

**PROOF OF FORMULA 3.216.1**

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

In the representation

$$B(\mu, \nu) = \int_0^\infty \frac{x^{\mu-1} dx}{(1+x)^{\mu+\nu}} = \int_0^1 \frac{x^{\mu-1} dx}{(1+x)^{\mu+\nu}} + \int_1^\infty \frac{x^{\mu-1} dx}{(1+x)^{\mu+\nu}}$$

let  $t = 1/x$  in the second integral. The result comes directly.