

C4282

! For an efficient use of these tables, first read [HowTo.pdf](#).

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T2.39A. Integrands involving hyperbolic functions and algebraic functions on the interval $(0, y)$.

$$1. \int_0^y \frac{x \, dx}{\cosh 2x - \cos 2t} = \frac{1}{2} \csc 2t [L(\theta + t) - L(\theta - t) - 2L(t)], \quad \theta = \arctan(\tanh y \cot t), \quad t \neq n\pi.$$

$$2. \int_0^y \frac{x \cosh x \, dx}{\cosh 2x - \cos 2t} = \frac{1}{2} \csc t \left\{ L\left(\frac{\theta + t}{2}\right) - L\left(\frac{\theta - t}{2}\right) + L\left(\pi - \frac{\psi + t}{2}\right) \right. \\ \left. + L\left(\frac{\psi - t}{2}\right) - 2L\left(\frac{t}{2}\right) - 2L\left(\frac{\pi - t}{2}\right) \right\},$$

$$\text{where } \tan \frac{\theta}{2} = \tanh \frac{y}{2} \cot \frac{t}{2}, \quad \tan \frac{\psi}{2} = \coth \frac{y}{2} \cot \frac{t}{2}; \quad t \neq n\pi.$$

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