

C4282

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

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**T2.27A.** Integrands of the form  $\sqrt{\frac{x^2 \pm b^2}{(a^2 \pm x^2)^n}}$  for  $n = 1, 3$  on the intervals  $(y, a)$  and  $(a, y)$ .

Notation used:  $\lambda = \arcsin \sqrt{\frac{a^2 - y^2}{a^2 - b^2}}, \quad \mu = \arcsin \sqrt{\frac{y^2 - a^2}{y^2 - b^2}},$

$$q = \frac{\sqrt{a^2 - b^2}}{a}, \quad t = \frac{b}{a}.$$

$$1. \int_y^a \sqrt{\frac{a^2 - x^2}{(x^2 - b^2)^3}} dx = \frac{y}{b^2} \sqrt{\frac{a^2 - y^2}{y^2 - b^2}} \frac{a}{b^2} E(\lambda, q), \quad a > y > b > 0.$$

$$2. \int_a^y \sqrt{\frac{x^2 - a^2}{(x^2 - b^2)^3}} dx = \frac{a}{b^2} [F(\mu, t) - E(\mu, t)], \quad y > a > b > 0.$$

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