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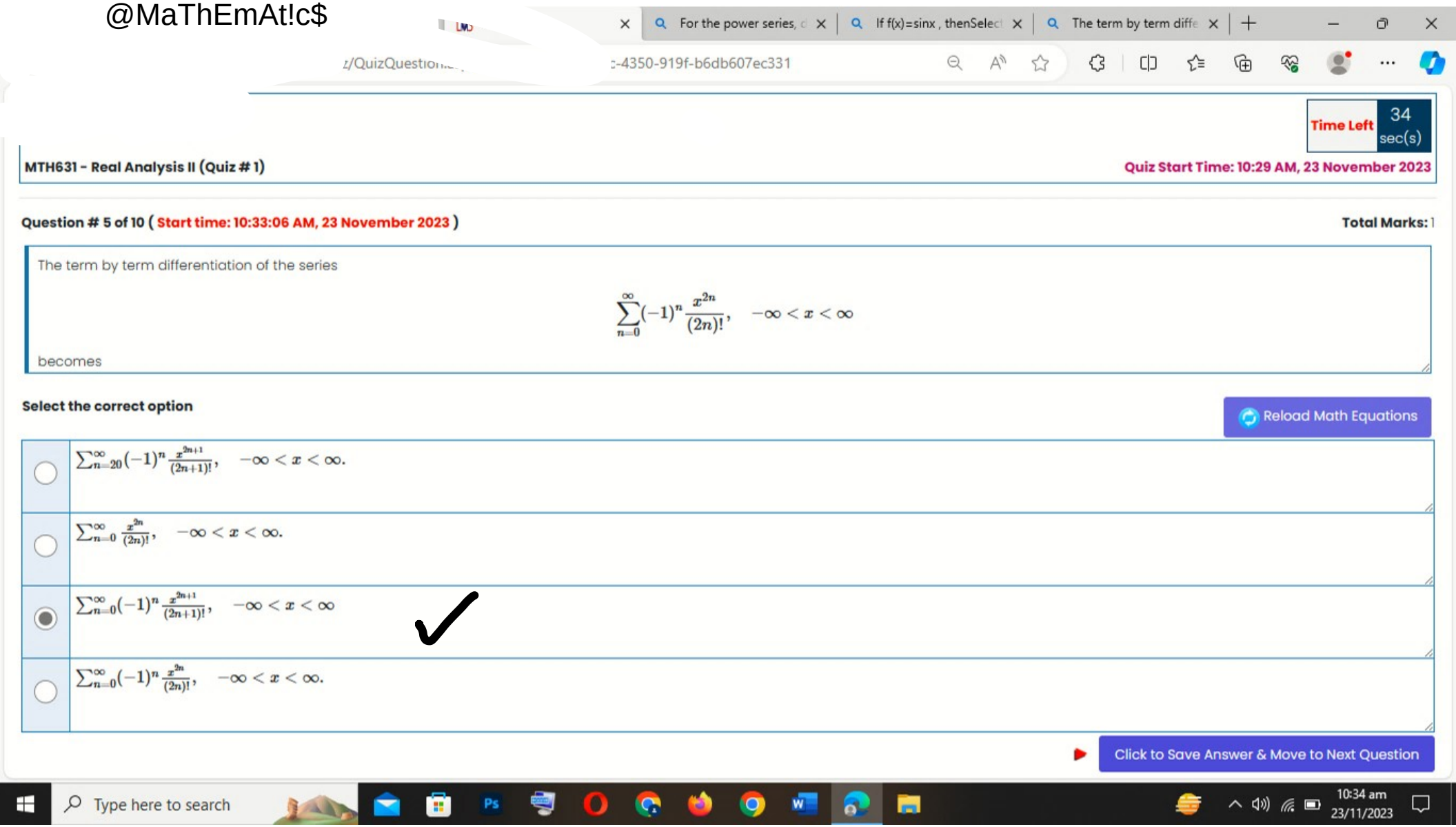
For the power series,
If f(x)=sinx , thenSelec
The term by term diffe
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Time Left 34 sec(s)
MTH631 - Real Analysis II (Quiz # 1)
Quiz Start Time: 10:29 AM, 23 November 2023
Question # 5 of 10 (Start time: 10:33:06 AM, 23 November 2023)
Total Marks: 1
The term by term differentiation of the series
$\sum_{n=0}^{\infty}(-1)^n \frac{x^{2n}}{(2n)!}, \quad -\infty < x < \infty$
becomes
Select the correct option
Reload Math Equations
$\sum_{n=20}^{\infty}(-1)^n \frac{x^{2n+1}}{(2n+1)!}, \quad -\infty < x < \infty.$
$\sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!}, \quad -\infty < x < \infty.$
$\sum_{n=0}^{\infty}(-1)^n \frac{x^{2n+1}}{(2n+1)!}, \quad -\infty < x < \infty$
$\sum_{n=0}^{\infty}(-1)^n \frac{x^{2n}}{(2n)!}, \quad -\infty < x < \infty.$
Click to Save Answer & Move to Next Question
Type here to search
10:34 am
23/11/2023

