



# MTH301 QUIZ(1)

Lecture: 5 to 10

## RIZ MUGHAL SQA ENGINEER:

I'm providing 100% correct quiz solution.

You can visit my YouTube channel for more quiz solution, also final year project including project assignments, and viva.

## YOUTUBE:

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

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MTH301:Quiz 1


Question # 1 of 10 ( Start time: 02:42:51 AM, 25 May 2021 )

The product of continuous functions is continuous

Select the correct option

<input type="radio"/>	False
<input checked="" type="radio"/>	True

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MTH301:Quiz 1

Question # 2 of 10 ( Start time: 02:43:06 AM, 25 May 2021 )

Length or magnitude of a unit vector is-----.

Select the correct option

<input checked="" type="radio"/>	1
<input type="radio"/>	0

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Question # 3 of 10 ( Start time: 02:43:20 AM, 25 May 2021 )


Range of the function is

$$f(x, y, z) = \sqrt{x^2 + y^2 + z^2}$$

Select the correct option

<input type="radio"/>	$(-\infty, 0)$
<input type="radio"/>	$(0, +\infty)$
<input type="radio"/>	$(-\infty, +\infty)$
<input checked="" type="radio"/>	$[0, +\infty)$

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Question # 4 of 10 ( Start time: 02:43:38 AM, 25 May 2021 )

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface:

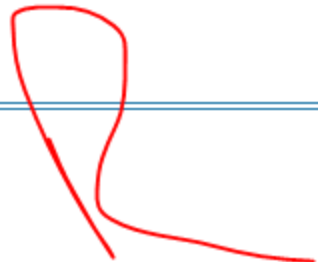
$$z = f(x, y)$$

is Infinity, then tangent plane at that point will be perpendicular to-----.

Select the correct option

<input type="radio"/>	YZ-plane
<input type="radio"/>	XZ-plane
<input checked="" type="radio"/>	XY-plane
<input type="radio"/>	Any arbitrary plane

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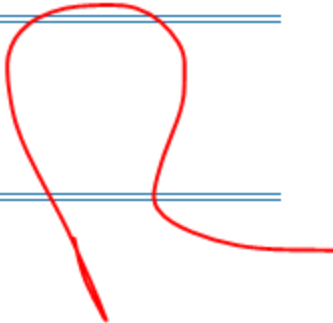
Question # 5 of 10 ( Start time: 02:43:54 AM, 25 May 2021 )

To

Range of the function  $y = 3x^2 - 2$  is

Select the correct option

[Reload Math](#)

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | <i>All real numbers</i>                             |
| <input checked="" type="radio"/> | <i>All real numbers with <math>y \geq -2</math></i> |
| <input type="radio"/>            | <i>All real numbers with <math>y &gt; 2</math></i>  |
| <input type="radio"/>            | <i>All real numbers with <math>y &lt; 2</math></i>  |
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Question # 6 of 10 ( Start time: 02:44:14 AM, 25 May 2021 )

Total Marks:

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface: " $z=f(x,y)$ " is zero, then tangent plane at that point will be-----to XY-plane.

Select the correct option

<input type="radio"/>	perpendicular
<input checked="" type="radio"/>	parallel

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Question # 7 of 10 ( Start time: 02:44:29 AM, 25 May 2021 )

Total Marks: 1

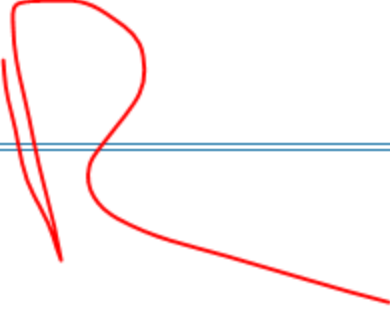
To find the limit of  $f(x, y) = \frac{x^2 + y}{x^2}$  at  $(0, 0)$  if we approach  $(0, 0)$  through the line  $x - axis$ , we get the value

Select the correct option

[Reload Math Equations](#)

<input checked="" type="radio"/>	1
<input type="radio"/>	0
<input type="radio"/>	None of these
<input type="radio"/>	2

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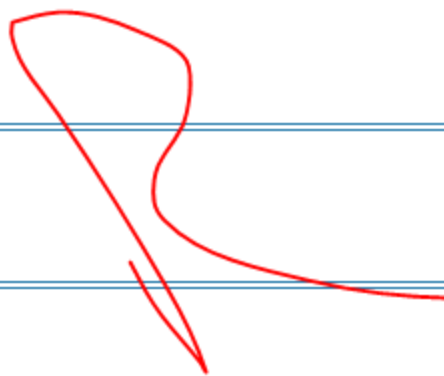


Question # 8 of 10 ( Start time: 02:45:00 AM, 25 May 2021 )

Total Marks

If the velocity ( $V_1$ ) of a car is 20m/s and velocity ( $V_2$ ) of bike is 40m/s, where both velocities are southward then which of the following would be the dot product of these velocities?

