

MTH301

Grand Quiz Solved

2020

Question # 2 of 30 (Start time: 12:40:12 AM, 17 July 2020)

Total Marks: 1

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

Select the correct option

Reload Math Equations

☒	1 
☐	0
☒	1/2 
☐	None of these

Question # 1 of 30 (Start time: 12:38:34 AM, 17 July 2020)

Total Marks: 1

The volume of the papallelepipiped with sides $\vec{a}$, $\vec{b}$ and $\vec{c}$ is determined as

Select the correct option

Reload Math Equations

☐	$ \vec{a} \times \vec{b} \times \vec{c} \cos \theta$
☐	$ \vec{a} \cdot \vec{b} \cdot \vec{c} \cos \theta$
☐	$ \vec{a} \cdot \vec{b} \times \vec{c} \sin \theta$
☒	$ \vec{a} \times \vec{b} \cdot \vec{c} \cos \theta$ 

Question # 3 of 30 (Start time: 12:41:30 AM, 17 July 2020)

Total Marks: 1

Partial derivative of

$$f(x, y) = 2x^2y + 3y^3$$

with respect to x is

Select the correct option

[Reload Math Equations](#)

☐	$2x^2 + 9y^2$
☐	$4xy + 9y^2$
☒	$4xy$
☐	$4xy + 3y^3$

Total Marks: 1

ives in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then[Reload Math Equations](#)

$f(x, y)$ has a relative minimum at (x_0, y_0) .
$f(x, y)$ has a relative maximum at (x_0, y_0) .
$f(x, y)$ has a saddle point at (x_0, y_0) .
No conclusion can be drawn.

Question # 5 of 30 (Start time: 12:43:35 AM, 17 July 2020)

Total Marks: 1

The order of integration in the iterated integral does not matter.

Select the correct option

☒	True
☐	False



Click to Save Answer & Move to Next Question

Question # 6 of 30 (Start time: 12:44:57 AM, 17 July 2020)

Total Marks: 1

The number $\sqrt{2}$ is

Select the correct option

[Reload Math Equations](#)

☐	rational
☒	irrational

Click to Save Answer & Move to Next Question

Question # 7 of 30 (Start time: 12:45:21 AM, 17 July 2020)

Total Marks: 1

If there are two points $P(m, n)$ and $Q(a, b)$ on a plane then the distance between them is calculated by

Select the correct option

[Reload Math Equations](#)

☐	$(m - n, a - b)$
☐	$\sqrt{(m - n, a - b)}$
☒	$\sqrt{(a - m)^2 + (b - n)^2}$ ✓
☐	$(a - m)^2 + (b - n)^2$

[Click to Save Answer & Move to Next Question](#)

Question # 8 of 30 (Start time: 12:46:14 AM, 17 July 2020)

Total Marks: 1

Value of the function $f(x, y, z) = xy + z$ at the point $(1, x^3, y^2)$

Select the correct option

[Reload Math Equations](#)

☒	$x^3 + y^2$ ✓
☐	$xy + z^2$
☐	$y + z$
☐	$x^3 + z$

[Click to Save Answer & Move to Next Question](#)

Question # 9 of 30 (Start time: 12:47:03 AM, 17 July 2020)

Total Marks: 1

How many real numbers exist between 1 and 5.

Select the correct option

[Reload Math Equations](#)

☐	0
☐	4
☐	5
☒	∞ ✓

[Click to Save Answer & Move to Next Question](#)

Question # 10 of 30 (Start time: 12:47:35 AM, 17 July 2020)

Total Marks: 1

$$\int_0^1 \int_0^1 dx dy = \text{_____}.$$

Select the correct option

[Reload Math Equations](#)

☐	0
☒	1 ✓
☐	2
☐	3

Question # 11 of 30 (Start time: 12:48:00 AM, 17 July 2020)

Total Marks: 1

Let f be a function of two variables with continuous 2nd ordered partial derivatives in some circle centered at a critical point (x_0, y_0) and let $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f_{xy}^2(x_0, y_0)$.