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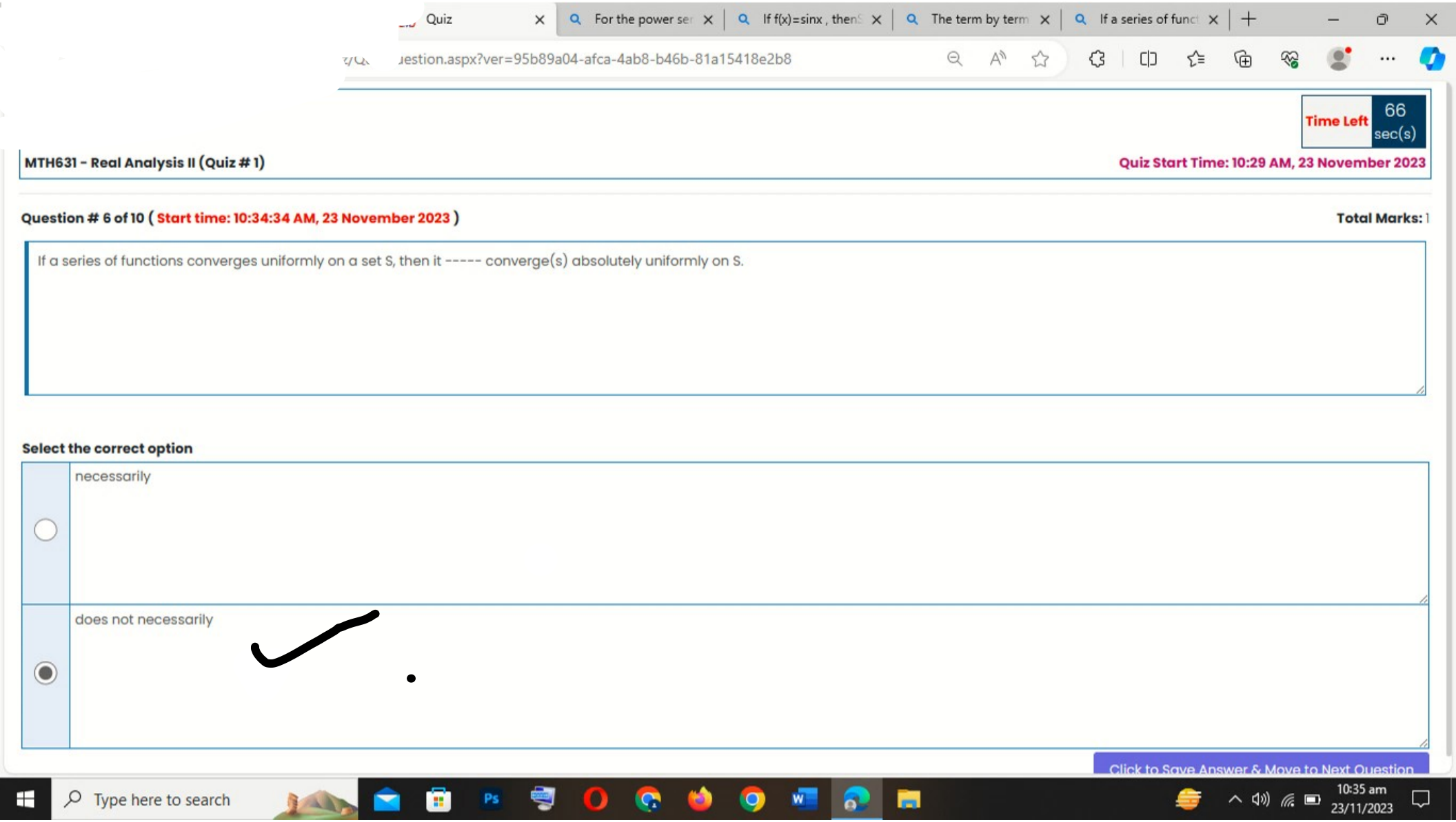
Quiz
For the power ser
If f(x)=sinx , then
The term by term
If a series of funct
uestion.aspx?ver=95b89a04-afca-4ab8-b46b-81a15418e2b8
Time Left 66 sec(s)
MTH631 - Real Analysis II (Quiz # 1)
Quiz Start Time: 10:29 AM, 23 November 2023
Question # 6 of 10 (Start time: 10:34:34 AM, 23 November 2023)
Total Marks: 1
If a series of functions converges uniformly on a set S, then it ----- converge(s) absolutely uniformly on S.
Select the correct option
necessarily
does not necessarily
Click to Save Answer & Move to Next Question
Type here to search
10:35 am
23/11/2023

