

FORMULA 3.524.1

$$\int_0^{\infty} x^{s-1} \frac{\sinh bx}{\sinh cx} dx = \frac{\Gamma(s)}{(2c)^s} \left[\zeta\left(s, \frac{1}{2}\left(1 - \frac{b}{c}\right)\right) - \zeta\left(s, \frac{1}{2}\left(1 + \frac{b}{c}\right)\right) \right]$$