

14. Let $u = \tan x$, $du = \sec^2 x \, dx$.

$$\begin{aligned} \text{Area} &= \int_0^{\pi/4} \frac{1}{\sin^2 x + 4 \cos^2 x} \, dx = \int_0^{\pi/4} \frac{\sec^2 x}{\tan^2 x + 4} \, dx \\ &= \int_0^1 \frac{du}{u^2 + 4} \\ &= \left[\frac{1}{2} \arctan\left(\frac{u}{2}\right) \right]_0^1 \\ &= \frac{1}{2} \arctan\left(\frac{1}{2}\right) \end{aligned}$$