



# MTH301 QUIZ(3)

Lecture 30 to 36

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**RIZ MUGHAL**  
**SQA ENGINEER:**

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

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

Question # 1 of 10 ( Start time: 10:58:05 AM, 07 February 2021 )

Total Mar

For a line integral, if the path of integration is parallel to x - axis i.e.  $x = k, dx = 0$  then

Select the correct option

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Reload Math Equati



$$I_c = \int_c p dx$$



$$I_c = - \int_c p dx$$

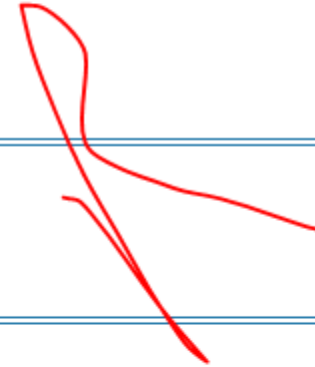


$$I_c = \int_c Q dy$$



$$I_c = \int_c Q dx$$

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Question # 2 of 10 ( Start time: 10:58:27 AM, 07 February 2021 )

Tot

If  $I = \int_{AB} Pdx + Qdy$  and  $(Pdx + Qdy)$  is an exact differential then

Select the correct option

[Reload Math E](#)

<input type="radio"/>	$I_{c_1} - I_{c_2} = 0$
<input checked="" type="radio"/>	$I_{c_1} + I_{c_2} = 0$
<input type="radio"/>	$I_{c_1} \times I_{c_2} = 0$
<input type="radio"/>	$I_{c_2} + I_{c_2} = 0$

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Question # 3 of 10 ( Start time: 10:58:44 AM, 07 February 2021 )

Total

Wallis sine formula when n is even

$$\int_0^{\frac{\pi}{2}} \sin^n x dx =$$

Select the correct option

[Reload Math Eq](#)


$$\frac{n}{2} \cdot \frac{n-2}{2} \cdot \frac{n-4}{2} \cdot \frac{n-6}{2} \dots \frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3}$$



$$\frac{n-1}{2} \cdot \frac{n-1}{2} \cdot \frac{n-1}{2} \cdot \frac{n-1}{2} \dots \frac{5}{6} \cdot \frac{3}{4} \cdot \frac{1}{2} \cdot \frac{\pi}{2}$$



$$\frac{n-1}{n} \cdot \frac{n-3}{n-2} \cdot \frac{n-5}{n-4} \cdot \frac{n-7}{n-6} \dots \frac{5}{6} \cdot \frac{3}{4} \cdot \frac{1}{2} \cdot \frac{\pi}{2}$$



$$\frac{n-1}{n} \cdot \frac{n-3}{n-2} \cdot \frac{n-5}{n-4} \cdot \frac{n-7}{n-6} \dots \frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3}$$

Question # 4 of 10 ( Start time: 10:59:02 AM, 07 February 2021 )


$$\int_0^{\frac{\pi}{2}} \cos^2 x dx = \frac{1}{2} \left| \frac{\pi}{2} + \frac{\sin \pi}{2} \right| =$$

Select the correct option

[Reload](#)

<input type="radio"/>	$\frac{\pi}{2}$
<input checked="" type="radio"/>	$\frac{\pi}{4}$
<input type="radio"/>	$\frac{\pi}{3}$
<input type="radio"/>	$\frac{3\pi}{4}$

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Question # 5 of 10 ( Start time: 10:59:18 AM, 07 February 2021 )

Total

The grad operator  $\nabla$  acts on a(an) \_\_\_\_\_ and gives a vector.

Select the correct option

[Reload Math Equ](#)

<input type="radio"/>	vector
<input type="radio"/>	constant
<input checked="" type="radio"/>	scalar
<input type="radio"/>	unit vector

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Question # 6 of 10 ( Start time: 10:59:36 AM, 07 February 2021 )

If a vector field exists for all points of the curve C, then for each element of arc we can form the \_\_\_\_\_.

Select the correct option

- |                                  |                |
|----------------------------------|----------------|
| <input type="radio"/>            | vector field   |
| <input type="radio"/>            | scalar filed   |
| <input type="radio"/>            | vector product |
| <input checked="" type="radio"/> | scalar product |

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Question # 7 of 10 ( Start time: 10:59:52 AM, 07 February 2021 )

Sign of line integral is reversed when the direction of integration along the path is reversed.