@MaThEmAt!c$

Quiz | For the power series, | If f(x)=sinx , thenSelec | The uniform converge

...on.aspx?ver=8034f324-7921-46b1-9fae-ab2fc08b2f4c

Time Left 62 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:29 AM, 23 November 2023

Question # 7 of 10 (Start time: 10:35:15 AM, 23 November 2023)

Total Marks: 1

The uniform convergence of the sequence of functions preserves

Select the correct option

Reload Math Equations

- ○ integrability only
- ○ continuity and integrability
- ◉ continuity only ✓
- ○ continuity and differentiability

Click to Save Answer & Move to Next Question

Type here to search

10:36 am
23/11/2023

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Time Left 44 sec(s)

MTH... ...Analysis II (Quiz # 1)

Quiz Start Time: 10:29 AM, 23 November 2023

Question # 8 of 10 (Start time: 10:36:07 AM, 23 November 2023) **Total Marks:** 1

If $f(x)=\sum_{n=0}^{\infty} a_n(x-x_0)^n$, having $R>0$ as a radius of convergence, and $f(x)$ is continuous and differentiable in its intervel of convergence, then radius of convergence of $f'(x)$ is - - - - - - .

Select the correct option

Reload Math Equations

- ○ $\frac{1}{R}, R \neq 0$
- ◉ also R
- ○ $R+h, h>0$
- ○ $R-h, h<0$

Click to Save Answer & Move to Next Question

@MaThEmAt!c$

Quiz | For the power | If f(x)=sinx , th | The uniform c | If f(x)=∑n=0∞ | For x=1,the nt

'QuizQuestion.aspx?ver=66eb6006-90e7-4695-a288-f032d4c702ad

Time Left 65 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:29 AM, 23 November 2023

Question # 9 of 10 (Start time: 10:37:23 AM, 23 November 2023)

Total Marks: 1

For $x = 1$,the nth partial sum S_n of the series:
$1 + x + x^2 + \cdots + x^{n-1}$, is - - - - .

Select the correct option

Reload Math Equations

- 2n
- n-1
- n ✓
- n+1

Click to Save Answer & Move to Next Question

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10:38 am
23/11/2023

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Quiz | For the power | If f(x)=sinx , th | The uniform c | If f(x)=∑n=0∞ | For x=1,the nt

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Time Left 63 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:29 AM, 23 November 2023

Question # 9 of 10 (Start time: 10:37:23 AM, 23 November 2023)

Total Marks: 1

For $x = 1$,the nth partial sum S_n of the series:
$1 + x + x^2 + \cdots + x^{n-1}$, is - - - - .

Select the correct option

Reload Math Equations

- 2n
- n-1
- n ✓
- n+1

Click to Save Answer & Move to Next Question

Type here to search

10:38 am
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Quiz | For the po | If f(x)=sinx | The unifor | If f(x)=∑n= | For x=1,the | tanx is an

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Time Left 36 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:29 AM, 23 November 2023

Question # 10 of 10 (Start time: 10:38:11 AM, 23 November 2023)

Total Marks: 1

$\tan x$ is an odd function, its derivatives of even order are equal to

Select the correct option

Reload Math Equations

- ○ π at $x_0 = 0$.
- ◉ 0 at $x_0 = 0$. ✓
- ○ $\tan x \sec x$ at $x_0 = 0$.
- ○ 1 at $x_0 = 0$.

