

**FORMULA 4.384.1**

$$\begin{aligned}\int_0^1 \ln(\sin x) \sin(2n+1)\pi x \, dx &= 2 \int_0^{1/2} \ln(\sin x) \sin(2n+1)\pi x \, dx \\ &= \frac{2}{(2n+1)\pi} \left[ \ln 2 - \frac{1}{2n+1} - 2 \sum_{k=1}^n \frac{1}{2k-1} \right]\end{aligned}$$