

**FORMULA 3.419.6**

$$\int_{-\infty}^{\infty} \frac{x^5 dx}{(\beta + e^x)(1 - e^{-x})} = \frac{(\pi^2 + \ln^2 \beta)^2 (3\pi^2 + \ln^2 \beta)}{6(\beta + 1)}$$