Click to Save Answer & Move to Next Question

Type here to search

10:39 am
23/11/2023

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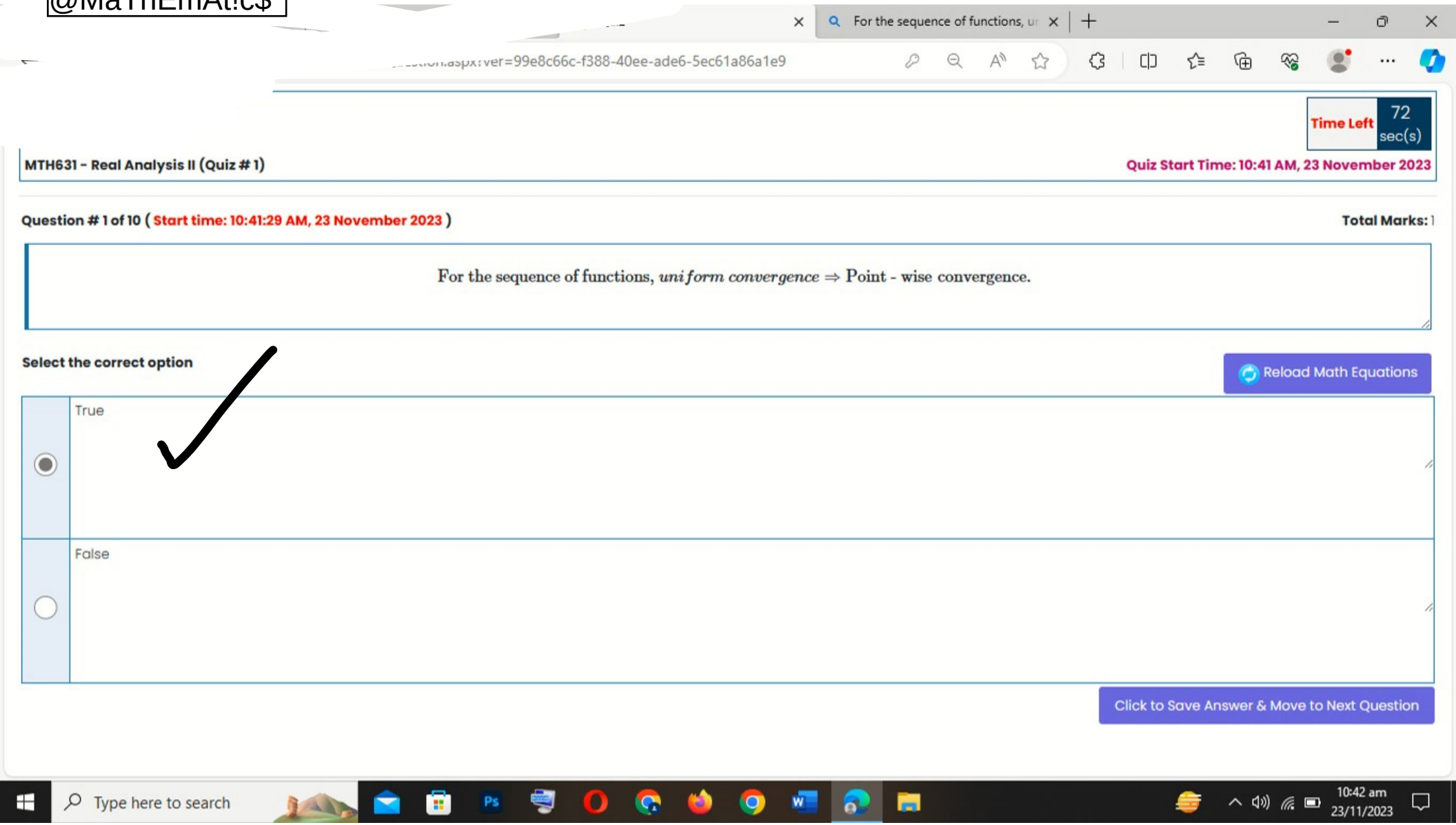
For the sequence of functions, ur
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Time Left 72 sec(s)
MTH631 - Real Analysis II (Quiz # 1)
Quiz Start Time: 10:41 AM, 23 November 2023
Question # 1 of 10 (Start time: 10:41:29 AM, 23 November 2023)
Total Marks: 1
For the sequence of functions, uniform convergence ⇒ Point - wise convergence.
Select the correct option
Reload Math Equations
True
False
Click to Save Answer & Move to Next Question
Type here to search
10:42 am
23/11/2023

