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

T2.22B. Integrands of the form $\dfrac{1}{\sqrt{x^4+1}}$, $\dfrac{1}{x^2\sqrt{x^4+1}}$, $\dfrac{x^2}{(x^4\pm 1)\sqrt{x^4+1}}$, $\dfrac{\sqrt{x^4+1}}{(x^2\pm 1)^2}$, and $\dfrac{(x^2\pm 1)^2}{(x^2+2ax+a^2)\sqrt{x^4+1}}$ on the interval $(y, 1)$.

Notation used: $\beta = \arctan\left\{(1+\sqrt{2})\dfrac{1-y}{1+y}\right\}$, $\gamma = \arccos y$, $\delta = \arccos\dfrac{1}{y}$,

$q = 2\sqrt{3\sqrt{2}-4}$, $r = \dfrac{\sqrt{2}}{2}$.

1. $$\int_y^1 \frac{dx}{\sqrt{x^4+1}} = (2-\sqrt{2})F(\beta,\, q), \quad 0 \le y < 1.$$

2. $$\int_y^1 \frac{(x^2+x\sqrt{2}+1)\,dx}{(x^2-x\sqrt{2}+1)\sqrt{x^4+1}} = (2+\sqrt{2})E(\beta,\, q), \quad 0 \le y < 1.$$

3. $$\int_y^1 \frac{(1-x)^2\,dx}{(x^2-x\sqrt{2}+1)\sqrt{x^4+1}} = \frac{1}{\sqrt{2}}[F(\beta,\, q) - E(\beta,\, q)], \quad 0 \le y < 1.$$

4. $$\int_y^1 \frac{(1+x)^2\,dx}{(x^2-x\sqrt{2}+1)\sqrt{x^4+1}} = \frac{3\sqrt{2}+4}{2}E(\beta,\, q) - \frac{3\sqrt{2}-4}{2}F(\beta,\, q), \quad 0 \le y < 1.$$

5. $$\int_y^1 \frac{dx}{\sqrt{1-x^4}} = \frac{1}{\sqrt{2}}F(\gamma,\, r), \quad y < 1.$$

6. $$\int_y^1 \frac{x^2\,dx}{\sqrt{1-x^4}} = \begin{cases} \sqrt{2}E(\gamma,\, r) - \dfrac{1}{\sqrt{2}}F(\gamma,\, r), & y < 1, \\ \dfrac{1}{\sqrt{2\pi}}\left\{\Gamma\left(\dfrac{3}{4}\right)\right\}^2, & y = 0. \end{cases}$$

7. $\displaystyle\int_y^1 \frac{x^4\,dx}{\sqrt{1-x^4}} = \frac{1}{3\sqrt{2}}F(\gamma,\, r) + \frac{y}{3}\sqrt{1-y^4}, \quad y < 1.$