

FORMULA 4.253.1

$$\int_0^1 x^{\mu-1}(1-x^r)^{\nu-1} \ln x \, dx = \frac{1}{r^2} B\left(\frac{\mu}{r}, \nu\right) \left[\psi\left(\frac{\mu}{r}\right) - \psi\left(\frac{\mu}{r} + \nu\right) \right]$$