

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

**T2.45A.** Integrands involving powers of linear trigonometric functions on the interval  $(0, \pi/4)$ .

1.  $\int_0^{\pi/4} (\cot x - 1)^\mu \frac{dx}{\sin 2x} = -\frac{\pi}{2} \csc \mu\pi, \quad -1 < \Re\{\mu\} < 0.$
  2.  $\int_0^{\pi/4} (\cot x - 1)^\mu \frac{dx}{\cos^2 x} = \mu\pi \csc \mu\pi, \quad |\Re\{\mu\}| < 1.$
  3.  $\int_0^{\pi/4} \frac{\sin^{\mu-1} 2x \, dx}{(\cos x + \sin x)^{2\mu}} = \frac{\sqrt{\pi}}{2^{\mu+1}} \frac{\Gamma(\mu)}{\Gamma(\mu + \frac{1}{2})}, \quad \Re\{\mu\} > 0.$
  4.  $\int_0^{\pi/4} \frac{\sin^\mu x \, dx}{(\cos x - \sin x)^{\mu+1} \cos x} = -\pi \csc \mu\pi, \quad -1 < \Re\{\mu\} < 0.$
  5.  $\int_0^{\pi/4} \frac{(\cos x - \sin x)^\mu}{\sin^\mu x \sin 2x} dx = -\frac{\pi}{2} \csc \mu\pi, \quad -1 < \Re\{\mu\} < 0.$
  6.  $\int_0^{\pi/4} \frac{\sin^\mu x \, dx}{(\cos x - \sin x)^\mu \sin 2x} = \frac{\pi}{2} \csc \mu\pi, \quad 0 < \Re\{\mu\} < 1.$
  7.  $\int_0^{\pi/4} \frac{\sin^\mu x \, dx}{(\cos x - \sin x)^\mu \cos^2 x} = \mu\pi \csc \mu\pi, \quad |\Re\{\mu\}| < 1.$
  8.  $\int_0^{\pi/4} \frac{\sin^\mu x \, dx}{(\cos x - \sin x)^{\mu-1} \cos^3 x} = \frac{1-\mu}{2} \mu\pi \csc \mu\pi, \quad |\Re\{\mu\}| < 1.$
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