Select the correct option

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

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Question # 8 of 10 ( Start time: 11:00:07 AM, 07 February 2021 )

One of the line integral properties is  $\int_{AB} Pdx + Qdy = - \int_{BA} Pdx + Qdy$

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Select the correct option

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Relo

True



False



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Question # 9 of 10 ( Start time: 11:00:23 AM, 07 February 2021 )

The value of the integral is ----- independent of the path of integration taken.

Select the correct option

<input type="radio"/>	always
<input checked="" type="radio"/>	may or may not

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Question # 10 of 10 ( Start time: 11:00:42 AM, 07 February 2021 )

In general, the value of the line integral depends on the particular path of integration.

Select the correct option

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

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2<sup>nd</sup> account

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Question # 1 of 10 ( Start time: 11:09:00 AM, 07 February 2021 )

The value of the integral  $I = \int (x^2 + x + 2)dx$  is

Select the correct option

<input type="radio"/>	12
<input type="radio"/>	14
<input checked="" type="radio"/>	10
<input type="radio"/>	28

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Question # 2 of 10 ( Start time: 11:09:23 AM, 07 February 2021 )

Total Marks:

If  $Pdx + Qdy + Rdw$  is an exact differential equation then  $\int_C (Pdx + Qdy + Rdw)$  is \_\_\_\_\_.

Select the correct option

[Reload Math Equations](#)

<input type="radio"/>	-1
<input checked="" type="radio"/>	zero
<input type="radio"/>	finite
<input type="radio"/>	infinite

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Question # 3 of 10 ( Start time: 11:09:41 AM, 07 February 2021 )

Tot

To evaluate the line integral,  $\int_C V(r) dr$ , the integrand is expressed in terms of  $x, y, z$  with  $d\vec{r} = \underline{\hspace{2cm}}$

Select the correct option

[Reload Math E](#)

<input type="radio"/>	$dx \hat{i}$
<input type="radio"/>	$dx \hat{i} + dy \hat{j}$
<input checked="" type="radio"/>	$dx \hat{i} + dy \hat{j} + dz \hat{k}$
<input type="radio"/>	$\sqrt{dx \hat{i} + dy \hat{j} + dz \hat{k}}$

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Question # 4 of 10 ( Start time: 11:09:59 AM, 07 February 2021 )

Total

$$\int_0^{\frac{\pi}{2}} \cos^2 x dx = \frac{1}{2} \left| \frac{\pi}{2} + \frac{\sin \pi}{2} \right| =$$

Select the correct option

[Reload Math Eq](#)

<input type="radio"/>	$\frac{\pi}{2}$
<input checked="" type="radio"/>	$\frac{\pi}{4}$
<input type="radio"/>	$\frac{\pi}{3}$
<input type="radio"/>	$\frac{3\pi}{4}$

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Question # 5 of 10 ( Start time: 11:10:14 AM, 07 February 2021 )

Total M

If  $P = 3x^2 + 2y^2$  and  $Q = 4xy$  then \_\_\_\_\_.

Select the correct option

[Reload Math Equa](#)

<input type="radio"/>	$\frac{\partial Q}{\partial x} = 4xy$
<input type="radio"/>	$\frac{\partial P}{\partial y} = 6x + 4y$
<input checked="" type="radio"/>	$\frac{\partial P}{\partial y} = \frac{\partial Q}{\partial x}$
<input type="radio"/>	$\frac{\partial P}{\partial y} \neq \frac{\partial Q}{\partial x}$



Question # 6 of 10 ( Start time: 11:10:28 AM, 07 February 2021 )


The div operator  $\nabla$  acts on a(an) \_\_\_\_\_ and gives a scalar.