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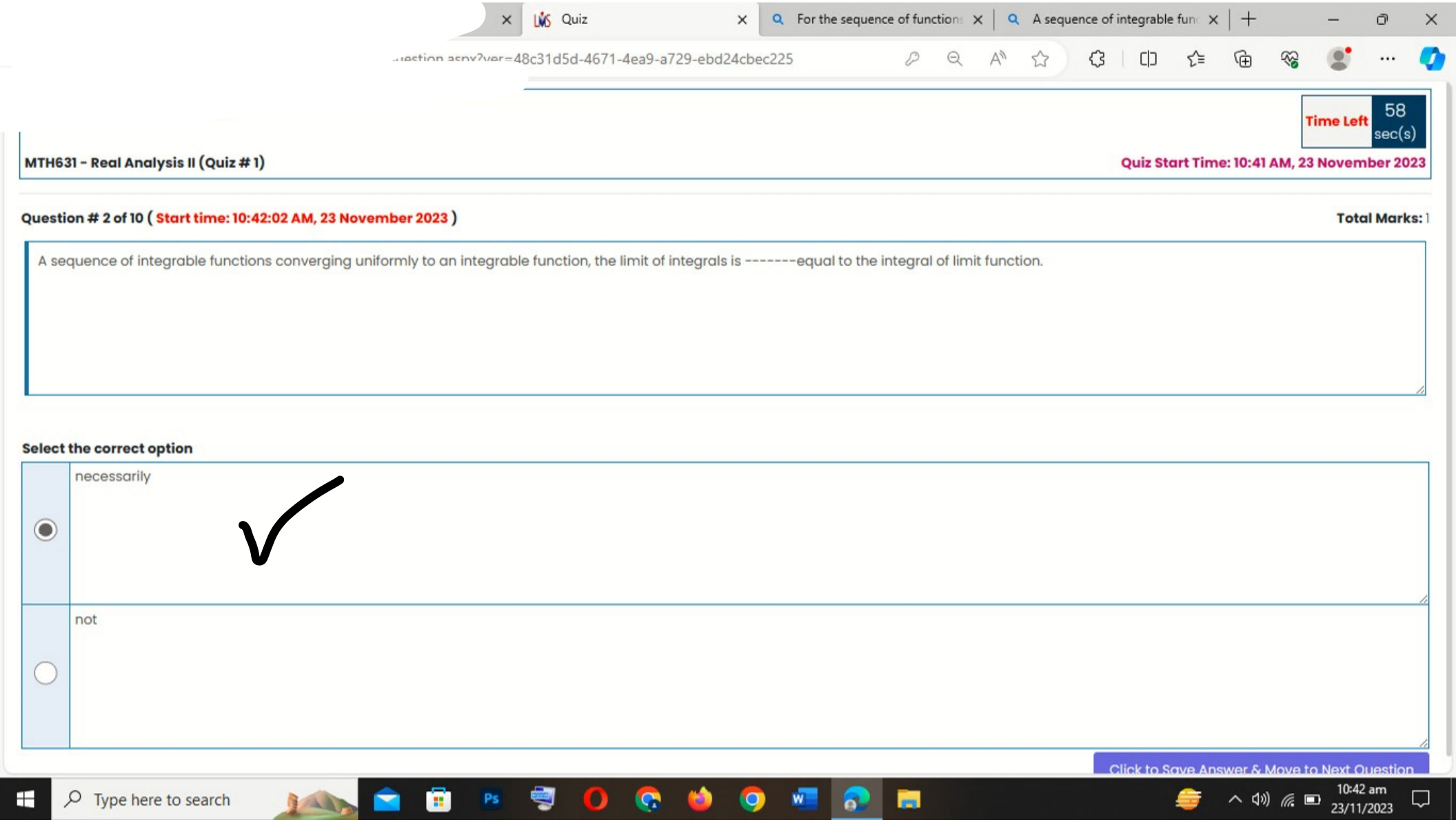
Quiz
For the sequence of functions
A sequence of integrable fun
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Time Left 58 sec(s)
MTH631 - Real Analysis II (Quiz # 1)
Quiz Start Time: 10:41 AM, 23 November 2023
Question # 2 of 10 (Start time: 10:42:02 AM, 23 November 2023)
Total Marks: 1
A sequence of integrable functions converging uniformly to an integrable function, the limit of integrals is -------equal to the integral of limit function.
Select the correct option
necessarily
not
Click to Save Answer & Move to Next Question
Type here to search
10:42 am
23/11/2023

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Quiz | For the sequence of fu | A sequence of integral | For the power series; f

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Time Left 65 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 3 of 10 (Start time: 10:42:55 AM, 23 November 2023)

Total Marks: 1

For the power series; $f(x)=\sum_{n=0}^{\infty}(-1)^n\frac{x^{2n+1}}{(2n+1)!}$, $f'(x)=---$.

Select the correct option

Reload Math Equations

- $\sum_{n=1}^{\infty}(-1)^{n-1}\frac{x^{2n-2}}{(2n-2)!}$
- $\sum_{n=0}^{\infty}(-1)^{n-1}\frac{x^{2n}}{(2n)!}$ ✓

Click to Save Answer & Move to Next Question

Type here to search

10:43 am
23/11/2023

@MaThEmAt!c$

Quiz | For the sequence | A sequence of int | For the power ser | A fundamental pr

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Time Left 74 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 4 of 10 (Start time: 10:43:38 AM, 23 November 2023)

Total Marks: 1

A fundamental property of the exponential function: that $(e^x)^{-1} = e^{-x}$.

Select the correct option

Reload Math Equations

- ○ False.
- ◉ True.

Click to Save Answer & Move to Next Question

Type here to search

10:44 am
23/11/2023

@MaThEmAt!c$

Time Left 59 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 5 of 10 (Start time: 10:44:06 AM, 23 November 2023)

