

FORMULA 3.632.1

$$\int_0^\pi \sin^{p-1} x \cos \left[a \left(\frac{\pi}{2} - x \right) \right] dx = 2^{p-1} \frac{\Gamma \left(\frac{p-a}{2} \right) \Gamma \left(\frac{p+a}{2} \right)}{\Gamma(p-a)\Gamma(p+a)} \Gamma(p)$$