

**FORMULA 3.311.12**

$$\int_0^{\infty} \frac{a^x - b^x}{c^x - d^x} dx = \frac{1}{(\ln c - \ln d)} \left[ \psi \left( \frac{\ln c - \ln b}{\ln c - \ln d} \right) - \psi \left( \frac{\ln c - \ln a}{\ln c - \ln d} \right) \right]$$