

$$\begin{aligned} \rightarrow \int_0^{\frac{\pi}{4}} \frac{1}{\cos x \cot x} dx &= \int_0^{\frac{\pi}{4}} \sec x \cdot \tan x dx \\ &= \sec x \Big|_0^{\frac{\pi}{4}} \\ &= \sec \frac{\pi}{4} - \sec 0 \\ &= \frac{1}{\sqrt{2}/2} - \frac{1}{1} \\ &= \frac{2}{\sqrt{2}} - 1 \\ &= \frac{\sqrt{4}}{\sqrt{2}} - 1 \\ &= \sqrt{\frac{4}{2}} - 1 \\ &= \sqrt{2} - 1 \end{aligned}$$