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

T2.17A. Integrands of the form $\dfrac{x^n}{\sqrt{(a^2 \pm x^2)^3\,(b^2 \pm x^2)}}$ and $\dfrac{x^n}{\sqrt{(a^2 \pm x^2)\,(b^2 \pm x^2)^3}}$ for $n = 0, 2,$ on the intervals (y, a) and (a, y).

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

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

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

2. $$\int_a^y \frac{dx}{\sqrt{(x^2 - a^2)(x^2 - b^2)^3}} = \frac{a}{b^2(a^2 - b^2)}E(\mu,\, t) - \frac{1}{ab^2}F(\mu,\, t), \quad y > a > b > 0.$$

3. $$\int_y^a \frac{x^2\,dx}{\sqrt{(a^2 - x^2)(x^2 - b^2)^3}} = \frac{1}{a^2 - b^2}\left\{aF(\lambda,\, q) - aE(\lambda,\, q) + y\sqrt{\frac{a^2 - y^2}{y^2 - b^2}}\right\},$$
$$a > y > b > 0.$$

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