



Grand Quiz Spring 2021

Subject Code MTH101 lecture 1 to 22

Solved by Rizwan Qadeer

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I'm providing 100% correct quiz solution. You can visit my YouTube channel and get more information about all other subjects' quizzes and final year project (CS619).



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<https://www.facebook.com/groups/923887914750307>



<https://www.youtube.com/channel/UCINsFwDiB62SValCcPDZbRQ/playlists>

RIZ MUGHAL (SQA ENGINEER)

MTH101:Grand Quiz

Question # 1 of 30 (Start time: 09:01:09 AM, 21 June 2021)

Is the function $f(x) = \tan(x)$ continuous at $x = \pi$? If not, why?

Select the correct option

- | | |
|----------------------------------|----------------------------------|
| <input checked="" type="radio"/> | f is continuous at $x = \pi$. |
| <input type="radio"/> | $f(\pi)$ is not defined. |
- 



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RIZ MUGHAL (SQA ENGINEER)



MTH101:Grand Quiz

Question # 1 of 30 (Start time: 09:01:09 AM, 21 June 2021)

Is the function $f(x) = \tan(x)$ continuous at $x = \pi$? If not, why?

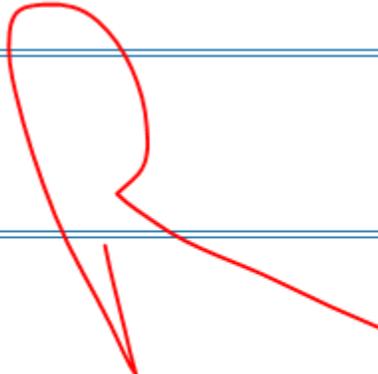
Select the correct option

- | | |
|----------------------------------|----------------------------------|
| <input checked="" type="radio"/> | f is continuous at $x = \pi$. |
| <input type="radio"/> | $f(\pi)$ is not defined. |
- 

Question # 2 of 30 (Start time: 09:01:29 AM, 21 June 2021)

For the curve: $f(t) = -2t+3$, the average rate of change of 'f(t)' over the interval $[-1,0]$ is _____.

Select the correct option

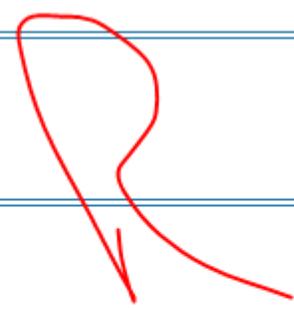
- | | |
|----------------------------------|----|
| <input type="radio"/> | 1 |
| <input type="radio"/> | 2 |
| <input type="radio"/> | -1 |
| <input checked="" type="radio"/> | -2 |
- 

Question # 3 of 30 (Start time: 09:01:48 AM, 21 June 2021)

Let f be defined on an interval, and x_1, x_2 are the points in that interval. Then f is increasing on the interval if $f(x_1) < f(x_2)$ whenever

Select the correct option

[Reload M](#)

- | | |
|----------------------------------|----------------|
| <input type="radio"/> | $x_1 > x_2$ |
| <input type="radio"/> | $x_1 \geq x_2$ |
| <input checked="" type="radio"/> | $x_1 < x_2$ |
| <input type="radio"/> | $x_1 = x_2$ |
- 

Question # 4 of 30 (Start time: 09:02:05 AM, 21 June 2021)

If $g(X) = 3x^2$ then $g'(2)$ will be ?

Select the correct option



- | | |
|----------------------------------|-----|
| <input type="radio"/> | -12 |
| <input type="radio"/> | 18 |
| <input checked="" type="radio"/> | 12 |
| <input type="radio"/> | 15 |
-

Question # 5 of 30 (Start time: 09:02:20 AM, 21 June 2021)

Let $f(x) = x + 5$ and $g(x) = x^2 - 3$ then $f(g(x)) = ?$

Select the correct option

[Reload Mat](#)

- | | |
|----------------------------------|------------|
| <input type="radio"/> | $x^2 - 2$ |
| <input type="radio"/> | $2x^2 + 2$ |
| <input checked="" type="radio"/> | $x^2 + 2$ |
| <input type="radio"/> | $x^2 + 1$ |

Question # 6 of 30 (Start time: 09:02:36 AM, 21 June 2021)

