

FORMULA 3.222.2

$$\int_0^{\infty} \frac{x^{\mu-1} dx}{x+a} = \frac{\pi}{\sin \pi\mu} \times \begin{cases} a^{\mu-1} & \text{if } a > 0 \\ -\cos(\pi\mu)(-a)^{\mu-1} & \text{if } a < 0 \end{cases}$$