

**PROOF OF FORMULA 4.325.8**

$$\int_0^1 x^{\mu-1} \ln \ln 1/x \, dx = -\frac{1}{\mu}(\gamma + \ln \mu)$$

The change of variables  $t = \ln 1/x$  gives

$$\int_0^1 x^{\mu-1} \ln \ln 1/x \, dx = \int_0^\infty e^{-\mu t} \ln t \, dt.$$

Entry 4.331.1 gives the value of this last integrals as  $-(\gamma + \ln \mu)/\mu$ .