

FORMULA 4.241.3

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