If $y=2x$ then instantaneous rate of change of 'y' w.r.t 'x' at 'x =-2' is

Select the correct option

- | | |
|----------------------------------|----|
| <input type="radio"/> | -1 |
| <input type="radio"/> | 3 |
| <input type="radio"/> | 1 |
| <input checked="" type="radio"/> | 2 |
- 

Question # 7 of 30 (Start time: 09:02:54 AM, 21 June 2021)

$$\lim [f(x)]^n =$$

Select the correct option



- | | |
|----------------------------------|-----------------|
| <input type="radio"/> | $[\lim f(x)]$ |
| <input type="radio"/> | $[f(x)]^n$ |
| <input checked="" type="radio"/> | $[\lim f(x)]^n$ |
| <input type="radio"/> | $n[\lim f(x)]$ |

Question # 8 of 30 (Start time: 09:03:09 AM, 21 June 2021)

$$\log_b M^p = \underline{\hspace{2cm}}.$$

Select the correct option

Rel

- | | |
|----------------------------------|----------------------|
| <input type="radio"/> | $-\log_b M$ |
| <input checked="" type="radio"/> | $p \log_b M$ |
| <input type="radio"/> | $\log_b \frac{p}{M}$ |
| <input type="radio"/> | $M \log_b p$ |
- 

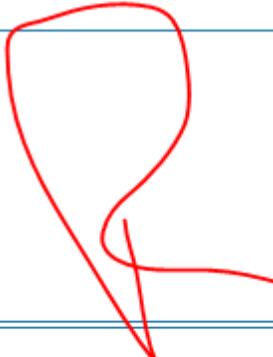
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Question # 9 of 30 (Start time: 09:03:34 AM, 21 June 2021)

If the function f and g are continuous at c , then $f \circ g$ is at c .

Select the correct option

<input type="radio"/>	Discontinuous
<input checked="" type="radio"/>	Continuous



Question # 10 of 30 (Start time: 09:04:07 AM, 21 June 2021)

If

$$f(x) = 4x^2 + 2x$$

, then which of the following is true about it.

Select the correct option

- | | |
|----------------------------------|--|
| <input checked="" type="radio"/> | Its derivative with respect to x is $8x + 2$. |
| <input type="radio"/> | None of these. |
| <input type="radio"/> | Its derivative with respect to x is $8x$. |
| <input type="radio"/> | Its derivative with respect to x is $2x$. |
- 

Question # 11 of 30 (Start time: 09:04:26 AM, 21 June 2021)

If $f(x) = \cos(2x)$ then its derivative by chain rule is

Select the correct option

[Reload](#)

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | $\sin(x).2$ |
| <input checked="" type="radio"/> | $-\sin(2x).2$ |
| <input type="radio"/> | $-\sin(x).2$ |
| <input type="radio"/> | $\sin(2x).2$ |
- 

Question # 12 of 30 (Start time: 09:04:45 AM, 21 June 2021)

If $f(x) = x^5$ and $g(x) = x^2$, then the derivative of $f(x) \times g(x)$ is

Select the correct option

[Reload](#)

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | $3x^2$ |
| <input checked="" type="radio"/> | None of these |
| <input type="radio"/> | $6x^3$ |
| <input type="radio"/> | $7x^2$ |
- 

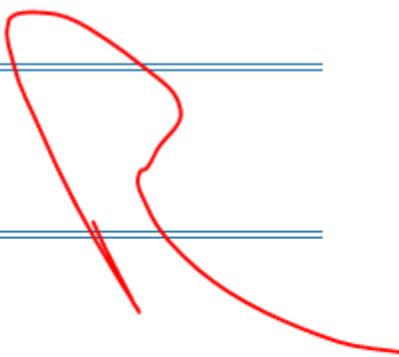
Question # 13 of 30 (Start time: 09:05:06 AM, 21 June 2021)

T

$$\frac{d}{dx}(\ln u) = \text{_____} .$$

Select the correct option

[Reload Math](#)

- | | |
|----------------------------------|-----------------------------------|
| <input checked="" type="radio"/> | $\frac{1}{u} \cdot \frac{du}{dx}$ |
| <input type="radio"/> | $\frac{1}{u}$ |
| <input type="radio"/> | $\frac{du}{dx}$ |
| <input type="radio"/> | $x \ln x - x + C$ |
- 