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|---|
| ☐ | $if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0) . |
| ☒ | $if D = 0$, then no conclusion can be drawn. ✓ |
| ☐ | $if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0) . |
| ☐ | $if D < 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0) . |

Question # 12 of 30 (Start time: 12:48:55 AM, 17 July 2020)

Total Marks: 1

If $w = f(x, y, z)$ where $x = g(t)$, $y = f(t)$, $z = h(t)$ then

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|---|
| ☐ | $\frac{dw}{dt} = \frac{\partial w}{\partial x} \frac{dy}{dt} + \frac{\partial w}{\partial y} \frac{dx}{dt} + \frac{\partial w}{\partial z} \frac{dz}{dt}$ |
| ☒ | $\frac{dw}{dt} = \frac{\partial w}{\partial x} \frac{dx}{dt} + \frac{\partial w}{\partial y} \frac{dy}{dt} + \frac{\partial w}{\partial z} \frac{dz}{dt}$ ✓ |
| ☐ | $\frac{dw}{dt} = \frac{\partial w}{\partial x} \frac{dx}{dw} + \frac{\partial w}{\partial y} \frac{dy}{dw} + \frac{\partial w}{\partial z} \frac{dz}{dw}$ |
| ☐ | $\frac{dw}{dt} = \frac{\partial w}{\partial x} \frac{dx}{dt} - \frac{\partial w}{\partial y} \frac{dy}{dt} - \frac{\partial w}{\partial z} \frac{dz}{dt}$ |

Question # 13 of 30 (Start time: 12:50:02 AM, 17 July 2020)

Total Marks: 1

Area of double integral can be calculated by the formula: area of $R =$ _____.

Select the correct option

[Reload Math Equations](#)

☐	$\frac{1}{\text{area of } R} \iint_R dA$
☒	$\iint_R dA$ ✓
☐	$\int_R f(x, y) dx dy$
☐	$\iint_R f(x, y) dy$

[Click to Save Answer & Move to Next Question](#)

Question # 14 of 30 (Start time: 12:51:10 AM, 17 July 2020)

Total Marks: 1

Domain of the following function is

$$f(x) = \frac{(x+2)}{[(x-2)(x-8)]}$$

Select the correct option

[Reload Math Equations](#)

☐	$\forall x \in \mathbb{R}; x > 2$
☒	$\forall x \in \mathbb{R}; x > 8$
☐	$\forall x \in \mathbb{R}; x < 2$
☐	None of these ✓

[Click to Save Answer & Move to Next Question](#)

Question # 15 of 30 (Start time: 12:52:44 AM, 17 July 2020)

Total Marks: 1

The $\int_0^1 e^{y^3} dx =$

Select the correct option

[Reload Math Equations](#)

☐	0
☒	e^{y^3}
☐	$e - 1$
☐	$e + 1$

Question # 16 of 30 (Start time: 12:53:38 AM, 17 July 2020)

Total Marks: 1

If the function f is continuous on the closed interval $[a, b]$, then f has an absolute maximum value and an absolute minimum value on $[a, b]$

Select the correct option

☒	Extreme Valued Theorem
☐	Mean Value Theorem
☐	Rolle's Theorem
☐	Squeeze Theorem

[Click to Save Answer & Move to Next Question](#)

Question # 17 of 30 (Start time: 12:54:28 AM, 17 July 2020)

Total Marks: 1

The number $\sqrt{3}$ is

Select the correct option

[Reload Math Equations](#)

☐	rational
☒	irrational

[Click to Save Answer & Move to Next Question](#)

Question # 18 of 30 (Start time: 12:54:54 AM, 17 July 2020)

Total Marks: 1

The function decreases most rapidly in the direction of

Select the correct option

[Reload Math Equations](#)

☐	$-\nabla f$
☒	$-\nabla f \times \hat{u}$
☐	$- \nabla f $
☐	$ \nabla f $

Question # 19 of 30 (Start time: 12:56:11 AM, 17 July 2020)

Total Marks: 1

Intersection of two planes is a in three dimensional space.

Select the correct option

☐	point	//
☒	line	//
☒	curve	//
☐	plane	//

[Click to Save Answer & Move to Next Question](#)

Question # 20 of 30 (Start time: 12:57:17 AM, 17 July 2020)

Total Marks: 1

In the following equation of plane

$$a(x - x_0) + b(y - y_0) + c(z - z_0) = 0$$

 x_0, y_0 and z_0 are the coordinates of

Select the correct option

[Reload Math Equations](#)

☒	the point on the plane
☐	the vector perpendicular to the plane
☐	the vector parallel to the plane
☐	None of these

Question # 21 of 30 (Start time: 12:58:32 AM, 17 July 2020)

Total Marks: 1

Vector product of two non-zero vectors lying in xy -plane results into-----.