Select the correct option

- |                                  |      |
|----------------------------------|------|
| <input type="radio"/>            | -800 |
| <input type="radio"/>            | Zero |
| <input checked="" type="radio"/> | 800  |
| <input type="radio"/>            | 2    |
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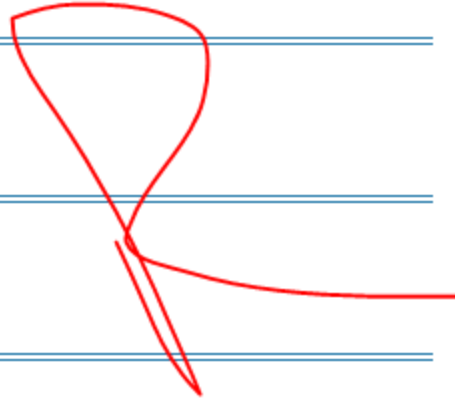
Question # 9 of 10 ( Start time: 02:45:17 AM, 25 May 2021 )

Two vectors A and B are \_\_\_\_\_ if and only if their scalar product is equal to zero.

Select the correct option

- parallel
- equal
- perpendicular
- opposite

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Question # 10 of 10 ( Start time: 02:45:39 AM, 25 May 2021 )

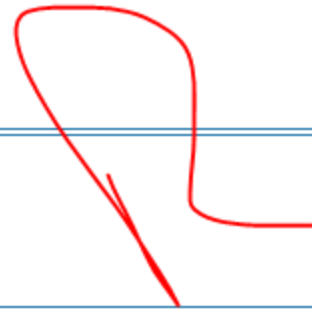
If  $w = f(x)$  where  $x = g(r, s)$  then  $\frac{\partial w}{\partial s} =$

Select the correct option

[Reload](#)

<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{dr} \frac{\partial r}{\partial s}$
<input checked="" type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{dx} \frac{\partial x}{\partial s}$
<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial s}$
<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial r}$

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2<sup>nd</sup> account

Question # 1 of 10 ( Start time: 01:12:23 PM, 25 May 2021 )

Domain of the following function is

$$f(x, y, z) = z \ln xy$$

Select the correct option

Reloa

<input type="radio"/>	$\forall x, y, z \in \mathbb{R}$
<input type="radio"/>	$\forall z \in \mathbb{R}; z > 0$
<input checked="" type="radio"/>	$\forall x, y \in \mathbb{R}; xy > 0$
<input type="radio"/>	$\forall x, y \in \mathbb{R}; xy \neq 0$

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Question # 2 of 10 ( Start time: 01:12:45 PM, 25 May 2021 )


Total Marks: 1

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface: " $z=f(x,y)$ " is zero, then tangent plane at that point will be-----to XY-plane.

Select the correct option

<input type="radio"/>	perpendicular
<input checked="" type="radio"/>	parallel

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Question # 3 of 10 ( Start time: 01:12:59 PM, 25 May 2021 )


The partial derivative with respect to  $x$  of  $f(x, y) = 3x^2y + 2y^2$  is \_\_\_\_\_.

Select the correct option

[Reload M](#)

<input type="radio"/>	$6xy + 4y$
<input type="radio"/>	$4y$
<input type="radio"/>	$6xy + 2y^2$
<input checked="" type="radio"/>	$6xy$

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Question # 4 of 10 ( Start time: 01:13:16 PM, 25 May 2021 )

Total M

If  $f$  and its partial derivatives of the first, second and third orders are continuous on an open set, then at each point of the set is \_\_\_\_\_.

Select the correct option

[Reload Math Equa](#)

<input type="radio"/>	$\frac{\partial^3 f}{\partial y^2 \partial x} = \frac{\partial^3 f}{\partial x \partial y^2}$
<input type="radio"/>	$\frac{\partial^3 f}{\partial y^2 \partial x} = \frac{\partial^3 f}{\partial y \partial x \partial y}$
<input checked="" type="radio"/>	$\frac{\partial^3 f}{\partial y^2 \partial x} = \frac{\partial^3 f}{\partial y \partial x \partial y} = \frac{\partial^3 f}{\partial x \partial y^2}$
<input type="radio"/>	$\frac{\partial^3 f}{\partial y \partial x \partial y}$

Question # 5 of 10 ( Start time: 01:13:38 PM, 25 May 2021 )

Total Marks: 1

$$\text{If } \lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} f(x,y,z) = L_1 \text{ and } \lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} g(x,y,z) = L_2$$

Select the correct option

[Reload Math Equations](#)