Question # 14 of 30 (Start time: 09:05:24 AM, 21 June 2021)

If the graph of a function oscillates between 1 and -1 then its limit is

Select the correct option

<input type="radio"/>	0
<input checked="" type="radio"/>	Does not exist
<input type="radio"/>	1
<input type="radio"/>	-1

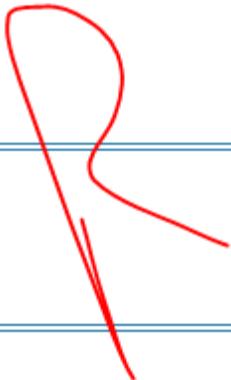


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Question # 15 of 30 (Start time: 09:06:05 AM, 21 June 2021)

If $f(x) = \sin(x)$ and $g(x) = \sin(2x)$, then the derivative of $f(x) + g(x)$ is _____

Select the correct option

- | | |
|----------------------------------|-------------------------|
| <input type="radio"/> | None of these. |
| <input checked="" type="radio"/> | $\cos(x) + 2\cos(2x)$. |
| <input type="radio"/> | $\cos(x) + 2\sin(x)$. |
| <input type="radio"/> | $\cos(x) + \sin(2x)$. |
- 

Question # 16 of 30 (Start time: 09:06:33 AM, 21 June 2021)

If $f(x) = \sin x$ and $g(x) = x^2$, then the derivative of $\frac{f(x)}{g(x)}$ is

Select the correct option

[Reload Math](#)

- | | |
|----------------------------------|----------------------------------|
| <input type="radio"/> | None of these. |
| <input type="radio"/> | $[x^2 \cos(x) - 2x \sin(x)]/x^2$ |
| <input checked="" type="radio"/> | $[x^2 \cos(x) - 2x \sin(x)]/x^4$ |
| <input type="radio"/> | $[x^2 \cos(x) + 2x \sin(x)]/x^4$ |

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Question # 17 of 30 (Start time: 09:06:48 AM, 21 June 2021)

A horizontal line has slope _____.

Select the correct option

- | | |
|----------------------------------|---|
| <input type="radio"/> | 2 |
| <input type="radio"/> | 3 |
| <input type="radio"/> | 1 |
| <input checked="" type="radio"/> | 0 |
- 

Question # 18 of 30 (Start time: 09:07:48 AM, 21 June 2021)

The vertical asymptote of the function $f(x) = \frac{3x^2 + 1}{2 - x}$ is

Select the correct option

[Reload Mat](#)

<input checked="" type="radio"/>	2
<input type="radio"/>	-2
<input type="radio"/>	∞
<input type="radio"/>	0



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Question # 20 of 30 (Start time: 09:08:31 AM, 21 June 2021)

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The function f is said to be _____ on (a, b) , if $f''(x) > 0$ on that interval.

Select the correct option

[Reload Math Equ](#)

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | None of these |
| <input checked="" type="radio"/> | Concave up |
| <input type="radio"/> | Constant |
| <input type="radio"/> | Concave down |
- 

Question # 21 of 30 (Start time: 09:09:33 AM, 21 June 2021)

What is the derivative of

$$7x^3$$

Select the correct option

- | | |
|----------------------------------|---------------|
| <input checked="" type="radio"/> | $21x^2$ |
| <input type="radio"/> | $21x^3$ |
| <input type="radio"/> | None of these |
| <input type="radio"/> | $7x^4$ |

Question # 22 of 30 (Start time: 09:09:47 AM, 21 June 2021)

The equation of the tangent line passing through the point $(-3,2)$ having the slope 4 is

Select the correct option

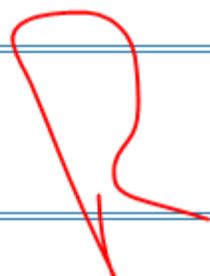
- | | |
|----------------------------------|---------------|
| <input type="radio"/> | $y+2=-4(x+3)$ |
| <input type="radio"/> | $y+2=4(x+3)$ |
| <input type="radio"/> | $y-2=4(x-3)$ |
| <input checked="" type="radio"/> | $y-2=4(x+3)$ |
- 

Question # 24 of 30 (Start time: 09:11:12 AM, 21 June 2021)

If $f(x) = 2x + 2$ and $g(x) = x^2 + 3x$, then the derivative of $f(x) + g(x)$ is

Select the correct option

[Reload Math](#)

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | $2 + 5x$ |
| <input type="radio"/> | $3 + 5x$ |
| <input type="radio"/> | None of these |
| <input checked="" type="radio"/> | $5 + 2x$ |
- 

Question # 25 of 30 (Start time: 09:11:33 AM, 21 June 2021)

Total

What is the derivative of $2x^2 \sin(x^5)$?