Select the correct option

- ☐ a vector perpendicular to one vector //
- ☒ a vector perpendicular to both vectors ✓ //
- ☐ a vector not perpendicular to both vectors //
- ☐ a scalar //

Click to Save Answer & Move to Next Question

Question # 22 of 30 (Start time: 12:59:14 AM, 17 July 2020)

Total Marks: 1

Which condition is necessary for a function to be continuous at any point (x, y)

Select the correct option

- ☐ function should be defined at (x, y) //
- ☐ Limit of the function at (x, y) exists //
- ☐ function value should be equal to limit value of function at (x, y) //
- ☒ All of these ✓ //

Click to Save Answer & Move to Next Question

Question # 23 of 30 (Start time: 12:59:44 AM, 17 July 2020)

Total Marks: 1

If $y = f(x)$ and $x = g(t)$ then by chain rule $\frac{dy}{dt} =$

Select the correct option

[Reload Math Equations](#)

☐	$\frac{dy}{dx} + \frac{dx}{dt}$
☐	$\frac{dy}{dx} - \frac{dx}{dt}$
☒	$\frac{dy}{dx} \cdot \frac{dx}{dt}$ ✓
☐	$\frac{dy}{dx} / \frac{dx}{dt}$

Question # 24 of 30 (Start time: 01:00:33 AM, 17 July 2020)

Total Marks: 1

Limit of a function may exist at the point where it not defined

Select the correct option

☒	True ✓
☐	False

[Click to Save Answer & Move to Next Question](#)

Question # 25 of 30 (Start time: 01:01:24 AM, 17 July 2020)

Total Marks: 1

Cylindrical coordinate system is used to determine the position of any object in

Select the correct option

☐	one dimension	//
☐	two dimension	//
☒	three dimension	//
☐	any dimension	//

[Click to Save Answer & Move to Next Question](#)

Question # 26 of 30 (Start time: 01:02:11 AM, 17 July 2020)

Total Marks: 1

The critical point of the given function $f(x, y) = 4xy - 3x + 2y + 10$
where $f_x(x, y) = 4y - 3$ and $f_y(x, y) = 4x + 2$ is _____.

Select the correct option

[Reload Math Equations](#)

☐	$(\frac{3}{4}, \frac{1}{2})$
☐	$(\frac{3}{4}, -\frac{1}{2})$
☐	$(\frac{1}{2}, \frac{3}{4})$
☒	$(-\frac{1}{2}, \frac{3}{4})$

Question # 27 of 30 (Start time: 01:03:10 AM, 17 July 2020)

Total Marks: 1

$$\int_0^2 \int_0^4 10 \, dx \, dy = \text{-----}$$

Select the correct option

[Reload Math Equations](#)

☐	20
☐	40
☐	60
☒	80 ✓

Question # 28 of 30 (Start time: 01:03:51 AM, 17 July 2020)

Total Marks: 1

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

Select the correct option

[Reload Math Equations](#)

☐	$x^2 + 4y + x$
☐	$x^2 + 4y + xy$
☒	$4y + x$ ✓
☐	$2x + y$

Question # 29 of 30 (Start time: 01:04:33 AM, 17 July 2020)

Total Marks: 1

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

Select the correct option

☒	30 Newton
☐	-30 Newton

[Click to Save Answer & Move to Next Question](#)

Question # 30 of 30 (Start time: 01:05:06 AM, 17 July 2020)

Total Marks: 1

The function of the form $f(x, y) = 3x^2x^5$ is _____ in the domain.

Select the correct option

[Reload Math Equations](#)

☐	discontinuous
☐	piecewise continuous
☒	continuous everywhere
☐	may or may not be continuous

Thanks For Watching

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MTH301 Grand Quiz Solved

MTH301:Grand Quiz

sec(s)
Quiz Start Time: 01:19 AM, 17 July 2020

Question # 1 of 30 (Start time: 01:19:19 AM, 17 July 2020)

Total Marks: 1

if $z = f(x)$ and $x = \sin t$ then by chain rule $\frac{dz}{dt} =$

Select the correct option

Reload Math Equations

☒	$f'(\sin t) \cdot \cos t$ ✓
☐	$f'(\sin t) \cdot \sin t$
☐	$-f'(\sin t) \cdot \cos t$
☐	$-f'(\sin t) \cdot \sin t$

Question # 2 of 30 (Start time: 01:20:25 AM, 17 July 2020)

Total Marks: 1

For the following function to be one-to-one, x can not be what values?

