! For an efficient use of these tables, first read `HowTo.pdf`.

T2.18A. Integrands of the form $\dfrac{1}{x^4\sqrt{(a^2 \pm x^2)\,(b^2 \pm x^2)}}$ on the intervals (y, a) and (a, y).

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

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

1. $$\int_y^a \frac{dx}{x^4\sqrt{(a^2 - x^2)(x^2 - b^2)}} = \frac{1}{3a^3b^4}\left\{2(a^2 + b^2)E(\lambda,\, q) - b^2F(\lambda,\, q) - \frac{2(a^2 + b^2)y^2 + a^2b^2}{ay^3}\sqrt{(a^2 - y^2)(y^2 - b^2)}\right\}, \quad a > y \geq b > 0.$$

2. $$\int_a^y \frac{dx}{x^4\sqrt{(x^2 - a^2)(x^2 - b^2)}} = \frac{1}{3a^3b^4}\left\{(2a^2 + b^2)F(\mu,\, t) - 2(a^2 + b^2)E(\mu,\, t) + \frac{[(a^2 + 2b^2)y^2 + a^2b^2]b^2}{ay^3}\sqrt{\frac{y^2 - a^2}{y^2 - b^2}}\right\}, \quad y > a > b > 0.$$