

FORMULA 4.241.4

$$\int_0^1 x^{2n+1} \sqrt{1-x^2} \ln x \, dx = \frac{(2n)!!}{(2n+3)!!} \frac{\pi}{2} \left(\sum_{k=1}^{2n+1} \frac{(-1)^k}{k} - \frac{1}{2n+3} + \ln 2 \right)$$