**FORMULA 4.261.21**

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