

C4282

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

C4282

T3.24B. Integrands involving exponentials and rational functions on the intervals $(-\infty, y)$ and $(-\infty, \infty)$.

$$1. \int_{-\infty}^y \frac{e^x}{x} dx = \operatorname{li}(e^y) = \operatorname{Ei}(y), \quad u < 0.$$

C4282

$$2. \int_{-\infty}^{\infty} \frac{e^{ipx} dx}{x-a} = i\pi e^{iap}, \quad p > 0.$$

$$3. \int_{-\infty}^{\infty} \frac{e^{-ipx} dx}{a^2 + x^2} = \frac{\pi}{a} e^{-|ap|}, \quad a \neq 0, p \text{ real.}$$

C4282

$$4. \int_{-\infty}^{\infty} \frac{(i-x)^n}{(i+x)^n} \frac{e^{-ipx}}{i+x^2} dx = \begin{cases} (-1)^{n-1} 2\pi p e^{-p} L_{n-1}(2p), & \text{for } p > 0, \\ 0, & \text{for } p < 0. \end{cases}$$

C4282

C4282

C4282

C4282

C4282