

C4282

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

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T3.01D. Powers of x and binomials of the form $(a + bx)$ on the interval $(-\infty, \infty)$.

$$1. \int_{-\infty}^{\infty} \frac{|x|^{\nu-1}}{x-u} dx = -\pi \cot \frac{\nu\pi}{2} |u|^{\nu-1} \operatorname{sgn} u, \quad 0 < \Re\{\nu\} < 1, \quad u \text{ real}, u \neq 0.$$

$$2. \int_{-\infty}^{\infty} \frac{|x|^{\nu-1}}{x-u} \operatorname{sgn} x dx = \pi \tan \frac{\nu\pi}{2} |u|^{\nu-1}, \quad 0 < \Re\{\nu\} < 1, \quad u \text{ real}, u \neq 0.$$

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