

FORMULA 4.272.3

$$\int_0^1 \frac{x^{\nu-1} \ln^\mu(1/x) dx}{1 - 2ax \cos t + a^2 x^2} = \frac{\Gamma(\mu+1)}{a \sin t} \sum_{k=1}^{\infty} \frac{a^k \sin kt}{(\nu+k-1)^{\mu+1}}$$