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | $\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} \frac{f(x,y,z)}{g(x,y,z)} = \frac{L_1}{L_2} ; L_2 \leq 0$ |
| <input type="radio"/>            | $\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} \frac{f(x,y,z)}{g(x,y,z)} = \frac{L_1}{L_2} ; L_2 = 0$    |
| <input type="radio"/>            | $\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} \frac{f(x,y,z)}{g(x,y,z)} = \frac{L_1}{L_2} ; L_2 \geq 0$ |
| <input checked="" type="radio"/> | $\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} \frac{f(x,y,z)}{g(x,y,z)} = \frac{L_1}{L_2} ; L_2 \neq 0$ |
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- R



Question # 6 of 10 ( Start time: 01:14:25 PM, 25 May 2021 )

Total M

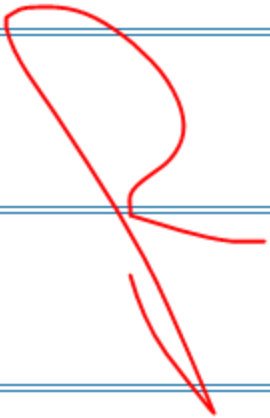
If  $f(x, y) = yx^2 + 2$ , then  $\frac{\partial^2 f}{\partial y^2}$  is \_\_\_\_\_.

Select the correct option

[Reload Math Equat](#)

<input type="radio"/>	$2xy$
<input type="radio"/>	$x^2$
<input type="radio"/>	$2y$
<input checked="" type="radio"/>	$0$

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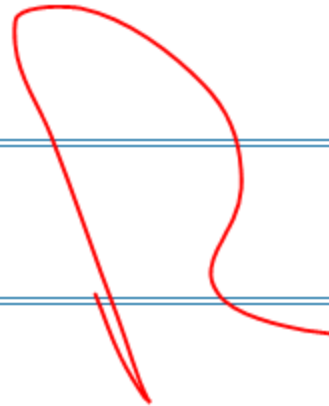
Question # 7 of 10 ( Start time: 01:14:45 PM, 25 May 2021 )

The chain rule can be taken as the derivative of the outer function and multiplying it times the derivative of the .....

Select the correct option

- composite function
- the inner function
- real valued function
- single valued function

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Question # 8 of 10 ( Start time: 01:14:59 PM, 25 May 2021 )

Two vectors are opposite vectors if they have \_\_\_\_\_.

Select the correct option

- |                                  |                        |
|----------------------------------|------------------------|
| <input type="radio"/>            | (c) opposite direction |
| <input checked="" type="radio"/> | (d) Both (a) and (c).  |
| <input type="radio"/>            | (b) opposite magnitude |
| <input type="radio"/>            | (a) same magnitude     |

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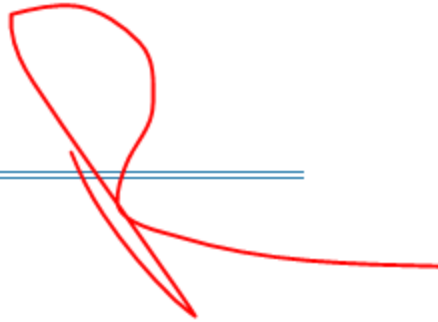
Question # 9 of 10 ( Start time: 01:15:12 PM, 25 May 2021 )

Magnitude of the Force vector:  $F = -30\text{Newton}$ , is -----.

Select the correct option

<input type="radio"/>	-30 Newton
<input checked="" type="radio"/>	30 Newton

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Question # 10 of 10 ( Start time: 01:15:23 PM, 25 May 2021 )

Two vectors A and B are \_\_\_\_\_ if and only if their scalar product is equal to zero.

Select the correct option

<input checked="" type="radio"/>	perpendicular
<input type="radio"/>	equal
<input type="radio"/>	parallel
<input type="radio"/>	opposite

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Question # 1 of 10 ( Start time: 01:19:03 PM, 25 May 2021 )

Which of the following should be the scalar multiple ( $\lambda$ ) such that force :  $F_1 = 20N$  and  $F_2 = -60N$  satisfy the

Select the correct option

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<input checked="" type="radio"/>	$\lambda = -1/3$
<input type="radio"/>	$\lambda = -3$
<input type="radio"/>	$\lambda = 3$
<input type="radio"/>	$\lambda = 1/3$

MTH301:Quiz 1

Question # 2 of 10 ( Start time: 01:19:57 PM, 25 May 2021 )

A zero vector has magnitude equal to zero and ----- direction.