$$f(x) = \{(2, 4), (3, 8), (4, 11), (5, x)\}$$

Select the correct option

- | | | |
|----------------------------------|----------------|--|
| ☐ | 13 | |
| ☒ | 4, 8, and 11 | |
| ☐ | 2, 3, and 4 | |
| ☐ | 2, 3, 4, and 5 | |

[Click to Save Answer & Move to Next Question](#)

Question # 3 of 30 (Start time: 01:21:37 AM, 17 July 2020)

Total Marks: 1

The function

$$f(x, y, z) = \frac{(x^2 + yz)}{(xy + z)}$$

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|-----------------|
| ☐ | $x^2 + yz = 0$ |
| ☒ | $xy + z = 0$ |
| ☐ | $x + y + z = 0$ |
| ☐ | $xy > z$ |

Question # 4 of 30 (Start time: 01:22:33 AM, 17 July 2020)

Total Marks: 1

 $\vec{r}(t) = 3 \cos t \hat{i} + 3 \sin t \hat{j}$, $0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

Select the correct option

[Reload Math Equations](#)

☐	explicit
☐	implicit
☐	parametric
☒	parametric vector ✓

Question # 5 of 30 (Start time: 01:23:29 AM, 17 July 2020)

Total Marks: 1

A function is not continuous at a point if its graph has a hole or break at that point.

Select the correct option

☒	True ✓
☐	False

[Click to Save Answer & Move to Next Question](#)

Question # 6 of 30 (Start time: 01:23:57 AM, 17 July 2020)

Total Marks: 1

Two vectors A and B are _____ if one vector A is scalar multiple of the other vector B.

Select the correct option

☐	equal	//
☐	opposite	//
☒	parallel	//
☐	perpendicular	//

[Click to Save Answer & Move to Next Question](#)

Question # 7 of 30 (Start time: 01:24:30 AM, 17 July 2020)

Total Marks: 1

The order of integration in the iterated integral does not matter.

Select the correct option

☒	True	//
☐	False	//

[Click to Save Answer & Move to Next Question](#)

Question # 9 of 30 (Start time: 01:26:30 AM, 17 July 2020)

Total Marks: 1

The order of differentiation in an nth 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

☐	differentiable	//
☒	continuous ✓	//
☐	not differentiable	//
☐	not continuous	//

[Click to Save Answer & Move to Next Question](#)

Question # 11 of 30 (Start time: 01:28:24 AM, 17 July 2020)

Total Marks: 1

Let f be a function of two variables with continuous 2nd ordered partial derivatives in some circle centered at a critical point (x_0, y_0) and let $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f_{xy}^2(x_0, y_0)$.

Select the correct option

[Reload Math Equations](#)

☐	if $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0) .
☒	if $D = 0$, then no conclusion can be drawn. ✓
☐	if $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0) .
☐	if $D < 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0) .

Question # 12 of 30 (Start time: 01:29:14 AM, 17 July 2020)

Total Marks: 1

The critical points of the given function $f(y) = y^3 - 5y^2 + 3y + 5$
where $f_y(y) = 3y^2 - 10y + 3 = (3y - 1)(y - 3)$ are _____.

Select the correct option

[Reload Math Equations](#)

☐	$y = \frac{-1}{3}, -3$
☐	$y = \frac{-1}{3}, 3$
☒	$x = \frac{1}{3}, 3$ ✓
☐	$x = \frac{1}{3}, -3$

Question # 13 of 30 (Start time: 01:29:56 AM, 17 July 2020)

Total Marks: 1

The number $3/11$ is

Select the correct option

☐	rational ✓
☒	irrational ✗

[Click to Save Answer & Move to Next Question](#)

Question # 14 of 30 (Start time: 01:30:49 AM, 17 July 2020)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -2$ and $f_{xy}(0, 2) = -2$
so $D = f_{xx}(0, 2)f_{yy}(0, 2) - f_{xy}^2(0, 2) = 0$

Select the correct option

[Reload Math Equations](#)

☐	then f has a relative maximum at $(0, 2)$.
☒	then no conclusion can be drawn. ✓
☐	then f has a relative minimum at $(0, 2)$.
☐	then f has a saddlepoint at $(0, 2)$.

Question # 15 of 30 (Start time: 01:31:41 AM, 17 July 2020)

Total Marks: 1

The mixed 2nd order partial derivatives of $z = xy$ is equal to

Select the correct option

[Reload Math Equations](#)

☐	x^2
☐	y^2
☐	xy
☒	1 ✓

Question # 16 of 30 (Start time: 01:32:40 AM, 17 July 2020)

Total Marks: 1

If $y = \sin x$ and $x = e^t$, then by chain rule $(dy/dx) =$

Select the correct option

[Reload Math Equations](#)

☐	$x \sin e^t$
☐	$x \sin e^t$
☐	$\sin e^t$
☒	$\cos e^t$ ✓

Saving...

