius of circle, then

Select the correct option

Reload Math Equations

- $f(z_o) = \frac{1}{\pi}\int_0^{2\pi} f(z_o + \mathrm{Re}^{it})dt$
- $f(z_o) = \frac{1}{2\pi}\int_0^{2\pi} f(z_o + \mathrm{Re}^{it})dt$
- $f(z_o) = \frac{1}{4\pi}\int_0^{2\pi} f(z_o + \mathrm{Re}^{it})dt$
- $f(z_o) = \frac{1}{2\pi i}\int_0^{2\pi} f(z_o + \mathrm{Re}^{it})dt$

Click to Save Answer & Move to Next Question

MC200200763: AKHTER ZAMAN

Time Left 83 sec(s)

MTH622:Quiz # 2

Quiz Start Time: 09:47 AM, 13 August 202

Question # 3 of 10 (Start time: 09:48:09 AM, 13 August 2021)

Total Marks:

Using Cauchy integral formula to compute the value of integral

$$\int_C \frac{z-2}{z+i}dz \text{ where } f(z) = z - 2 \text{ and } z_0 = -i$$

Select the correct option

Reload Math Equations

- $2\pi(1+2i)$
- $2\pi(1-2i)$
- $2\pi(-1+2i)$
- $2\pi(-1-2i)$

MC210020337a: MAAZ

Time Left 86 sec(s)

MTH632 Quiz # 3

Quiz Start Time: 08:30 PM, 12 August 2021

Question # 2 of 10 (Start time: 12:28:23 PM, 13 August 2021)

Total Marks:

Mathematically, the functions in Green's theorem will be

Select the correct option

- Continuous derivatives
- Discrete partial derivatives
- Continuous partial derivatives ✓
- Discrete derivatives