

C4282

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

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**T3.51B.** Integrands involving logarithm functions and algebraic functions on the intervals  $(c, \infty)$  and  $(1, \infty)$ .

$$1. \int_c^\infty \frac{\ln x \, dx}{\sqrt{(x^2 - c^2)(x^2 - b^2)}} = \frac{1}{2c} \left[ \mathbf{K} \left( \frac{b}{c} \right) \ln bc + \frac{\pi}{2} \mathbf{K} \left( \frac{\sqrt{c^2 - b^2}}{c} \right) \right], \quad c > b > 0.$$

$$2. \int_c^\infty \frac{\ln x \, dx}{\sqrt{(x^2 + c^2)(x^2 - b^2)}} = \frac{1}{2\sqrt{b^2 + c^2}} \left[ \mathbf{K} \left( \frac{c}{\sqrt{b^2 + c^2}} \right) \ln bc + \frac{\pi}{2} \mathbf{K} \left( \frac{b}{\sqrt{b^2 + c^2}} \right) \right],$$

$$b > 0, c > 0.$$

$$3. \int_1^\infty \frac{\ln x \, dx}{x^2 \sqrt{x^2 - 1}} = 1 - \ln 2.$$

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