*

$$\left\lceil \frac{1}{2} \right\rceil \left\lceil \frac{3}{2} \right\rceil \left\lceil \frac{5}{2} \right\rceil = \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

$\frac{1}{8}(\pi)^{1/2}$

Option 1

$\frac{3}{8}(\pi)^{3/2}$

Option 2

$\frac{1}{8}(\pi)^{3/2}$

Option 3

none of these

Option 4

*

Evaluate $\int_3^4 \int_1^2 \frac{dy\,dx}{(x+y)^2}$

$\log \frac{25}{24}$

Option 1

$\log \frac{5}{4}$

Option 2

$\log \frac{15}{14}$

Option 3

none of these

Option 4

*

$$\int_0^1 dx \int_0^x e^{y/x}\, dy$$ is equal to

$\frac{e-1}{2}$

Option 1

$\frac{e+1}{2}$

Option 2

$e-1$

Option 3

none of these

Option 4

*

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

1

Option 1

-1

Option 2

u

Option 3

none of these

Option 4

*

$$\int_0^{\pi/2} \int_0^{\infty} e^{-r^2}\, r\, dr\, d\theta$$ is equal to

$\frac{\pi}{2}$

Option 1

π

Option 2

$\frac{\pi}{4}$

Option 3

$\frac{\pi}{3}$

Option 4

*

$$\int_0^1 \int_0^1 \frac{dy\,dx}{(1+x^2)(1+y^2)}$$ is equal to

$\frac{\pi^2}{4}$

Option 1

$\frac{\pi^2}{8}$

Option 2

$\frac{\pi^2}{16}$

Option 3

none of these

Option 4

*

If $\beta(x, 2) = \frac{1}{3}$, find the value of x

1

Option 1

2

Option 2

3

Option 3

none of these

Option 4

*

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

1

Option 1

$-\frac{1}{2}$

Option 2

$\frac{1}{4}$

Option 3

-1

Option 4

*

The transformations $x+y+z=u$, $x+y=uv$, $y=uvw$ transform the volume element $dx\,dy\,dz$ into $|J|\,du\,dv\,dw$, where $|J|\,du\,dv\,dw$ is equal to

$u\ du\ d\,v\ dw$

Option 1

$u^2\ v\ du\ d\,v\ dw$

Option 2

$v\,u\ du\ d\,v\ dw$

Option 3

none of these

Option 4