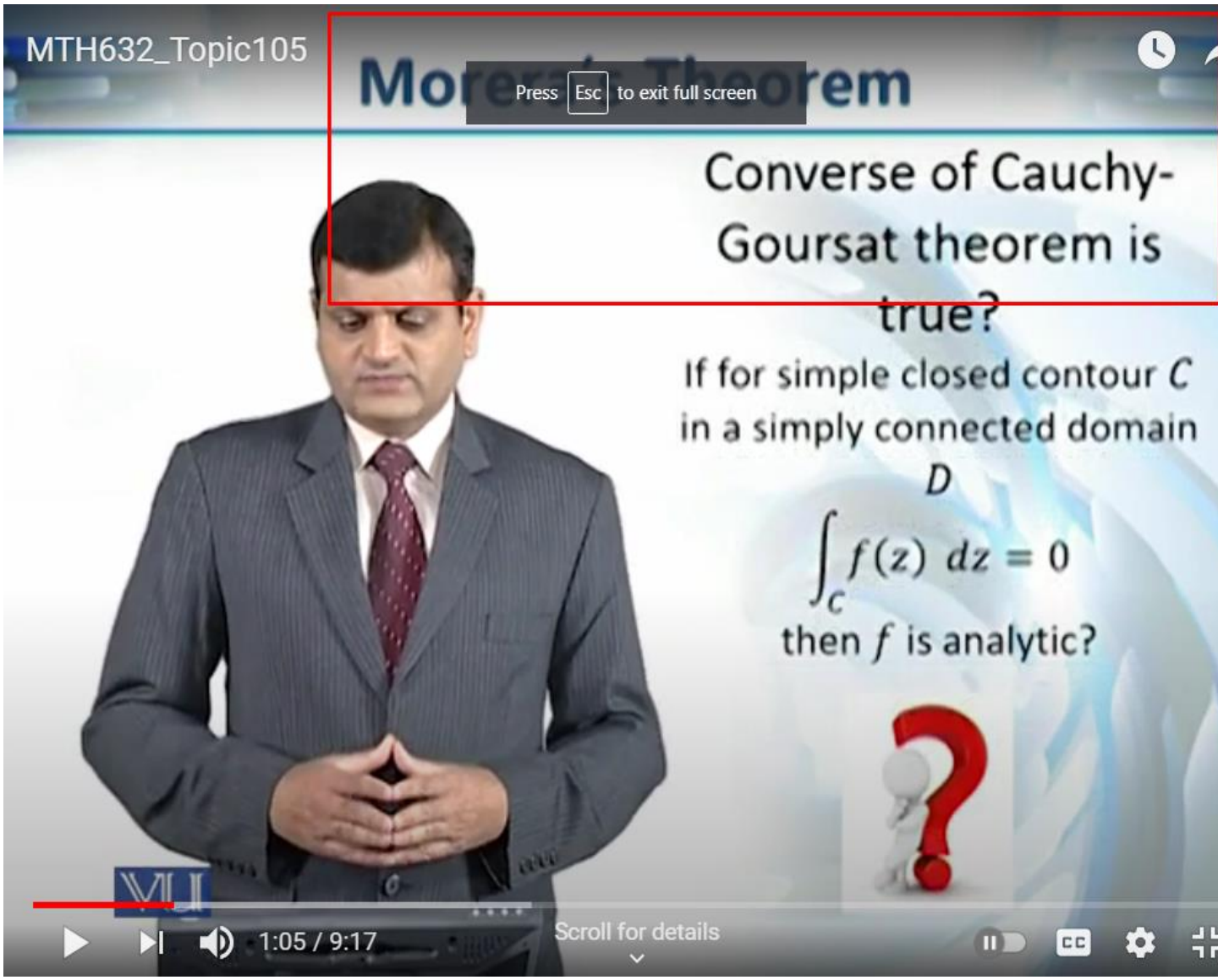
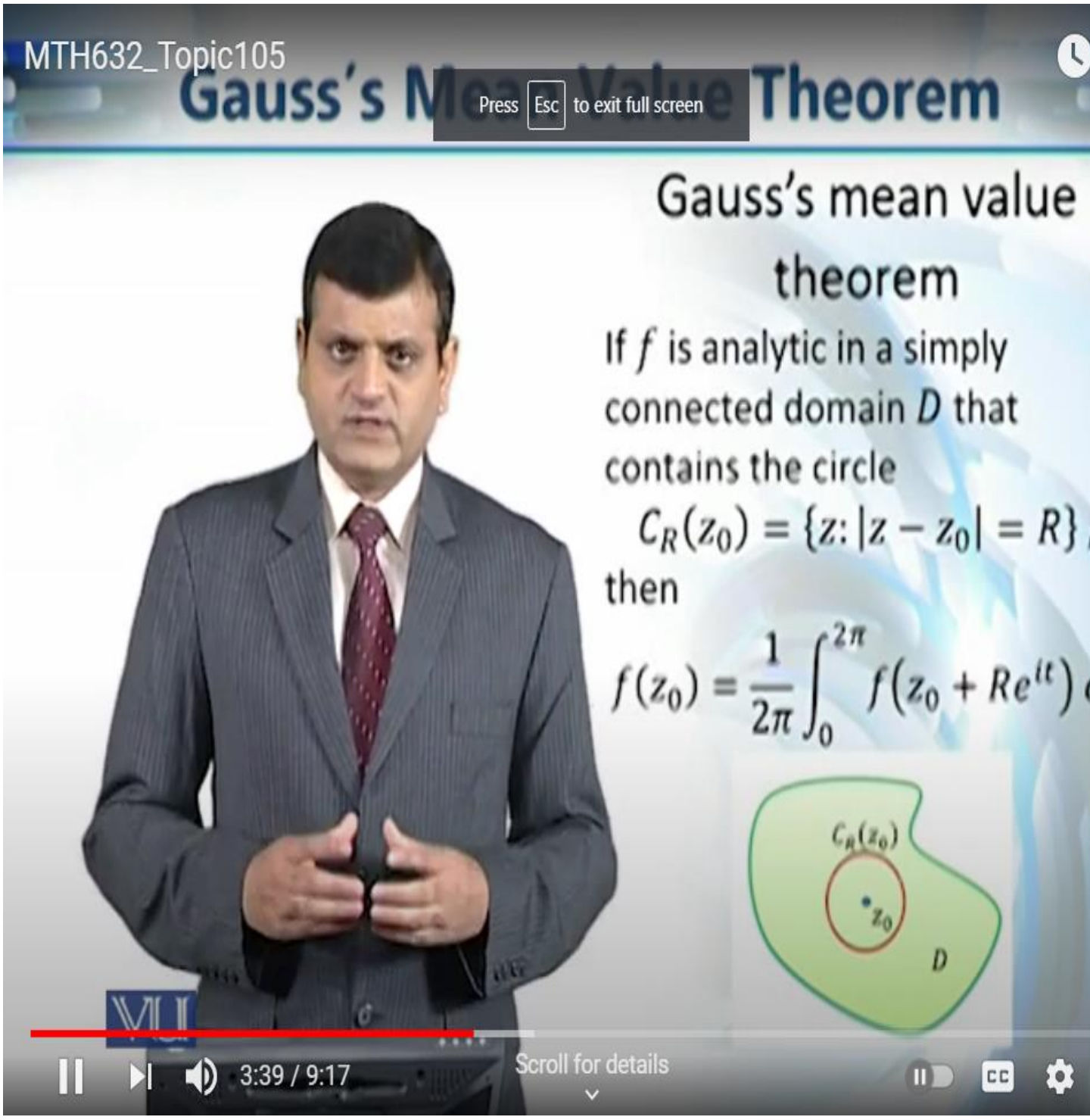