Select the correct option

- |                                  |           |
|----------------------------------|-----------|
| <input type="radio"/>            | no        |
| <input type="radio"/>            | downward  |
| <input checked="" type="radio"/> | arbitrary |
| <input type="radio"/>            | upward    |

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Question # 3 of 10 ( Start time: 01:20:14 PM, 25 May 2021 )

If  $w = f(x, y)$  where  $x = g(r, s)$  then  $\frac{\partial w}{\partial s} =$

Select the correct option

[Reload](#)

<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{dx} \frac{\partial x}{\partial s} + \frac{dw}{dr} \frac{\partial r}{\partial s}$
<input checked="" type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial r} + \frac{dw}{dy} \frac{\partial y}{\partial s}$
<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial s} - \frac{dw}{dy} \frac{\partial y}{\partial s}$
<input type="radio"/>	$\frac{\partial w}{\partial s} = \frac{dw}{dr} \frac{\partial r}{\partial s} - \frac{dw}{dr} \frac{\partial r}{\partial s}$

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Question # 4 of 10 ( Start time: 01:20:28 PM, 25 May 2021 )

The chain rule states that the derivative of  $f(g(x))$  is.....

Select the correct option

- |                                  |                        |
|----------------------------------|------------------------|
| <input checked="" type="radio"/> | $f(g(x)) \cdot g'(x)$  |
| <input type="radio"/>            | $f(g(x)) \cdot f'(x)$  |
| <input type="radio"/>            | $f(g(x)) \cdot g(x)$   |
| <input type="radio"/>            | $f'(g(x)) \cdot g'(x)$ |

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Question # 5 of 10 ( Start time: 01:20:41 PM, 25 May 2021 )

Total M

The order of differentiation in an  $n$ th order partial derivative can be change without affecting the final result whenever the function and all its partial derivatives of order less than or equal to ' $n$ ' are -----.

Select the correct option

- |                                  |                    |
|----------------------------------|--------------------|
| <input type="radio"/>            | not differentiable |
| <input type="radio"/>            | not continuous     |
| <input type="radio"/>            | differentiable     |
| <input checked="" type="radio"/> | continuous         |

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Question # 6 of 10 ( Start time: 01:20:56 PM, 25 May 2021 )

For which of the following values of "y", the partial derivative of

$$z = \frac{2}{y(x - 1)}$$

Select the correct option

- |                                  |         |
|----------------------------------|---------|
| <input checked="" type="radio"/> | R-{0}   |
| <input type="radio"/>            | R-{1,0} |
| <input type="radio"/>            | R-{1}   |
| <input type="radio"/>            | R       |

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R

Question # 7 of 10 ( Start time: 01:21:09 PM, 25 May 2021 )

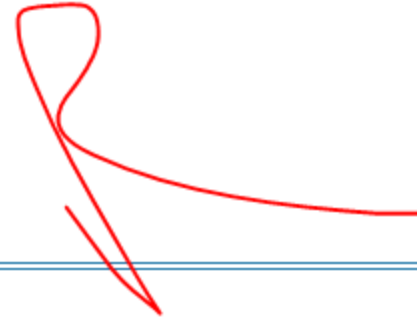
Total

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface: " $z=f(x,y)$ " is zero, then tangent plane at that point will be-----to XY-plane.

Select the correct option

<input type="radio"/>	perpendicular
<input checked="" type="radio"/>	parallel

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Question # 8 of 10 ( Start time: 01:21:21 PM, 25 May 2021 )


If  $y = \sin t$  and  $t = e^{xu}$  then which of the following is partial derivative of w.r.t  $x$

Select the correct option

[Reload](#)

<input type="radio"/>	$xt$ cost
<input type="radio"/>	$-ut$ cost
<input checked="" type="radio"/>	$ut$ cost
<input type="radio"/>	$-xt$ cost

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Question # 9 of 10 ( Start time: 01:21:35 PM, 25 May 2021 )

Total Ma

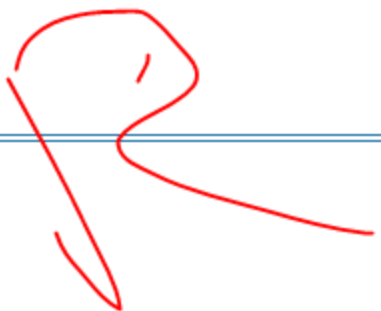
To find the limit of  $f(x, y) = \frac{x^2 + y}{x^2}$  at  $(0, 0)$  if we approach  $(0, 0)$  through the line  $x - axis$ , we get the value

Select the correct option

[Reload Math Equat](#)

<input checked="" type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	None of these
<input type="radio"/>	0

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Question # 10 of 10 ( Start time: 01:21:51 PM, 25 May 2021 )


Value of money is an example of ----- quantity

Select the correct option

<input checked="" type="radio"/>	Scalar
<input type="radio"/>	Vector

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Thank you for watching 😊  
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[rizwanqadeer848@gmail.com](mailto:rizwanqadeer848@gmail.com)