Waiting for cache...

Question # 17 of 30 (Start time: 01:33:38 AM, 17 July 2020)

Total Marks: 1

Which of the following function is not the function of one variable

Select the correct option

☐	$y = f(x)$	//
☒	$y = f(x, y)$ ✓	//
☐	$z = g(n) + 2$	//
☐	$m = g(s) + \text{constant}$	//

[Click to Save Answer & Move to Next Question](#)

Question # 19 of 30 (Start time: 01:36:21 AM, 17 July 2020)

Total Marks: 1

Which of the following is a two dimensional coordinate system

Select the correct option

☒	polar coordinate system	//
☐	cylindrical coordinate system	//
☐	spherical coordinate system	//
☐	None of these	//

[Click to Save Answer & Move to Next Question](#)

Question # 20 of 30 (Start time: 01:37:04 AM, 17 July 2020)

Total Marks: 1

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

Select the correct option

☒	arbitrary	//
☐	no	//
☐	upward	//
☐	downward	//

[Click to Save Answer & Move to Next Question](#)

Question # 21 of 30 (Start time: 01:37:37 AM, 17 July 2020)

Total Marks: 1

The del operator is defined as

Select the correct option

[Reload Math Equations](#)

☐	$\nabla \equiv -\frac{\partial}{\partial x}i - \frac{\partial}{\partial y}j - \frac{\partial}{\partial z}k$
☒	$\nabla \equiv \frac{\partial}{\partial x}i + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}k$ ✓
☐	$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$
☐	$\nabla \equiv \frac{\partial}{\partial x}k + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}i$

Question # 22 of 30 (Start time: 01:38:27 AM, 17 July 2020)

Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

☒	saddle	✗
☐	initial	//
☐	final	//
☐	inflection	✓

[Click to Save Answer & Move to Next Question](#)

Question # 23 of 30 (Start time: 01:39:02 AM, 17 July 2020)

Total Marks: 1

spherical coordinate ρ is related to the rectangular coordinate as

Select the correct option

[Reload Math Equations](#)

☐	$\rho = \sqrt{(x + y + z)}$
☐	$\rho = x + y + z$
☒	$\rho = \sqrt{(x^2 + y^2 + z^2)}$ ✓
☐	$\rho = \frac{z}{\sqrt{(x^2 + y^2 + z^2)}}$

Question # 24 of 30 (Start time: 01:39:59 AM, 17 July 2020)

Total Marks: 1

If the function f is continuous on the closed interval $[a, b]$, then f has an absolute maximum value and an absolute minimum value on $[a, b]$

Select the correct option

☒	Extreme Valued Theorem ✓
☐	Mean Value Theorem
☐	Rolle's Theorem
☐	Squeeze Theorem

[Click to Save Answer & Move to Next Question](#)

Question # 25 of 30 (Start time: 01:40:26 AM, 17 July 2020)

Total Marks: 1

The partial derivative with respect to x of $f(x, y) = \frac{x}{y}$ is _____.

Select the correct option

[Reload Math Equations](#)

☐	1
☐	x
☒	$\frac{1}{y}$ ✓
☐	$-\frac{x}{y^2}$

Question # 26 of 30 (Start time: 01:41:04 AM, 17 July 2020)

Total Marks: 1

$y = \sqrt{9 - x^2}$, $-3 \leq x \leq 3$, is a _____ form of a curve in the plane.

Select the correct option

[Reload Math Equations](#)

☒	implicit ✗
☐	explicit ✓
☐	parametric
☐	parametric vector

Question # 27 of 30 (Start time: 01:42:07 AM, 17 July 2020)

Total Marks: 1

Domain of the following function is

$$f(x, y, z) = \frac{(x + y + z + 3)}{[(x - 3)(y + 5)(z - 7)]}$$

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|---|
| ☐ | $\forall x, y, z \in \mathbb{R}; x > 3, y < 5, z > 7$ |
| ☐ | $\forall x, y, z \in \mathbb{R}; x < 3, y > 5, z < 7$ |
| ☐ | $\forall x \in \mathbb{R}$ |
| ☒ | $\forall x, y, z \in \mathbb{R}; x \neq 3, y \neq -5, z \neq 7$ ✓ |