MTH632_Topic105
Press Esc to exit full screen
Converse of Cauchy-Goursat theorem is true?
If for simple closed contour C in a simply connected domain D
$\int_C f(z)\,dz = 0$
then f is analytic?
1:05 / 9:17
Scroll for details


MTH632_Topic105
Gauss's Mean Value Theorem
Press Esc to exit full screen
Gauss's mean value theorem
If f is analytic in a simply connected domain D that contains the circle
$C_R(z_0) = \{z: |z - z_0| = R\}$
then
$f(z_0) = \frac{1}{2\pi}\int_0^{2\pi} f(z_0 + Re^{it})$
$C_R(z_0)$
z_0
D
3:39 / 9:17
Scroll for details

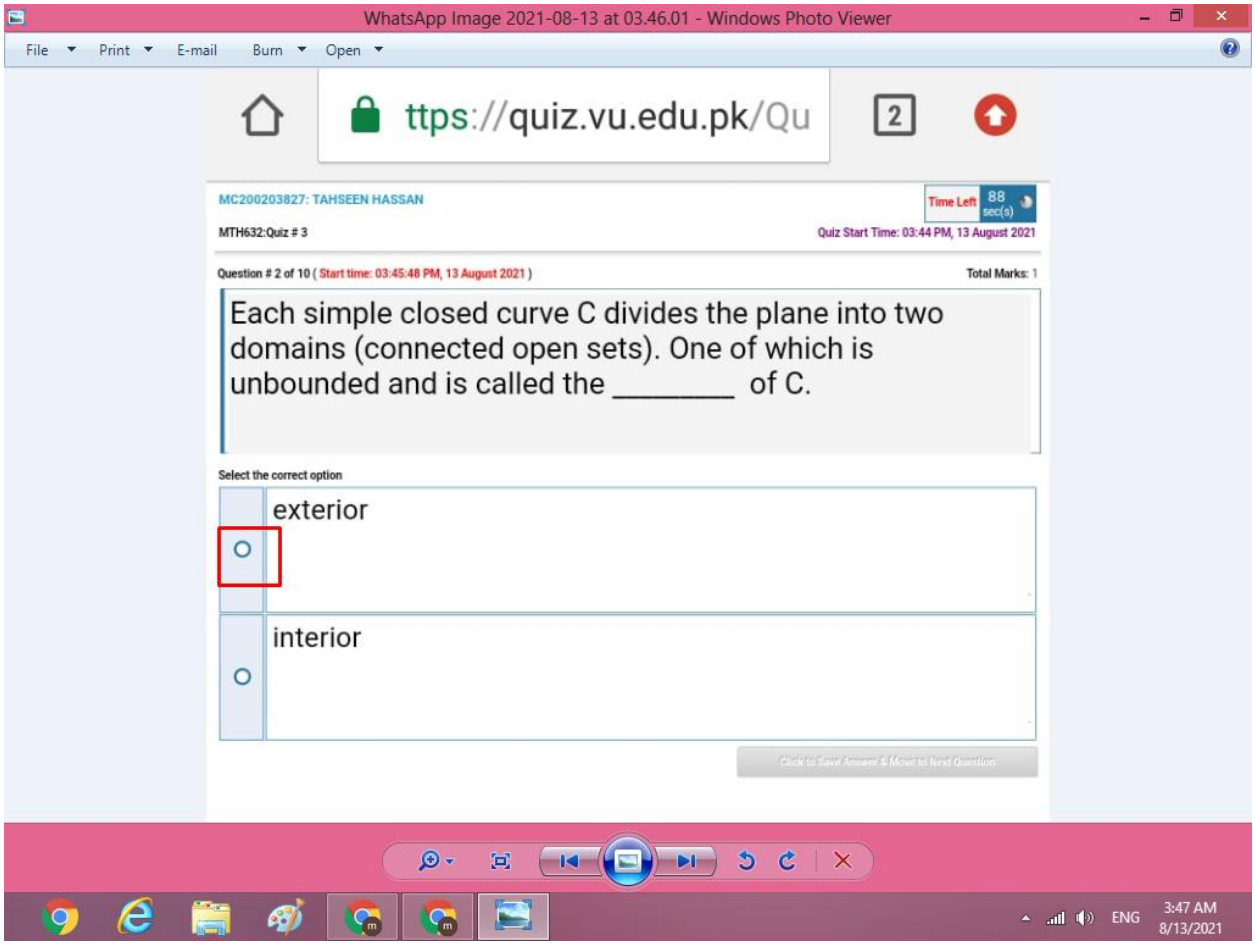
Gauss's Mean Value Theorem

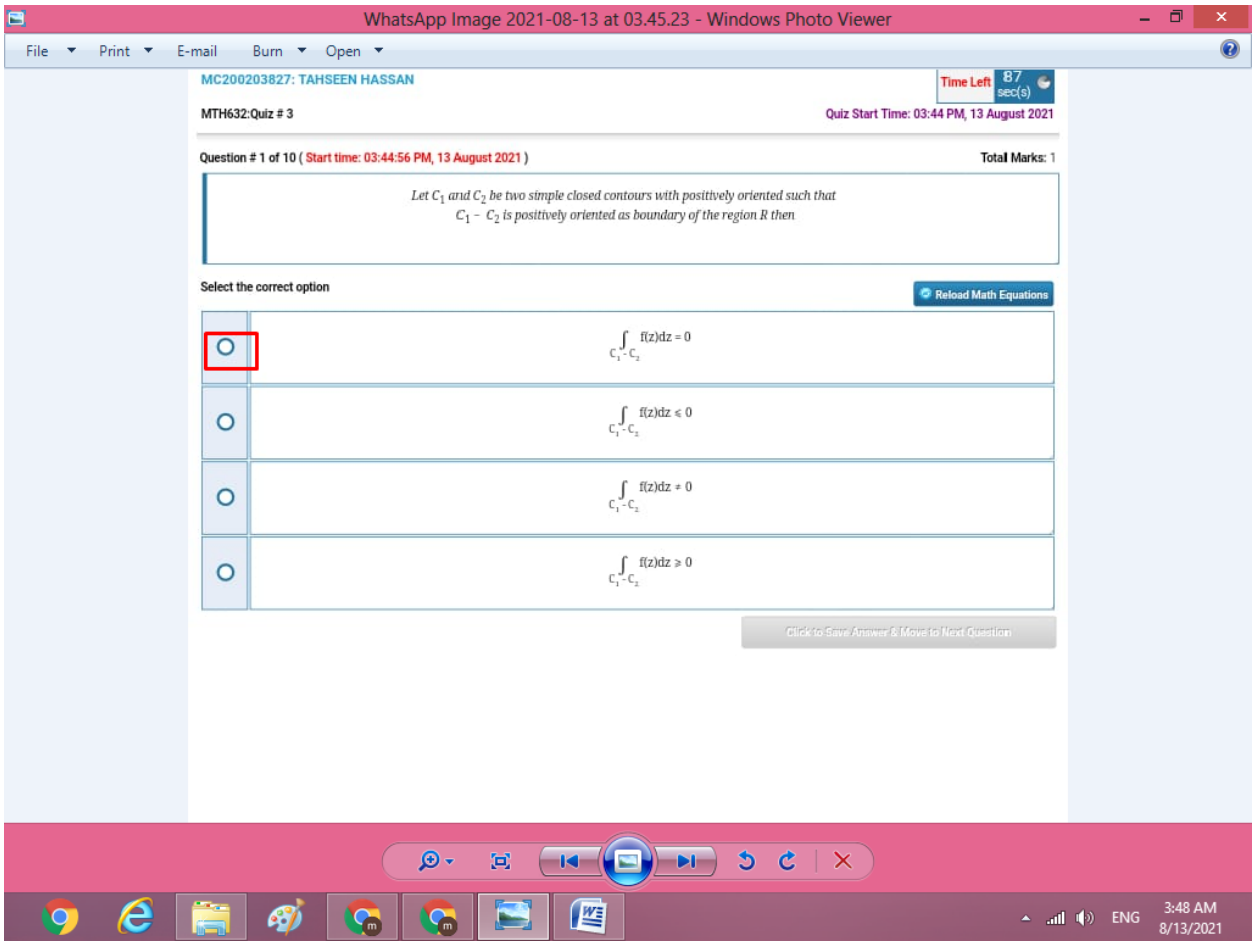
Example (Gauss's mean value theorem): Evaluate

$$\int_0^{2\pi} \exp(5e^{it} + i\pi)\, dt$$

Solution: The function $f(z) = \exp(z)$ is analytic hence, by Gauss's mean value theorem

