

FORMULA 4.226.6

$$\int_0^{\pi/2} \ln(a^2 \cos^2 x + b^2 \sin^2 x) dx = \frac{1}{2} \int_0^\pi \ln(a^2 \cos^2 x + b^2 \sin^2 x) dx = \pi \ln\left(\frac{a+b}{2}\right)$$