Total Marks: 1

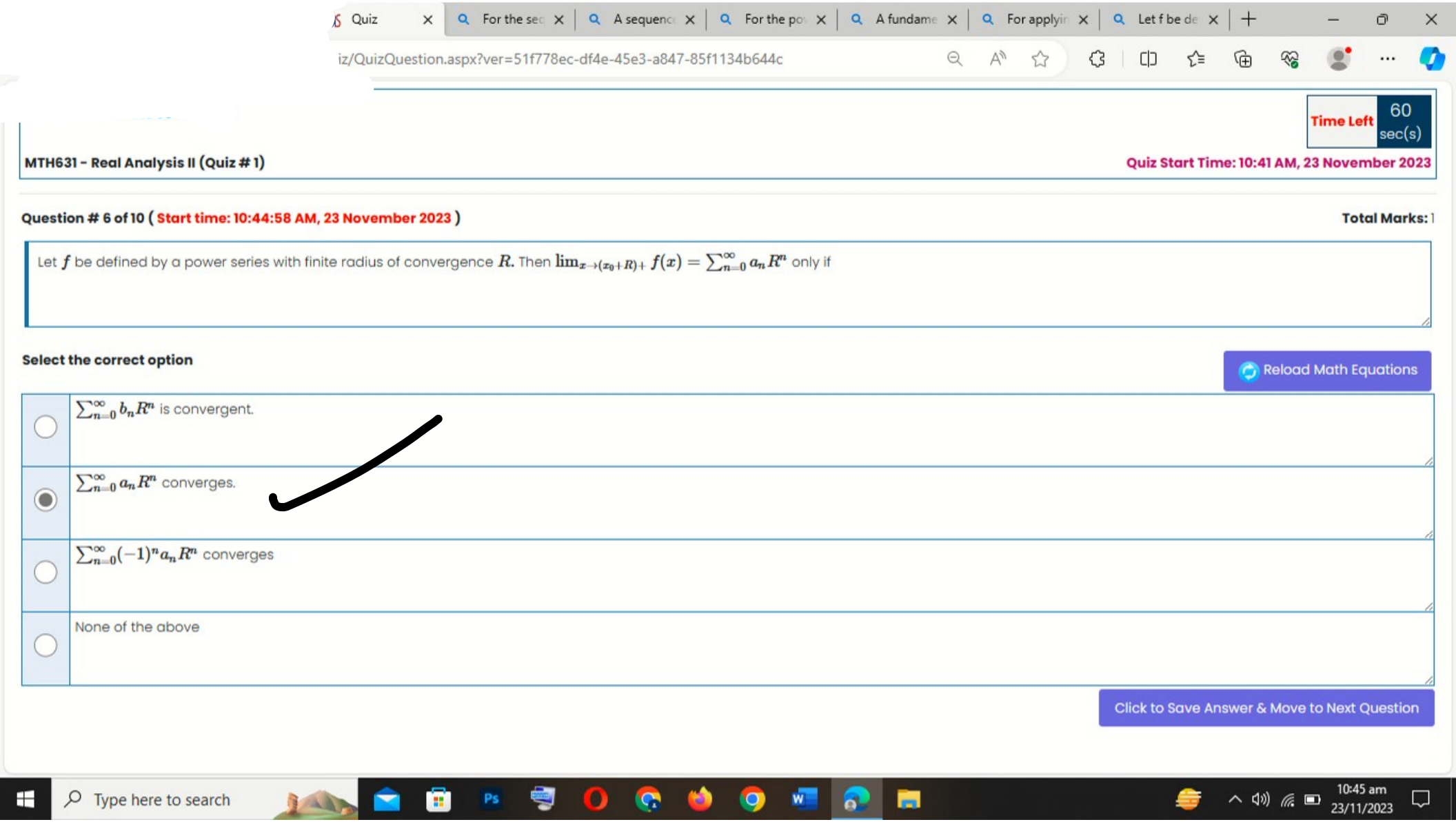
For applying Weierstrass' M - test, which of the following can be taken as dominating series for the uniform convergence of $\sum_{n=1}^{\infty} \frac{e^{-2nx}}{4n^2-1}, x \geqslant 0$?

Select the correct option

Reload Math Equations

- $\sum \frac{1}{e^{-2nx}}$
- $\sum \frac{1}{4n^2-1}$ ✓
- $\sum \frac{1}{4n^2}$
- $\sum \frac{1}{e^{2nx}}$

Click to Save Answer & Move to Next Question



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Time Left 65 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 7 of 10 (Start time: 10:45:49 AM, 23 November 2023) **Total Marks:** 1

Let f be defined by a power series with finite radius of convergence R. Then $\lim_{x\to(x_0+R)^-} f(x) = \sum_{n=0}^{\infty} a_n R^n$ only if

Select the correct option

Reload Math Equations

- (●) $\sum_{n=0}^{\infty} a_n R^n$ converges
- ( ) $\sum_{n=0}^{\infty}(-1)^n a_n R^n$ converges.
- ( ) $\sum_{n=0}^{\infty} b_n R^n$ is uniformly convergent.
- ( ) None of these.

Click to Save Answer & Move to Next Question

Time Left 69 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 8 of 10 (Start time: 10:46:31 AM, 23 November 2023) **Total Marks:** 1

Let $\{F_n(x)\}$ be a sequence of functions on $D \subseteq \mathbb{R}$, if to each $x \in D$ and to each $\varepsilon > 0$ there corresponds a positive integer m such that $|F_n(x) - F(x)| < \varepsilon \ \forall n \geqslant m$, then we say that $\{F_n(x)\}$ converges - - - - - - - - - - , to the function $F(x)$ on D.