$$\int_0^{2\pi} \exp(5e^{it} + \pi i)\, dt = (2\pi)\exp(i\pi) = -2\pi.$$

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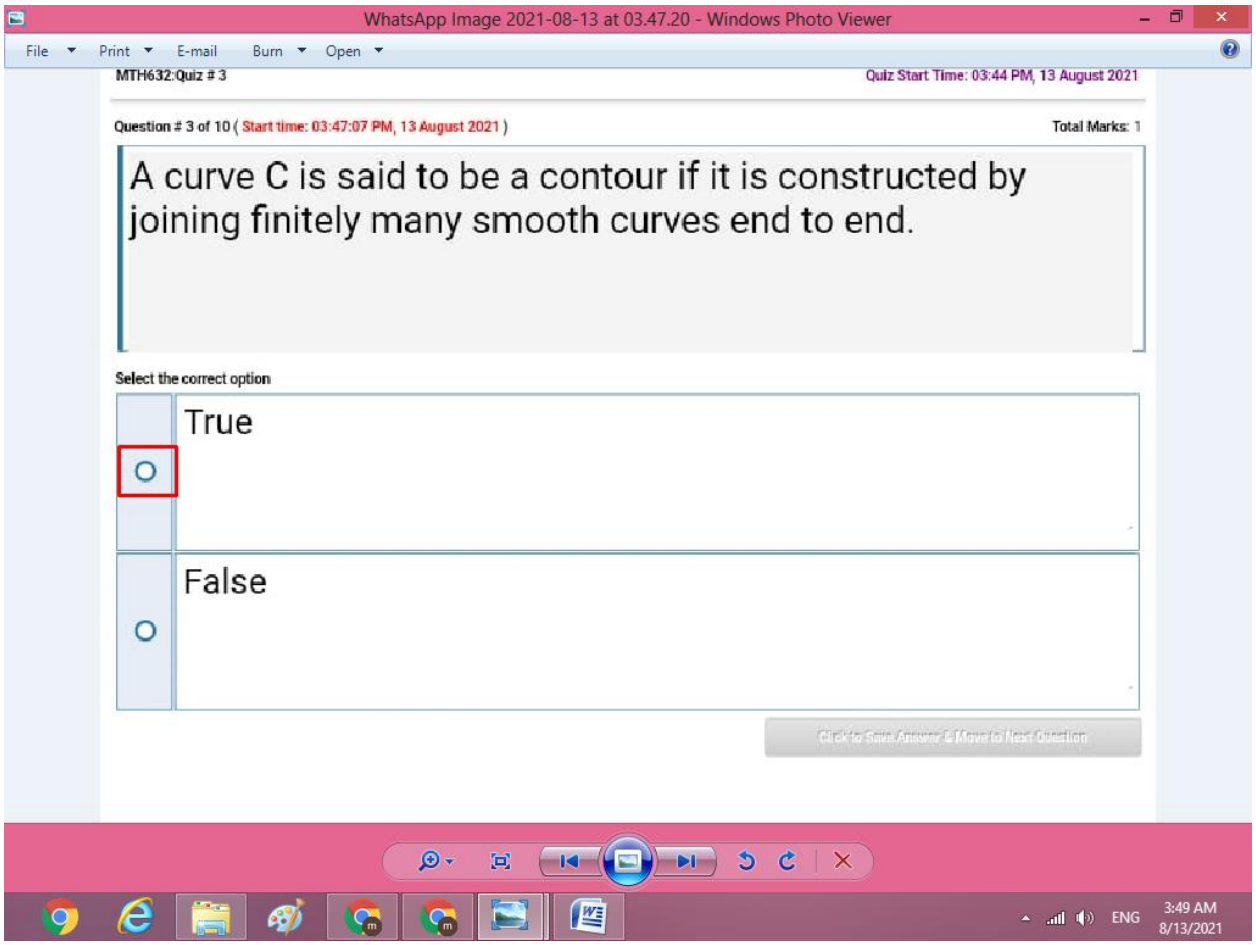
MC200203827: TAHSEEN HASSAN
Time Left 87 sec(s)
MTH632:Quiz # 3
Quiz Start Time: 03:44 PM, 13 August 2021
Question # 1 of 10 (Start time: 03:44:56 PM, 13 August 2021)
Total Marks: 1
Let C_1 and C_2 be two simple closed contours with positively oriented such that $C_1 - C_2$ is positively oriented as boundary of the region R then
Select the correct option
Reload Math Equations
$\int_{C_1-C_2} f(z)dz = 0$
$\int_{C_1-C_2} f(z)dz \leq 0$
$\int_{C_1-C_2} f(z)dz \neq 0$
$\int_{C_1-C_2} f(z)dz \geq 0$
Click to Save Answer & Move to Next Question
ENG
3:48 AM
8/13/2021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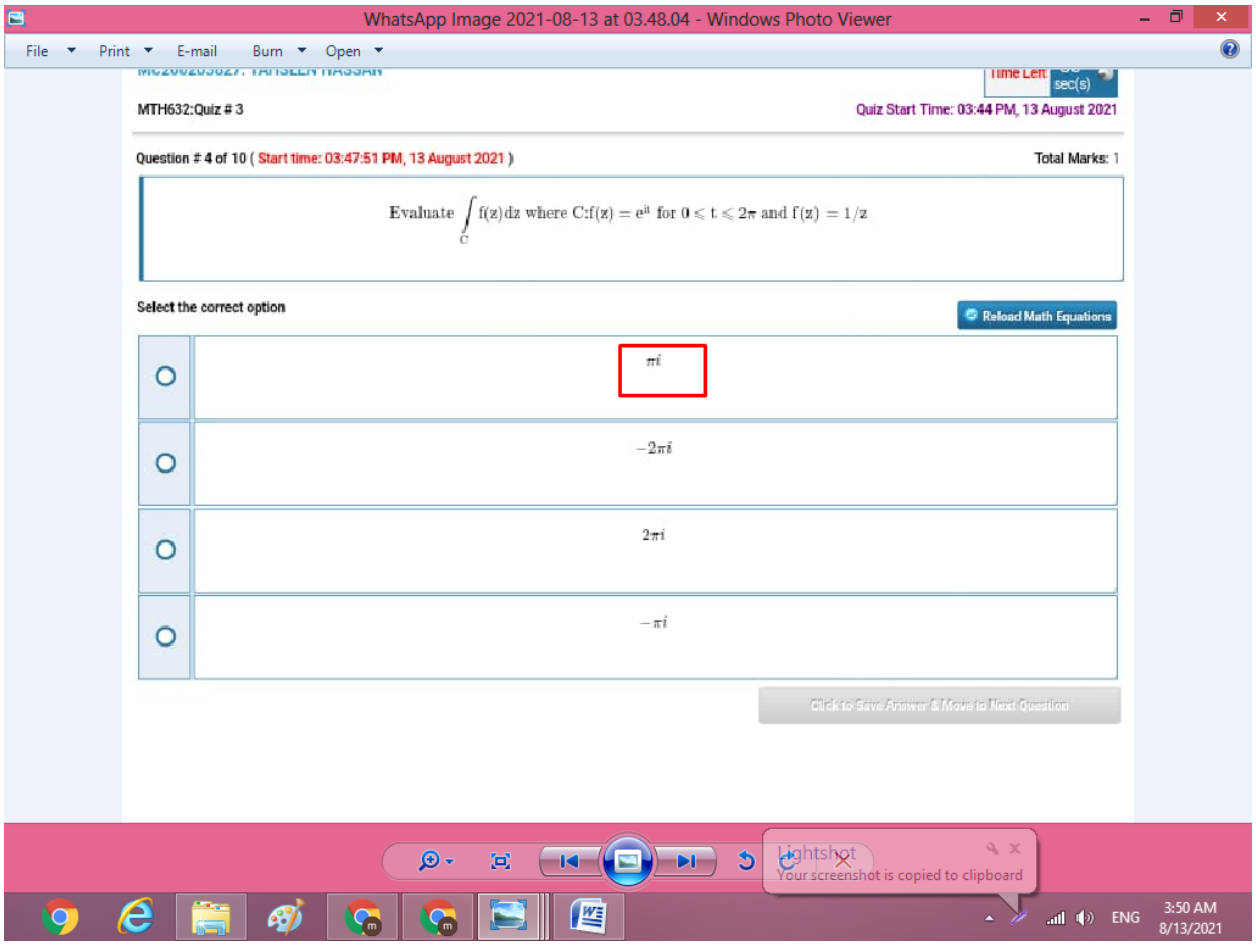
MTH632:Quiz # 3
Quiz Start Time: 03:44 PM, 13 August 2021
Question # 3 of 10 (Start time: 03:47:07 PM, 13 August 2021)
Total Marks: 1
A curve C is said to be a contour if it is constructed by joining finitely many smooth curves end to end.