Select the correct option

[Reload Math](#)

<input type="radio"/>	scalar
<input checked="" type="radio"/>	vector
<input type="radio"/>	unit vector
<input type="radio"/>	constant

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Question # 7 of 10 ( Start time: 11:10:43 AM, 07 February 2021 )

The path of integration of a line integral must be -----

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Select the correct option

- |                                  |                              |
|----------------------------------|------------------------------|
| <input type="radio"/>            | straight and single-valued   |
| <input checked="" type="radio"/> | continuous and single-valued |
| <input type="radio"/>            | straight and multi-valued    |
| <input type="radio"/>            | continuous and multi-valued  |

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Click to Save Answer

Question # 8 of 10 ( Start time: 11:10:57 AM, 07 February 2021 )

Total Marks


Path of integration parallel to \_\_\_\_\_,  $dx = 0$ .  $\therefore I_C = \int_C Q dy$ .

Select the correct option

[Reload Math Equations](#)

<input type="radio"/>	$x$ - axis
<input checked="" type="radio"/>	$y$ - axis
<input type="radio"/>	$z$ - axis
<input type="radio"/>	$dz = 0$

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The grad operator  $\nabla$  acts on a(an) \_\_\_\_\_ and gives a vector.

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Select the correct option

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Reload Math Equa

<input type="radio"/>	vector
<input type="radio"/>	constant
<input checked="" type="radio"/>	scalar
<input type="radio"/>	unit vector

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Question # 10 of 10 ( Start time: 11:11:27 AM, 07 February 2021 )

Path of integration must be \_\_\_\_\_.

Select the correct option

- |                                  |                       |
|----------------------------------|-----------------------|
| <input type="radio"/>            | (a) continuous        |
| <input type="radio"/>            | (b) discontinuous     |
| <input type="radio"/>            | (c) single-valued     |
| <input checked="" type="radio"/> | (d) Both (a) and (c). |
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- R*

3<sup>rd</sup> account

Question # 1 of 10 ( Start time: 11:14:03 AM, 07 February 2021 )

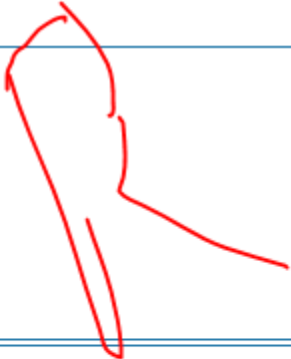
Sign of line integral is reversed when the direction of integration along the path is reversed.

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Select the correct option

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

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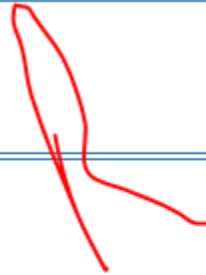
Question # 2 of 10 ( Start time: 11:14:36 AM, 07 February 2021 )

The path traversal in calculating the Green's Theorem is -----

Select the correct option

- |                                  |               |
|----------------------------------|---------------|
| <input type="radio"/>            | clockwise     |
| <input checked="" type="radio"/> | anticlockwise |
| <input type="radio"/>            | inwards       |
| <input type="radio"/>            | outwards      |

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Question # 3 of 10 ( Start time: 11:15:12 AM, 07 February 2021 )

If  $P = 3x^2 + 2y^2$  and  $Q = 4xy$  then \_\_\_\_\_.

Select the correct option

[Reload Ma](#)

<input type="radio"/>	$\frac{\partial Q}{\partial x} = 4xy$
<input type="radio"/>	$\frac{\partial P}{\partial y} = 6x + 4y$
<input checked="" type="radio"/>	$\frac{\partial P}{\partial y} = \frac{\partial Q}{\partial x}$
<input type="radio"/>	$\frac{\partial P}{\partial y} \neq \frac{\partial Q}{\partial x}$



Question # 4 of 10 ( Start time: 11:15:28 AM, 07 February 2021 )

Total I

If  $(Pdx + Qdy)$  is an exact differential then

Select the correct option

[Reload Math Equ](#)

$$\oint (Pdx + Qdy) = 0$$



$$\oint (Pdx + Qdy) \neq 0$$

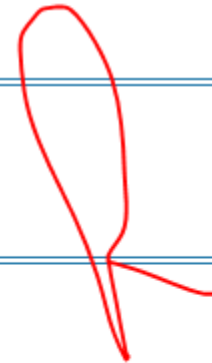


$$\oint (Pdx + Qdy) = -1$$



$$\oint (Pdx + Qdy) = 1$$

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Question # 5 of 10 ( Start time: 11:15:47 AM, 07 February 2021 )

