

FORMULA 4.272.10

$$\int_0^1 \left(\ln \frac{1}{x}\right)^{\mu-1} (x-1)^n \left(a + \frac{nx}{x-1}\right) x^{a-1} dx = \Gamma(\mu) \sum_{k=0}^n \frac{(-1)^k}{(a+n-k)^{\mu-1}} \binom{n}{k}$$