Select the correct option
True
False
Click to Save Answer & Move to Next Question
ENG
3:49 AM
8/13/2021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MTH632:Quiz # 3
Quiz Start Time: 03:44 PM, 13 August 2021
Question # 4 of 10 (Start time: 03:47:51 PM, 13 August 2021)
Total Marks: 1
Evaluate $\int_C f(z)dz$ where C:$f(z) = e^{it}$ for $0 \leq t \leq 2\pi$ and $f(z) = 1/z$
Select the correct option
Reload Math Equations
πi
$-2\pi i$
$2\pi i$
$-\pi i$
Click to Save Answer & Move to Next Question
Lightshot
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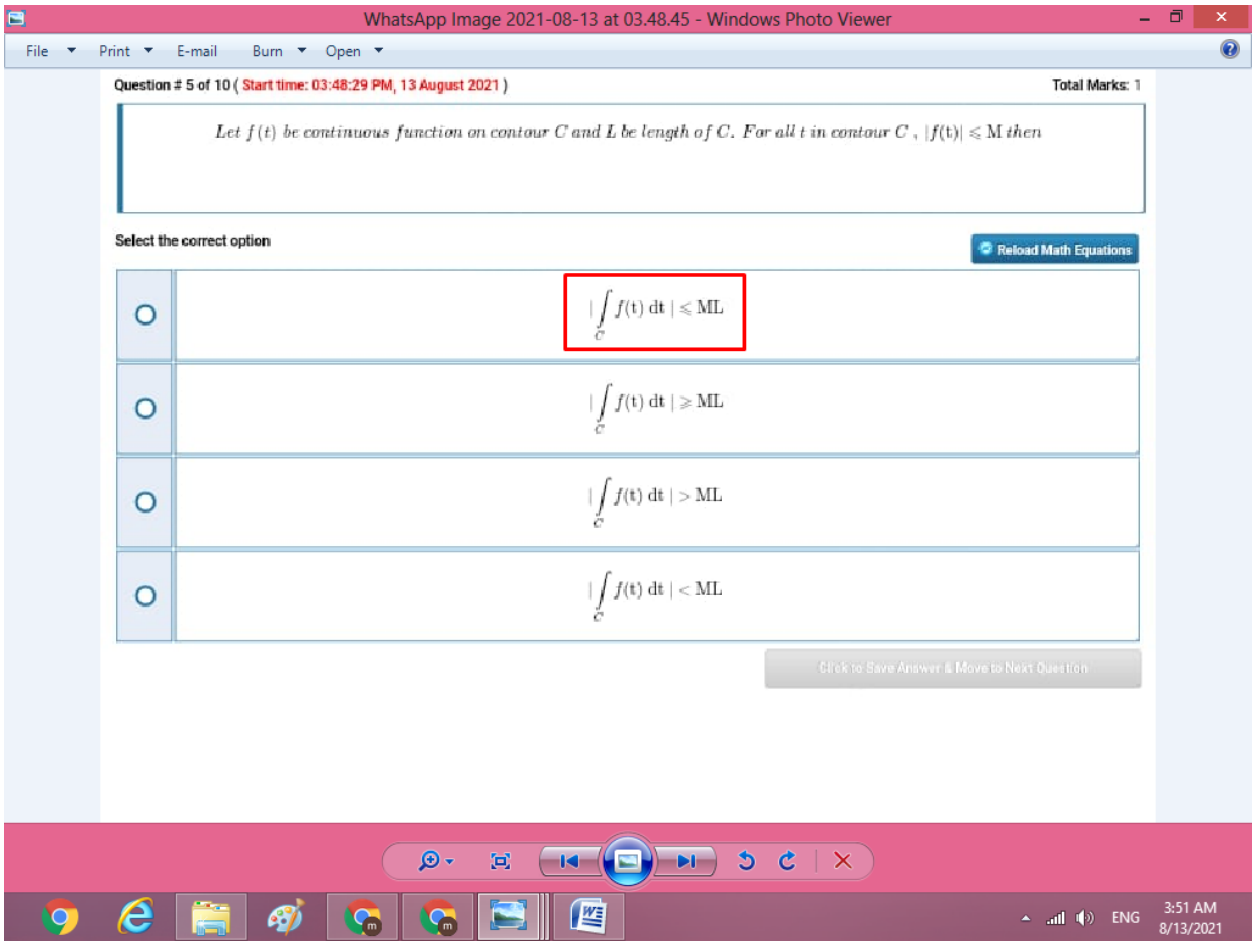
ENG
3:50 AM
8/13/2021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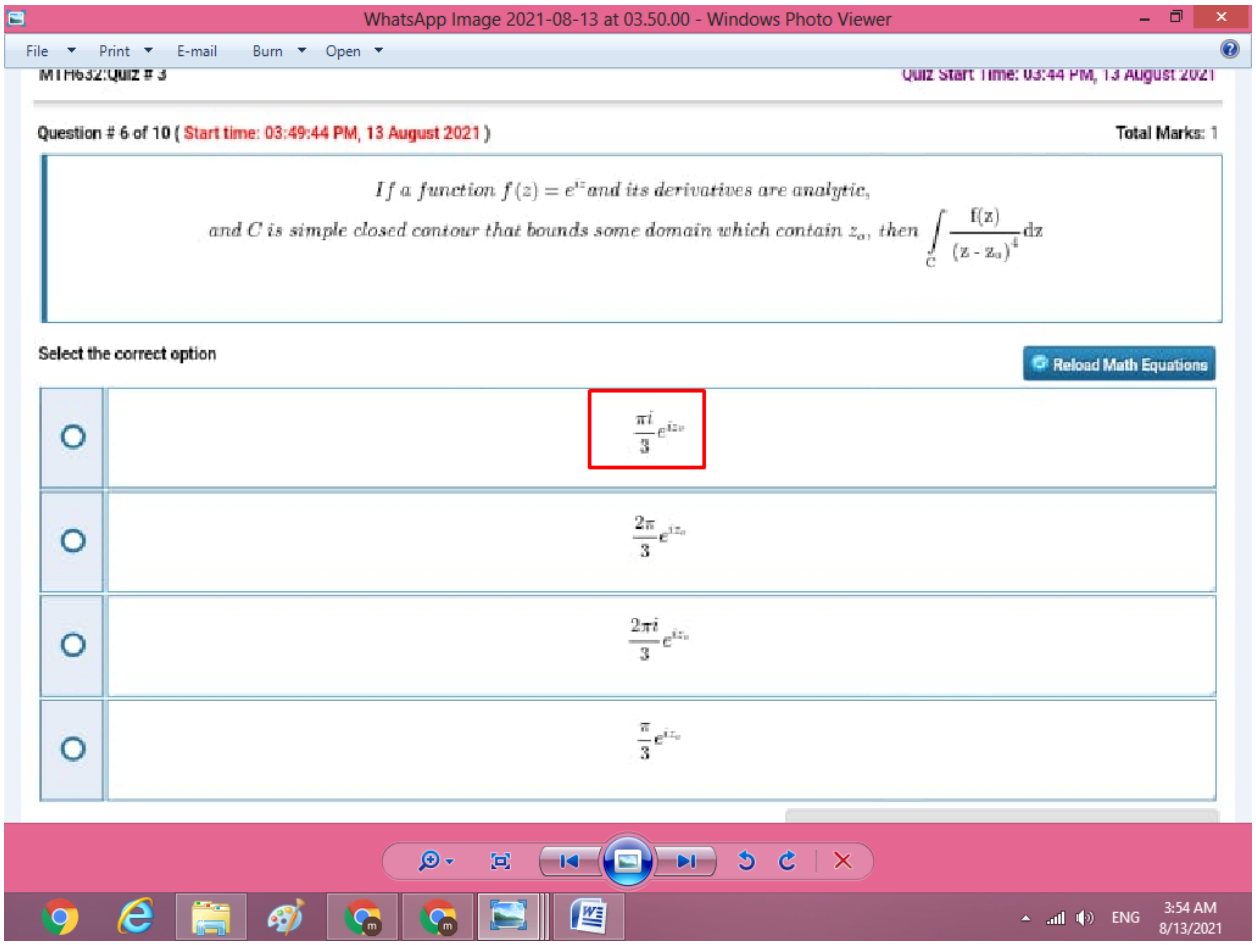
Question # 5 of 10 (Start time: 03:48:29 PM, 13 August 2021)
Total Marks: 1
Let $f(t)$ be continuous function on contour C and L be length of C. For all t in contour C , $|f(t)| \leq M$ then
Select the correct option
Reload Math Equations