Select the correct option

[Reload Math Equ](#)

- | | |
|----------------------------------|--------------------|
| <input type="radio"/> | $2x^2 \cos(x^5)$ |
| <input type="radio"/> | $-10x^2 \cos(x^5)$ |
| <input type="radio"/> | $10x^2 \cos(x^5)$ |
| <input checked="" type="radio"/> | None of these |

Question # 26 of 30 (Start time: 09:11:56 AM, 21 June 2021)

What is the derivative of $3\cot(2x)$

Select the correct option

Reloa

- | | |
|----------------------------------|--------------------------------|
| <input checked="" type="radio"/> | $-6\operatorname{cosec}^2(2x)$ |
| <input type="radio"/> | None of these |
| <input type="radio"/> | $6\operatorname{cosec}^2(2x)$ |
| <input type="radio"/> | $-3\operatorname{cosec}^2(2x)$ |

Question # 27 of 30 (Start time: 09:12:11 AM, 21 June 2021)

$$\text{If } y = x^2 + 9x, \text{ then } \frac{dy}{dx} = \text{_____}.$$

Select the correct option

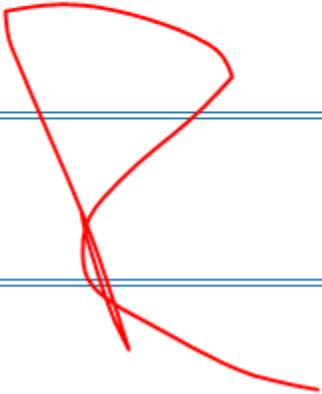


- | | |
|----------------------------------|-----------|
| <input checked="" type="radio"/> | $2x + 9$ |
| <input type="radio"/> | 9 |
| <input type="radio"/> | $2x$ |
| <input type="radio"/> | $2x + 9x$ |
- 

Question # 28 of 30 (Start time: 09:12:27 AM, 21 June 2021)

The slope of tangent lines for the graph of constant function is

Select the correct option

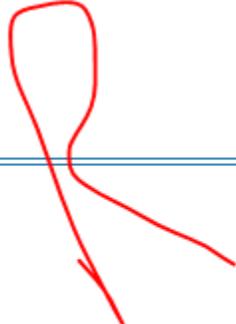
- | | |
|----------------------------------|-----------|
| <input checked="" type="radio"/> | 0 |
| <input type="radio"/> | Undefined |
| <input type="radio"/> | 1 |
| <input type="radio"/> | -1 |
- 

Question # 29 of 30 (Start time: 09:13:11 AM, 21 June 2021)

What is the derivative of $\sin(x^2)$?

Select the correct option

Re

- | | |
|----------------------------------|---------------|
| <input type="radio"/> | None of these |
| <input type="radio"/> | $2 \cos x^2$ |
| <input checked="" type="radio"/> | $2x \cos x^2$ |
| <input type="radio"/> | $2 \cos x$ |
- 

Question # 30 of 30 (Start time: 09:13:27 AM, 21 June 2021)

Total |

If $f(x) = x^5 + \sin 2x + \tan 2x + \cos 3x$, then derivative of $f(x)$ will be

Select the correct option

[Reload Math Equ](#)

- | | |
|----------------------------------|---|
| <input checked="" type="radio"/> | $5x^4 + 2\cos(2x) + 2\sec^2(2x) - 3\sin(3x).$ |
| <input type="radio"/> | $5x^4 + 2\cos(2x) + 2\sec^2(2x) + 3\sin(3x).$ |
| <input type="radio"/> | None of these. |
| <input type="radio"/> | $5x^4 + 2\cos(2x) + \sec^2(2x) - 3\sin(3x)$ |