solution: $\Omega=\int_0^1 \arcsin(x)\arccos(x)dx$

IBP $\sin^{-1}(x)=u \quad \frac{du}{dx}=\frac{1}{\sqrt{1-x^2}} \quad v=\int \cos^{-1}(x)dx=$

$=x.\cos^{-1}(x)-\sqrt{1-x^2}$

$\Omega=[uv]_0^1-\int_0^1 \frac{x.\cos^{-1}(x)}{\sqrt{1-x^2}}dx+\int_0^1 dx=$

$=\left[\frac{\sin^{-1}(x)\left(x.\cos^{-1}(x)-\sqrt{1-x^2}\right)}{1}\right]_0^1-\int_0^1 \frac{x.\cos^{-1}(x)}{\sqrt{1-x^2}}dx+$

$\int_0^1 dx=1-\int_0^1 \frac{x.\cos^{-1}(x)}{\sqrt{1-x^2}}dx \quad \cos^{-1}(x)=t \quad \frac{dt}{dx}=\frac{-1}{\sqrt{1-x^2}}$

$\Omega=1-\int_0^{\frac{\pi}{2}} \frac{t.\cos(t)}{\sqrt{1-x^2}}\times\sqrt{1-x^2}dt=1-\int_0^{\frac{\pi}{2}} t.\cos(t)dt=$

IBP×2

$= 1-[t.\sin(t)]_0^{\frac{\pi}{2}}+\int_0^{\frac{\pi}{2}} \sin(t)dt=1-\frac{\pi}{2}-|_0^{\frac{\pi}{2}}\cos(t)=$

$=1-\frac{\pi}{2}-(0-1)=2-\frac{\pi}{2}$

answer: $\int_0^1 \sin^{-1}(x)\cos^{-1}(x)dx=2-\frac{\pi}{2}$