**FORMULA 3.791.7**

$$\int_0^{\pi/2} \frac{x^{p+1}\,dx}{1-\cos x} = -\left(\frac{\pi}{2}\right)^{p+1} + \left(\frac{\pi}{2}\right)^{p}(p+1)\left\{\frac{2}{p} - \sum_{k=1}^{\infty} \frac{\zeta(2k)}{4^{2k-1}(p+2k)}\right\} \quad p>0$$