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

T2.45B. Integrands involving powers of linear trigonometric functions on the interval $(0, \pi/2)$.

1. $\displaystyle\int_0^{\pi/2} (\sec x - 1)^\mu \sin x\, dx = \int_0^{\pi/2} (\csc x - 1)^\mu \cos x\, dx = \mu\pi \csc \mu\pi, \quad |\Re\{\mu\}| < 1.$

2. $\displaystyle\int_0^{\pi/2} (\csc x - 1)^\mu \sin 2x\, dx = (1-\mu)\mu\pi \csc \mu\pi, \quad -1 < \Re\{\mu\} < 2.$

3. $\displaystyle\int_0^{\pi/2} (\sec x - 1)^\mu \tan x\, dx = \int_0^{\pi/2} (\csc x - 1)^\mu \cot x\, dx = -\pi \csc \mu\pi, \quad -1 < \Re\{\mu\} < 0.$

4. $\displaystyle\int_0^{\pi/2} \frac{\sin^{\mu-1} x \cos^{\nu-1} x}{(\sin x + \cos x)^{\mu+\nu}}\, dx = \mathrm{B}(\mu, \nu), \quad \Re\{\mu\} > 0,\ \Re\{\nu\} > 0.$

5. $\displaystyle\int_0^{\pi/2} \frac{\sin^{p-1} x \cos^{q-p-1} x\, dx}{(a \cos x + b \sin x)^q} = \int_0^{\pi/2} \frac{\sin^{q-p-1} x \cos^{p-1} x}{(a \sin x + b \cos x)^q}\, dx = \frac{\mathrm{B}(p, q-p)}{a^{q-p}\, b^p},$
$q > p > 0,\ ab > 0.$