**PROOF OF FORMULA 3.249.7**

$$\int_0^1 (1-x^\mu)^{-1/\nu}\,dx = \frac{1}{\mu}B\left(\frac{1}{\mu},1-\frac{1}{\nu}\right)$$

Let $y = x^\mu$ to obtain

$$\int_0^1 (1-x^\mu)^{-1/\nu}\,dx = \frac{1}{\mu}\int_0^1 y^{1/\mu-1}(1-y)^{-1/\nu}\,dy.$$

The result now follows from the integral representation for the beta function

$$B(a,b) = \int_0^1 y^{a-1}(1-y)^{b-1}\,dy.$$