[Click to Save Answer & Move to Next Question](#)

MTH301:Grand Quiz

Quiz Start Time: 01:19 AM, 17 July 2020

Question # 28 of 30 (Start time: 01:43:42 AM, 17 July 2020)

Total Marks: 1

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

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|---|
| ☐ | $\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial s} - \frac{dw}{dy} \frac{\partial y}{\partial s}$ |
| ☒ | $\frac{\partial w}{\partial s} = \frac{dw}{dx} \frac{\partial x}{\partial s} + \frac{dw}{dr} \frac{\partial r}{\partial s}$ ✓ |
| ☐ | $\frac{\partial w}{\partial s} = \frac{dw}{ds} \frac{\partial s}{\partial r} + \frac{dw}{dy} \frac{\partial y}{\partial s}$ |
| ☐ | $\frac{\partial w}{\partial s} = \frac{dw}{dr} \frac{\partial r}{\partial s} - \frac{dw}{dr} \frac{\partial r}{\partial s}$ |

Question # 29 of 30 (Start time: 01:45:19 AM, 17 July 2020)

Total Marks: 1

The volume of a parallelopiped with dimensions x , y , z is

Select the correct option

Reload Math Equations

☐	$V = x^2 y^2 z^2$
☐	$V = x + y + z$
☐	$V = \sqrt{x y z}$
☒	$V = x y z$ ✓

Question # 30 of 30 (Start time: 01:46:42 AM, 17 July 2020)

Total Marks: 1

If $\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} f(x,y,z) = L_1$ then

Select the correct option

Reload Math Equations

☒	$\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} c f(x,y,z) = c L_1$ if c is constant ✓
☐	$\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} c f(x,y,z) = c L_1$ if c is not constant
☐	$\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} c f(x,y,z) = c L_1$ if c is a function of x
☐	$\lim_{(x,y,z) \rightarrow (x_0,y_0,z_0)} c f(x,y,z) = c L_1$ if c is a function of y

Question # 14 of 30 (Start time: 02:07:03 AM, 17 July 2020)

Total Marks: 1

Two vectors are opposite vectors if they have _____.

Select the correct option

- ☐ (a) same magnitude
- ☐ (b) opposite magnitude
- ☐ (c) opposite direction
- ☒ (d) Both (a) and (c). ✓

[Click to Save Answer & Move to Next Question](#)

Question # 16 of 30 (Start time: 02:08:09 AM, 17 July 2020)

Total Marks: 1

A plane $z = 3$ is to xy-plane.

Select the correct option

- ☒ parallel ✓
- ☐ perpendicular ✗

[Click to Save Answer & Move to Next Question](#)

Question # 27 of 30 (Start time: 02:15:51 AM, 17 July 2020)

Total Marks: 1

$$\int_0^{\ln 3} \int_0^{\ln 5} e^{u+v} du dv = \text{-----}$$

Select the correct option

[Reload Math Equations](#)

☐	3
☐	5
☒	8
☐	15

Question # 28 of 30 (Start time: 02:17:00 AM, 17 July 2020)

Total Marks: 1

Which of the following coordinate system requires two angles to determine the position of an object

Select the correct option

☒	polar coordinate system
☐	cylindrical coordinate system
☐	spherical coordinate system
☐	rectangular coordinate system

[Click to Save Answer & Move to Next Question](#)

Question # 29 of 30 (Start time: 02:17:21 AM, 17 July 2020)

Total Marks: 1

Value of the function $f(x, y, z) = xyz$ at point $(2, 2, 2)$ is

Select the correct option

☐	2	
☐	6	
☒	8	
☐	16	

[Click to Save Answer & Move to Next Question](#)

Question # 30 of 30 (Start time: 02:17:59 AM, 17 July 2020)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -2$ and $f_{xy}(0, 2) = -2$
so $D = f_{xx}(0, 2)f_{yy}(0, 2) - f_{xy}^2(0, 2) = 0$

Select the correct option

[Reload Math Equations](#)

☐	then f has a relative maximum at $(0, 2)$.
☒	then no conclusion can be drawn.
☐	then f has a relative minimum at $(0, 2)$.
☐	then f has a saddlepoint at $(0, 2)$.

