*

1 point

$\Gamma(n)\Gamma(1-n) =$

- Option 1: $\frac{\pi}{\sin n\pi}$
- Option 2: $\frac{n}{\sin n\pi}$
- Option 3: $\frac{1}{\sin n\pi}$
- None of these

*

1 point

The volume common to the cylinder $x^2 + y^2 = a^2$ *and* $x^2 + z^2 = a^2$ is

$\frac{16a^3}{3}$

Option 1

$\frac{16a^4}{3}$

Option 2

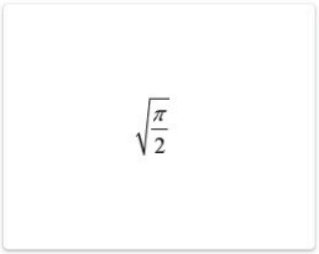
$\frac{8a^3}{3}$

Option 3

$\frac{8a^4}{3}$

Option 4

$$\int_0^{\infty} e^{-x^2}\,dx =$$



Option 1

Option 2

Option 3

None of these

*

1 point

In spherical co-ordinates, $dxdydz$ is equal to

$r\,d\theta\,d\phi\,dr$

Option 1

$r\sin\theta\,d\theta\,d\phi\,dr$

Option 2

$r^2\sin\theta\,d\theta\,d\phi\,dr$

Option 3

$r^2\,d\theta\,d\phi\,dr$

Option 4

1 point

On converting into polar coordinates $\int_0^{2a}\int_0^{\sqrt{2ax-x^2}} dx\,dy$ is equal to

$\int_0^{\pi}\int_0^{2a\,cos\theta} r\,dr\,d\theta$

Option 1

$\int_0^{\frac{\pi}{2}}\int_0^{2a\,cos\theta} r\,dr\,d\theta$

Option 2

$\int_0^{\frac{\pi}{2}}\int_0^{2a\,sin\theta} r\,dr\,d\theta$

Option 3

None of these

Option 2

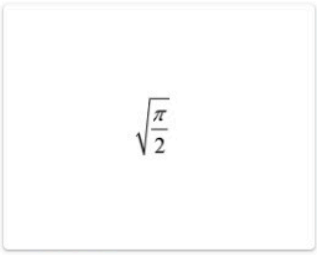
$$\frac{\pi h}{3}(9a - h^2)$$

Option 3

$$\frac{\pi h}{3}(3ah - h^2)$$

Option 4

$$\int_0^{\infty} e^{-x^2}\,dx =$$



Option 1

Option 2

Option 3

None of these

9660392001

The major application of Betta and Gamma function is to evaluate * 1 point

- Simple Integrals
- Proper Integrals
- Improper Integrals
- None of the above

* 1 point

To evaluate $\int_0^{\infty}\int_0^{x} xe^{-\frac{x^2}{y}}\,dx\,dy$ by change of order of integration ,the lower limit for the variable x is equal to

y^2 | 0

*

1 point

The transformation $x + y = u, y = uv$ transform the area element $dx\,dy$ into $|J|\,du\,dv$,where $|J|$ is equal to

- 1
- u
- -1
- None of these

Volume of a segment of height h of a sphere of radius a is *

1 point

$\frac{\pi h}{3}(3a - h^2)$

$\frac{\pi h}{9}(3a - h^2)$

Option 3

None of these

*

1 point

$$\int_0^1 \int_0^x \int_0^{\sqrt{x+y}} z \, dx \, dy \, dz$$

- 1/2
- 1/4
- 1/6
- None of these

Submit

Clear form