

**FORMULA 4.261.21**

$$\int_0^1 x^{p-1}(1-x^r)^{q-1} \ln^2 x \, dx = \frac{B(p/r, q)}{r^3} \left( \psi' \left( \frac{p}{r} \right) - \psi' \left( \frac{p}{r} + q \right) + \left[ \psi \left( \frac{p}{r} \right) - \psi \left( \frac{p}{r} + q \right) \right]^2 \right)$$