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

Select the correct option

 Reload Math Equations

☐	x^2
☒	0 ✓
☐	$2xy$
☐	$2y$

Question # 2 of 30 (Start time: 02:33:52 AM, 17 July 2020)

Total Marks: 1

For the following function to be one-to-one, x can not be what values?

$$f(x) = \{(2, 4), (3, 8), (4, 11), (5, x)\}$$

Select the correct option

- | | | |
|----------------------------------|----------------|----|
| ☐ | 13 | // |
| ☒ | 4, 8, and 11 | // |
| ☐ | 2, 3, and 4 | // |
| ☐ | 2, 3, 4, and 5 | // |

[Click to Save Answer & Move to Next Question](#)

Question # 3 of 30 (Start time: 02:34:16 AM, 17 July 2020)

Total Marks: 1

The surface: $z=f(x,y)$ neither falls nor rises(decreases or increases) at any point in the -----of Gradient(z).

Select the correct option

- | | | |
|----------------------------------|----------------------------|----|
| ☒ | Direction | // |
| ☐ | Opposite to the direction | // |
| ☐ | Direction perpendicular to | // |
| ☐ | Arbitrary direction | // |

[Click to Save Answer & Move to Next Question](#)

Question # 4 of 30 (Start time: 02:35:01 AM, 17 July 2020)

Total Marks: 1

Which of the following is the representation of Cylindrical coordinates

Select the correct option

Reload Math Equations

☐	(x, y, z)
☒	(r, θ, z)
☐	(r, θ, φ)
☐	(ρ, φ, z)

Question # 5 of 30 (Start time: 02:35:23 AM, 17 July 2020)

Total Marks: 1

Range of the function is

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

Select the correct option

Reload Math Equations

☐	$(-\infty, +\infty)$
☐	$(-\infty, 0)$
☒	$[0, +\infty)$
☐	$(0, +\infty)$

Question # 6 of 30 (Start time: 02:36:07 AM, 17 July 2020)

Total Marks: 1

Let f be a function of two variables at a critical point $(1, 0)$, $f_{xx}(1, 0) = 4$, $f_{yy}(1, 0) = 2$ and $f_{xy}(1, 0) = 0$
so $D = f_{xx}(1, 0)f_{yy}(1, 0) - f_{xy}^2(1, 0) = 8$

Select the correct option

[Reload Math Equations](#)

☐	then f has a relative maximum at $(1, 0)$.
☐	then no conclusion can be drawn.
☒	then f has a relative minimum at $(1, 0)$. ✓
☐	then f has a relative maximum at $(1, 0)$.

Question # 7 of 30 (Start time: 02:37:09 AM, 17 July 2020)

Total Marks: 1

The order of integration in the iterated integral does not matter.

Select the correct option

☒	True ✓
☐	False

[Click to Save Answer & Move to Next Question](#)

Question # 8 of 30 (Start time: 02:37:27 AM, 17 July 2020)

Total Marks: 1

XY-Plane consist of all points where

Select the correct option

☐	$xy=0$	//
☐	$xy=1$	//
☐	$z=1$	//
☒	$z=0$	//

Click to Save Answer & Move to Next Question

Quiz Start Time: 02:33 AM, 17 July 2020

Total Marks: 1

is in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D = 0$, then -----

Reload Math Equations

$f(x, y)$ has a relative minimum at (x_0, y_0) .

$f(x, y)$ has a relative maximum at (x_0, y_0) .

$f(x, y)$ has a saddle point at (x_0, y_0) .

No conclusion can be drawn.

Question # 10 of 30 (Start time: 02:38:44 AM, 17 July 2020)

Total Marks: 1

The surface $z=f(x,y)$ falls (decreases) most rapidly at any point in the of Gradient(z).

Select the correct option

☒	Direction	//
☐	Opposite to the direction	//
☐	Direction perpendicular to	//
☐	Arbitrary direction	//

[Click to Save Answer & Move to Next Question](#)

Quiz Start Time: 02:33 AM, 17 July 2020

Total Marks: 1

entered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then - - - - -

[Reload Math Equations](#)

$f(x, y)$ has a relative minimum at (x_0, y_0) .

$f(x, y)$ has a relative maximum at (x_0, y_0) .

$f(x, y)$ has a saddle point at (x_0, y_0) .

No conclusion can be drawn.

Question # 12 of 30 (Start time: 02:39:49 AM, 17 July 2020)

Total Marks: 1

Domain of the following function $y = \frac{x}{3x - 4}$

Select the correct option

[Reload Math Equations](#)

☐	All real numbers
☒	All real numbers with $x \neq \frac{4}{3}$ ✓
☐	All real numbers with $x < 4$
☐	All real numbers with $x > 3$

[Click to Save Answer & Move to Next Question](#)

Question # 13 of 30 (Start time: 02:40:26 AM, 17 July 2020)

Total Marks: 1

Let m be the slope and c is y - intercept, then slope intercept form of the equation of a line is _____.