$|\int_C f(t)\,dt| \leq ML$
$|\int_C f(t)\,dt| \geq ML$
$|\int_C f(t)\,dt| > ML$
$|\int_C f(t)\,dt| < ML$
Click to Save Answer & Move to Next Question
ENG
3:51 AM
8/13/2021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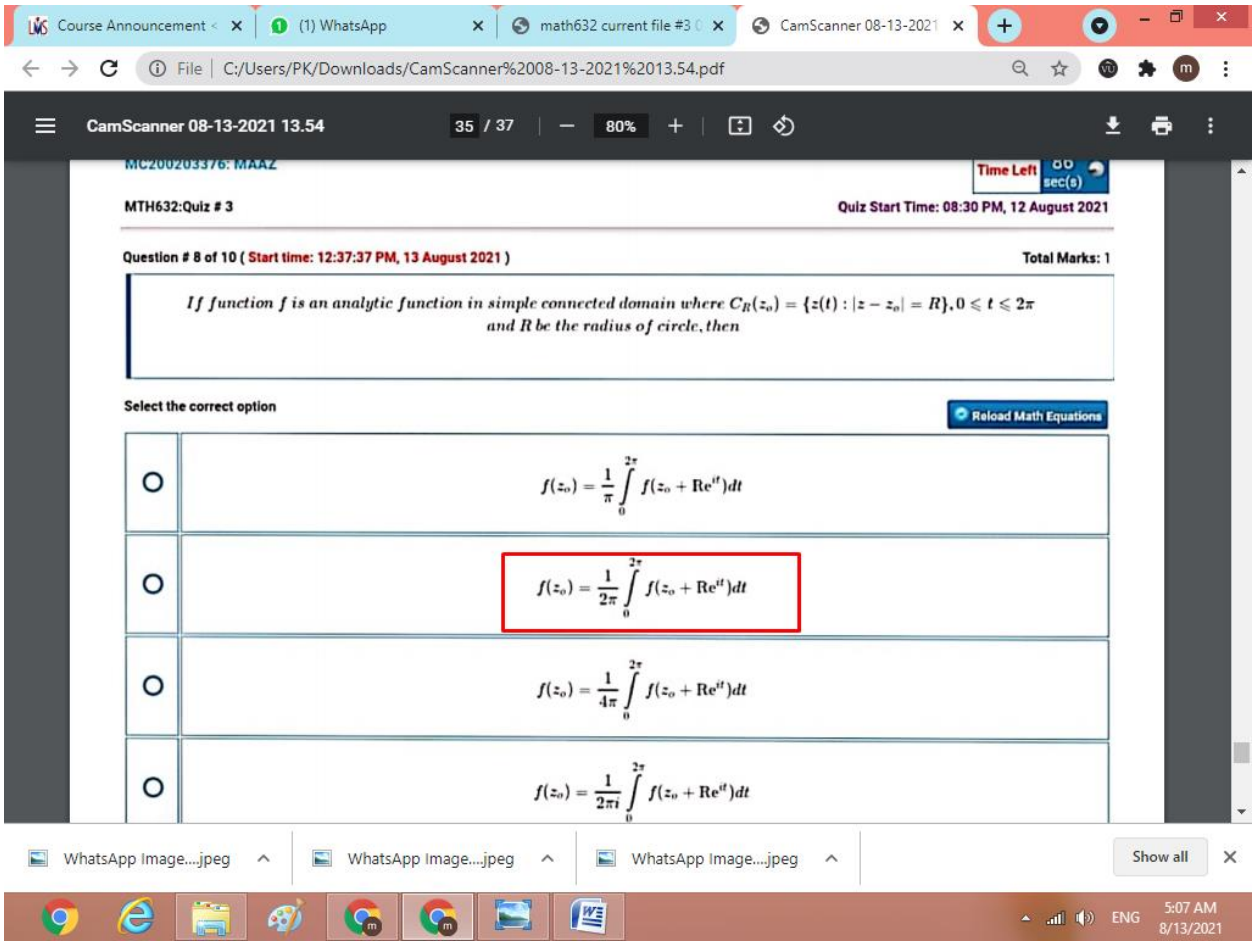
MTH632:Quiz # 3
Quiz Start Time: 03:44 PM, 13 August 2021
Question # 6 of 10 (Start time: 03:49:44 PM, 13 August 2021)
Total Marks: 1
If a function $f(z) = e^{iz}$ and its derivatives are analytic,
and C is simple closed contour that bounds some domain which contain z_o, then $\int_C \frac{f(z)}{(z - z_o)^4} dz$
Select the correct option
Reload Math Equations
$\frac{\pi i}{3} e^{iz_o}$
$\frac{2\pi}{3} e^{iz_o}$
$\frac{2\pi i}{3} e^{iz_o}$
$\frac{\pi}{3} e^{iz_o}$
ENG
3:54 AM
8/13/2021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(1) WhatsApp
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MC200203376: MAAZ
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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 $C_R(z_o) = \{z(t) : |z - z_o| = R\}, 0 \leq t \leq 2\pi$ and R be the radius of circle, then