Select the correct option

Reload Math Equations

- ( ) Point-wise
- (✓) Uniformly

Click to Save Answer & Move to Next Question

Time Left 65 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 9 of 10 (Start time: 10:47:11 AM, 23 November 2023) **Total Marks:** 1

$$\text{If } \{F_n(x)\}$$

is a sequence of functions defined on domain $D \subseteq \mathbb{R}$,then for $c \in D$ the sequence: $\{F_n(c)\} = \{F_1(c), F_2(c), F_3(c), \ldots\}$ is a sequence of - - - - - .

Select the correct option

Reload Math Equations

- ( ) Natural numbers
- (•) Real numbers

Click to Save Answer & Move to Next Question

Quiz | Let{Fn(x)}be a sequenc | If{Fn(x)}is a sequence c | A power series is conti

/QuizQuestion.aspx?ver=abca76bf-6159-4edf-a5fd-fbe70a2bb179

Time Left 66 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:41 AM, 23 November 2023

Question # 10 of 10 (Start time: 10:47:55 AM, 23 November 2023)

Total Marks: 1

A power series is continuous and differentiable in

Select the correct option

Reload Math Equations

- ○ in every interval $[x_0 - r, x_0 + r]$ such that $0 < r$.
- ◉ its interval of convergence.

Click to Save Answer & Move to Next Question

Type here to search

10:48 am
23/11/2023

Time Left 37 sec(s)

...eal Analysis II (Quiz # 1)

Quiz Start Time: 09:39 AM, 21 November 2023

Question # 6 of 10 (Start time: 09:44:52 AM, 21 November 2023) **Total Marks:** 1

For $|x| \geq 1$, the series: $1 + x + x^2 + \cdots + x^{n-1}$ – – – – – – – – $as\ n \to \infty$.

Select the correct option

Reload Math Equations

- (●) diverges
- ( ) converges
- ( ) converges uniformly
- ( ) converges pointwise

Click to Save Answer & Move to Next Question

Time Left 17 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 09:39 AM, 21 November 2023

Question # 7 of 10 (Start time: 09:46:18 AM, 21 November 2023) **Total Marks:** 1

If $f(x)=\sum_{n=0}^{\infty} a_n(x-x_0)^n$, having $R>0$ as a radius of convergence, and $f(x)$ is continuous and differentiable in its intervel of convergence, then radius of convergence of $f'(x)$ is - - - - - - .

Select the correct option

Reload Math Equations

- ○ $R+h, h>0$
- ◉ also R
- ○ $\frac{1}{R}, R\neq 0$
- ○ $R-h, h<0$

Click to Save Answer & Move to Next Question

Time Left 62 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 09:39 AM, 21 November 2023

Question # 8 of 10 (Start time: 09:48:14 AM, 21 November 2023) **Total Marks:** 1

The uniform convergence of the sequence of functions preserves

Select the correct option

Reload Math Equations

- ○ continuity only
- ○ continuity and differentiability
- ○ integrability only
- ◉ continuity and integrability

Click to Save Answer & Move to Next Question

Time Left 68 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 09:39 AM, 21 November 2023

Question # 9 of 10 (Start time: 09:49:00 AM, 21 November 2023) **Total Marks:** 1

A power series is continuous and differentiable in

Select the correct option

Reload Math Equations

- (●) its interval of convergence.
- ( ) in every interval $[x_0 - r, x_0 + r]$ such that $0 < r$.

Click to Save Answer & Move to Next Question

Quiz | To check uniform | The limit function | Let f be defined b

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Time Left 40 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 09:39 AM, 21 November 2023

Question # 10 of 10 (Start time: 09:49:37 AM, 21 November 2023) **Total Marks:** 1

Let f be defined by a power series with finite radius of convergence R. Then $\lim_{x\to(x_0+R)^-} f(x) = \sum_{n=0}^{\infty} a_n R^n$ only if

Select the correct option

Reload Math Equations

- (●) $\sum_{n=0}^{\infty} a_n R^n$ converges
- ( ) None of these.
- ( ) $\sum_{n=0}^{\infty}(-1)^n a_n R^n$ converges.
- ( ) $\sum_{n=0}^{\infty} b_n R^n$ is uniformly convergent.

Click to Save Answer & Move to Next Question

Type here to search

9:51 am
21/11/2023

Quiz | For the sequence of functions {Fr

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Time Left 55 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 1 of 10 (Start time: 10:06:32 AM, 21 November 2023) **Total Marks:** 1

For the sequence of functions $\{F_n(x)\}$ defined and converges pointwise as;

$F_n(x) = \frac{nx}{1+n^2x^2}, x \in [0,1]$, the value of $\lim_{n\to\infty} \|F_n(x) - F(x)\|_{[0,1]} \Rightarrow \{F_n(x)\}$ is $----$, where $\lim_{n\to\infty} F_n(x) = F(x)$.