Select the correct option

[Reload Math Equations](#)

☒	$y = m x + c$ ✓
☐	$y = m x . c$
☐	$y + y_0 = m(x + x_0)$
☐	$y - y_0 = m(x - x_0)$

Question # 14 of 30 (Start time: 02:40:58 AM, 17 July 2020)

Total Marks: 1

The number $\sqrt{3}$ is

Select the correct option

Reload Math Equations

☐	rational
☒	irrational ✓

Click to Save Answer & Move to Next Question

Question # 15 of 30 (Start time: 02:41:22 AM, 17 July 2020)

Total Marks: 1

What is the absolute maximum value of the function below on the interval $[-3, 0]$

$$f(x) = \sqrt[5]{(x+1)^2} + \frac{2x}{5}$$

Select the correct option

Reload Math Equations

☐	$-\frac{2}{5}$
☐	1
☒	$\sqrt[5]{4} - 1.2$ ✓
☐	0

Question # 16 of 30 (Start time: 02:42:47 AM, 17 July 2020)

Total Marks: 1

Partial derivative of

$$f(x, y) = x^2 + y^2 + xy$$

with respect to y is

Select the correct option

[Reload Math Equations](#)

☐	$x^2 + 2y + xy$
☐	$x^2 + 2y + x$
☒	$2y + x$ ✓
☐	None of these

Question # 20 of 30 (Start time: 02:45:50 AM, 17 July 2020)

Total Marks: 1

If there are two points on P(1, 0) and Q (0, 1) on the plane then the distance between them is

Select the correct option

[Reload Math Equations](#)

☐	1
☐	0
☐	2
☒	$\sqrt{2}$ ✓

Question # 22 of 30 (Start time: 02:47:01 AM, 17 July 2020)

Total Marks: 1

In polar coordinates to determine the position of a point on a plane , we need

Select the correct option

- | | | |
|----------------------------------|---|---|
| ☐ | X and Y axis | / |
| ☐ | an angle from a fixed direction only | / |
| ☒ | distance from a fixed point and an angle from a fixed direction | / |
| ☐ | distance from a fixed point only | / |

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Question # 25 of 30 (Start time: 02:48:13 AM, 17 July 2020)

Total Marks: 1

If $f(x, y) = x^3y^2 + 5$ then $\frac{\partial f}{\partial x} =$

Select the correct option

[Reload Math Equations](#)

- | | |
|----------------------------------|---------------|
| ☐ | $3x^2y^2 + 5$ |
| ☒ | $3x^2y^2$ |
| ☐ | $2x^3y + 5$ |
| ☐ | $2x^3y$ |

Question # 26 of 30 (Start time: 02:48:54 AM, 17 July 2020)

Total Marks: 1

For the function $f(x, y) = \sqrt{x^2 + y^2}$ the partial derivative w.r.t 'x' and 'y' exist at all points of the domain except

Select the correct option

☒	(0,0) ✓
☐	(1,1)
☐	(-1,-1)
☐	(-2,-2)

Question # 27 of 30 (Start time: 02:50:03 AM, 17 July 2020)

Total Marks: 1

spherical coordinate ρ is related to the rectangular coordinate as

Select the correct option

☐	$\rho = \sqrt{(x+y+z)}$
☐	$\rho = x+y+z$
☒	$\rho = \sqrt{(x^2+y^2+z^2)}$ ✓
☐	$\rho = \frac{z}{\sqrt{(x^2+y^2+z^2)}}$

Question # 30 of 30 (Start time: 02:51:53 AM, 17 July 2020)

Total Marks: 1

Parametric equations for the straight line through the point $A(1, 2, 3)$ and parallel to the vector $v = 4i + 5j$

Select the correct option

- | | | |
|----------------------------------|--------------------------------------|----|
| ☐ | $x = 4 + t, y = 5 + 2t, z = 0 + 3t$ | // |
| ☐ | $x = t, y = 3t, z = 3t$ | // |
| ☒ | $x = 1 + 4t, y = 2 + 5t, z = 3 + 0t$ | // |
| ☐ | $x = 4t, y = 5t, z = 0t$ | // |

[Click to Save Answer & Move to Next Question](#)

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