Select the correct option
Reload Math Equations
$f(z_o) = \frac{1}{\pi}\int_0^{2\pi} f(z_o + Re^{it})dt$
$f(z_o) = \frac{1}{2\pi}\int_0^{2\pi} f(z_o + Re^{it})dt$
$f(z_o) = \frac{1}{4\pi}\int_0^{2\pi} f(z_o + Re^{it})dt$
$f(z_o) = \frac{1}{2\pi i}\int_0^{2\pi} f(z_o + Re^{it})dt$
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Show all
ENG
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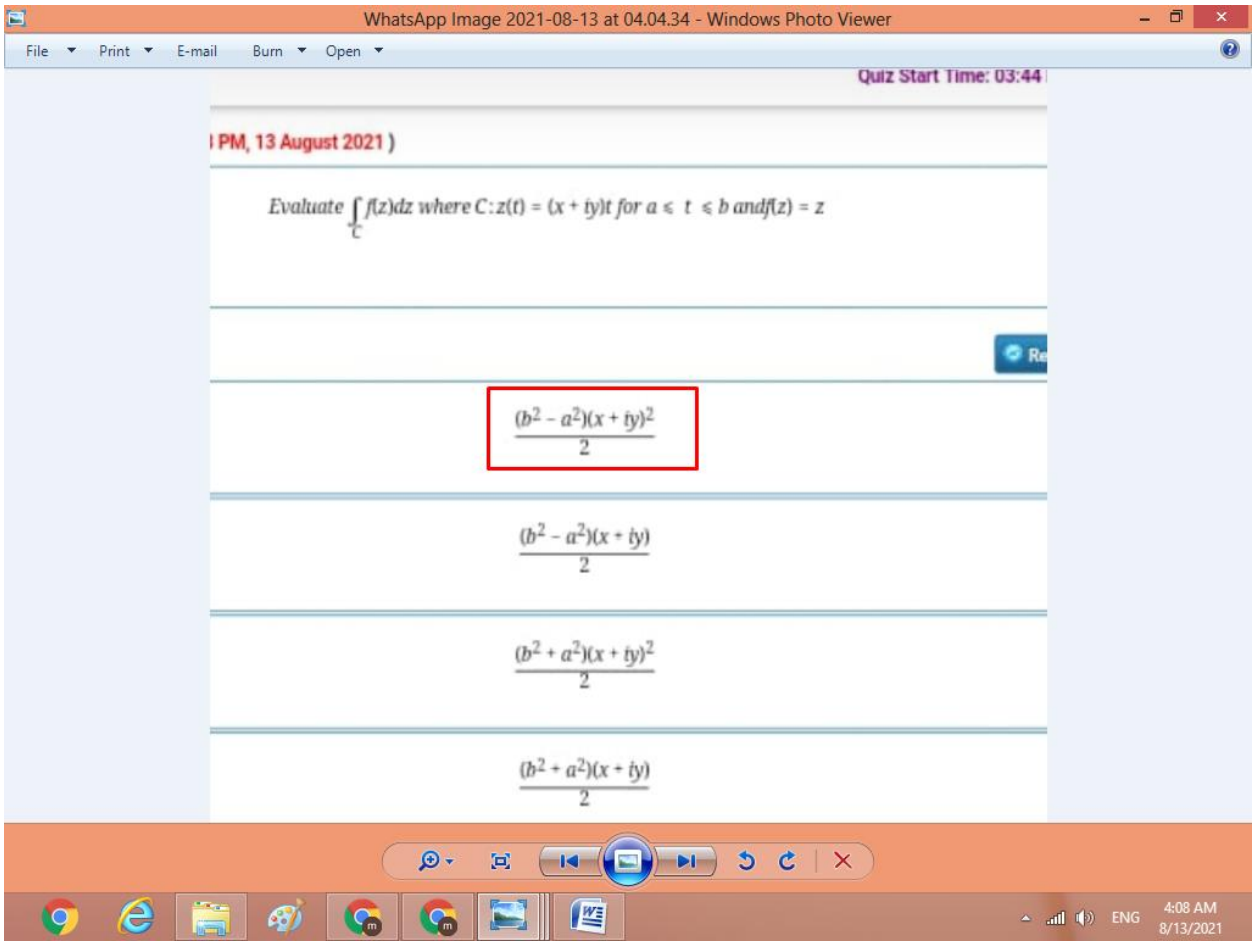
8/13/2021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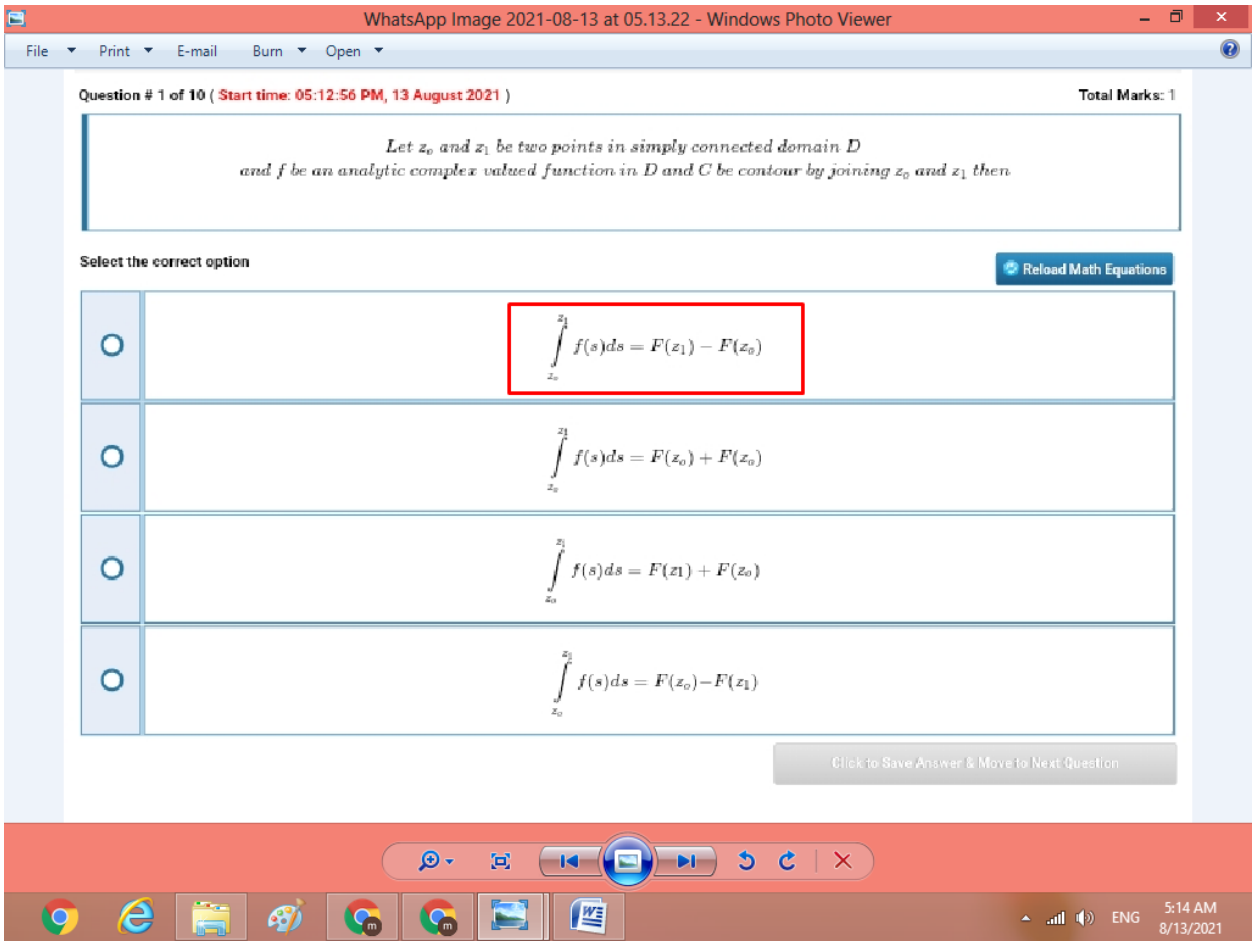
Quiz Start Time: 03:44
PM, 13 August 2021)
Evaluate $\int_C f(z)dz$ where $C: z(t) = (x + iy)t$ for $a \leq t \leq b$ and $f(z) = z$
$\frac{(b^2 - a^2)(x + iy)^2}{2}$
$\frac{(b^2 - a^2)(x + iy)}{2}$
$\frac{(b^2 + a^2)(x + iy)^2}{2}$
$\frac{(b^2 + a^2)(x + iy)}{2}$
ENG
4:08 AM
8/13/2021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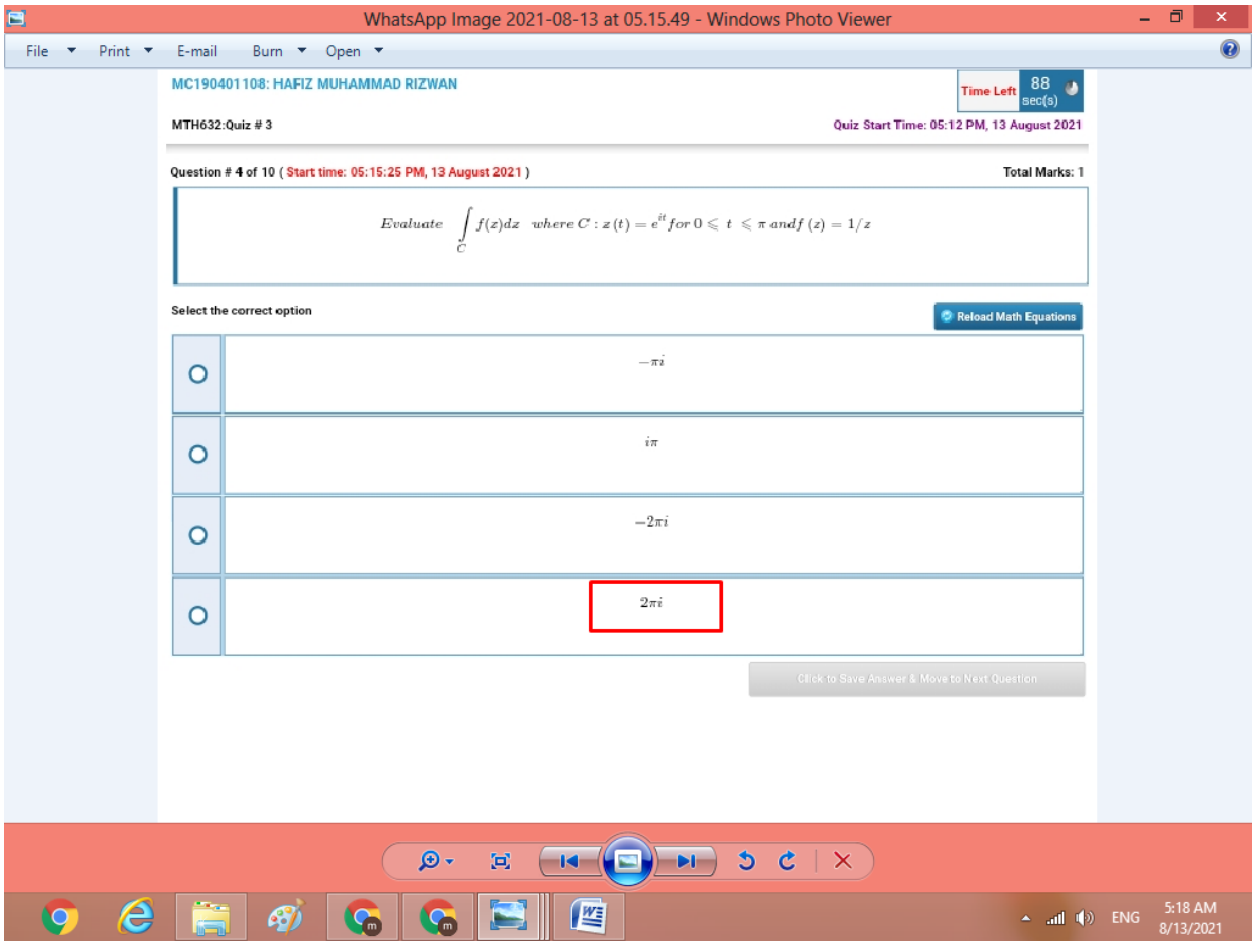
Question # 1 of 10 (Start time: 05:12:56 PM, 13 August 2021)
