

FORMULA 3.833.1

$$\begin{aligned} \int_0^{\infty} \sin^{2m+1} x \cos^{2n} x \frac{dx}{x} &= \int_0^{\infty} \sin^{2m+1} x \cos^{2n-1} x \frac{dx}{x} = \frac{(2m-1)!! (2n-1)!!}{2^{m+n+1} (m+n)!} \\ &= \frac{1}{2} B\left(m + \frac{1}{2}, n + \frac{1}{2}\right) \end{aligned}$$