To


To evaluate a line integral, the integrand is expressed in terms of  $x, y, z$  with

Select the correct option

[Reload Math](#)

<input checked="" type="radio"/>	$dr = dx\mathbf{i} + dy\mathbf{j} + dz\mathbf{k}$
<input type="radio"/>	$dr = x\mathbf{i} + y\mathbf{j} + z\mathbf{k}$
<input type="radio"/>	$dr = dx + dy + dz$
<input type="radio"/>	$dr = x + y + z$

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Question # 6 of 10 ( Start time: 11:16:13 AM, 07 February 2021 )

Total Marks: 1

The line integral of  $F(r)$ ,  $\int_C \vec{F} \cdot d\vec{r}$ , is a scalar because  $\vec{F} \cdot d\vec{r}$  is a \_\_\_\_\_.

Select the correct option

[Reload Math Equations](#)

<input checked="" type="radio"/>	scalar product
<input type="radio"/>	scalar field
<input type="radio"/>	vector product
<input type="radio"/>	vector field

Question # 7 of 10 ( Start time: 11:16:29 AM, 07 February 2021 )

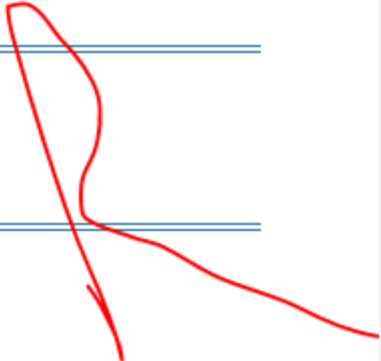
Tc

Wallis sine formula when n is even

$$\int_0^{\frac{\pi}{2}} \cos^4 x dx =$$

Select the correct option

[Reload Math](#)

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | $\frac{4}{5} \cdot \frac{2}{3}$                     |
| <input checked="" type="radio"/> | $\frac{3}{4} \cdot \frac{1}{2} \cdot \frac{\pi}{2}$ |
| <input type="radio"/>            | $\frac{3}{4} \cdot \frac{1}{2}$                     |
| <input type="radio"/>            | $\frac{4}{3} \cdot \frac{2}{1} \cdot \frac{\pi}{2}$ |
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- 

Question # 8 of 10 ( Start time: 11:16:44 AM, 07 February 2021 )

Total Marks

Wallis sine formula when n is odd

$$\int_0^{\frac{\pi}{2}} \sin^n x dx =$$

Select the correct option

[Reload Math Equation](#)

$$\frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3}$$



$$\frac{7}{6} \cdot \frac{5}{4} \cdot \frac{3}{2} \cdot \frac{\pi}{2}$$

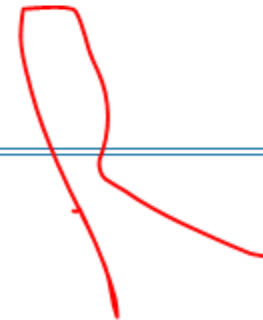


$$\frac{7}{6} \cdot \frac{5}{4} \cdot \frac{3}{2}$$



$$\frac{6}{7} \cdot \frac{4}{5} \cdot \frac{2}{3} \cdot \frac{\pi}{2}$$

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Question # 9 of 10 ( Start time: 11:17:00 AM, 07 February 2021 )

Tot


$$\int_0^{\frac{\pi}{2}} \sin^2 x dx = \frac{1}{2} \left| \frac{\pi}{2} - \frac{\sin \pi}{2} \right| =$$

Select the correct option

[Reload Math E](#)

<input type="radio"/>	$\frac{\pi}{2}$
<input checked="" type="radio"/>	$\frac{\pi}{4}$
<input type="radio"/>	$\frac{\pi}{3}$
<input type="radio"/>	$\frac{3\pi}{4}$

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Question # 10 of 10 ( Start time: 11:17:15 AM, 07 February 2021 )

Total


One of the line integral properties is  $\int_{AB} F ds = - \int_{BA} F ds$

Select the correct option

[Reload Math Equ](#)

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

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Thank you for watching 😊

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[rizwanqadeer848@gmail.com](mailto:rizwanqadeer848@gmail.com)