Select the correct option

Reload Math Equations

- (●) uniformly convergent
- ( ) not uniformly convergent

Click to Save Answer & Move to Next Question

Type here to search

10:07 am
21/11/2023

Time Left 61 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 2 of 10 (Start time: 10:07:33 AM, 21 November 2023) **Total Marks:** 1

If the sequence of functions defined and converges pointwise as,

$$\lim_{n\to\infty} F_n(x) = \lim_{n\to\infty}\left(1-\frac{x_n}{n}\right) = 1 = F(x), 0 \leqslant x \leqslant 1.$$

Then the value of $\sup_{x\in[0,1]} |F_n(x) - F(x)| = 0 \Rightarrow \{F_n(x)\}$ converges - - - - .

Select the correct option

Reload Math Equations

- not uniformly
- uniformly

Click to Save Answer & Move to Next Question

Quiz | The power series expansion of f(

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Time Left 16 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 3 of 10 (Start time: 10:08:24 AM, 21 November 2023) **Total Marks:** 1

The power series expansion of $f(x) = \sin x$ about $x_0 = 0$ is

Select the correct option

Reload Math Equations

- $\sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!}, \quad -\infty < x < \infty.$
- $\sin x = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!}, \quad -\infty < x < \infty,$
- $\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!}, \quad -\infty < x < \infty,$
- $\sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!}, \quad -\infty < x < \infty,.$

Click to Save Answer & Move to Next Question

Type here to search

10:10 am
21/11/2023

Time Left 70 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 4 of 10 (Start time: 10:10:14 AM, 21 November 2023) **Total Marks:** 1

The limit function of the sequence of functions defined by $F_n(x) = x^n,\ x \in [0,1)$, is - - - - - -

Select the correct option

Reload Math Equations

- ○ Continuous
- ◉ Discontinuous

Click to Save Answer & Move to Next Question

Time Left 55 sec(s)

MTH63... ...ysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 5 of 10 (Start time: 10:10:54 AM, 21 November 2023) **Total Marks:** 1

For applying Weierstrass' M - test, which of the following can be taken as dominating series for the uniform convergence of $\sum_{n=1}^{\infty} \frac{e^{-2nx}}{4n^2-1}, x \geqslant 0$?

Select the correct option

Reload Math Equations

- (●) $\sum \frac{1}{4n^2-1}$
- ( ) $\sum \frac{1}{4n^2}$
- ( ) $\sum \frac{1}{e^{2nx}}$
- ( ) $\sum \frac{1}{e^{-2nx}}$

Click to Save Answer & Move to Next Question

Time Left 51 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 6 of 10 (Start time: 10:11:49 AM, 21 November 2023) **Total Marks:** 1

The limit function of the sequence $\{F_n(x)\}$ defined by;
$F_n(x) = 1 + x + x^2 + \cdots + x^{n-1}, x \in [0,1)$ is - - - - .

Select the correct option

Reload Math Equations

- (●) not defined
- ( ) bounded
- ( ) unbounded
- ( ) discontinuous in the given domain

Click to Save Answer & Move to Next Question

Time Left 65 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 7 of 10 (Start time: 10:13:00 AM, 21 November 2023) **Total Marks:** 1

The condition of absolute convergence (pointwise or uniform) is ------- than the usual convergence(pointwise or uniform).

Select the correct option

- (●) stronger
- ( ) weaker

Click to Save Answer & Move to Next Question

Time Left 62 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 8 of 10 (Start time: 10:13:45 AM, 21 November 2023) **Total Marks:** 1

The method of testing the uniform convergence of a series $\sum f_j$ of functions by definition is hard because - - - .

Select the correct option

Reload Math Equations

- (●) finding the S_n (nth partial sum) is not always easy
- ( ) checking continuity of each f_j is not an easy task

Click to Save Answer & Move to Next Question

Time Left 64 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 9 of 10 (Start time: 10:14:34 AM, 21 November 2023) **Total Marks:** 1

The uniform convergence of the sequence of functions preserves

Select the correct option

Reload Math Equations

- (●) continuity and integrability
- ( ) continuity only
- ( ) integrability only
- ( ) continuity and differentiability

Click to Save Answer & Move to Next Question

Time Left 46 sec(s)

MTH631 - Real Analysis II (Quiz # 1)

Quiz Start Time: 10:06 AM, 21 November 2023

Question # 10 of 10 (Start time: 10:15:20 AM, 21 November 2023) **Total Marks:** 1

A sequence of integrable functions converging uniformly to an integrable function, the limit of integrals is -------equal to the integral of limit function.

Select the correct option

- (●) necessarily
- ( ) not

Click to Save Answer & Move to Next Question