Total Marks: 1
Let z_0 and z_1 be two points in simply connected domain D and f be an analytic complex valued function in D and C be contour by joining z_0 and z_1 then
Select the correct option
Reload Math Equations
$\int_{z_0}^{z_1} f(s)ds = F(z_1) - F(z_0)$
$\int_{z_0}^{z_1} f(s)ds = F(z_0) + F(z_0)$
$\int_{z_0}^{z_1} f(s)ds = F(z1) + F(z_0)$
$\int_{z_0}^{z_1} f(s)ds = F(z_0) - F(z_1)$
Click to Save Answer & Move to Next Question
ENG
5:14 AM
8/13/2021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MC190401108: HAFIZ MUHAMMAD RIZWAN
Time Left 88 sec(s)
MTH632:Quiz # 3
Quiz Start Time: 05:12 PM, 13 August 2021
Question # 4 of 10 (Start time: 05:15:25 PM, 13 August 2021)
Total Marks: 1
Evaluate $\int_C f(z)dz$ where $C: z(t) = e^{it}$ for $0 \leqslant t \leqslant \pi$ and $f(z) = 1/z$
Select the correct option
Reload Math Equations
$-\pi i$
$i\pi$
$-2\pi i$
$2\pi i$
Click to Save Answer & Move to Next Question
ENG
5:18 AM
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CamScanner 08-13-2021 13.54 3 / 37 89%

Consider function $f(z) = \exp(z^2 + 1)$ *be differentiable and its derivatives are continuous*

Select the correct option

- 1
- 0
- -1
- 2

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Course Announcement | (2) WhatsApp | math632 current file #3 | CamScanner 08-13-2021

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CamScanner 08-13-2021 13.54 6 / 37 75%

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

the correct option

Reload Math Equations

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

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

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

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

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ENG

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MTH632:Quiz # 3

Question # 1 of 10 (Start time: 06:13:49 PM, 13 August 2021)

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

Select the correct option

- 0
- 1
- -1
- 2