

FORMULA 3.273.1

$$\int_0^1 \frac{\sin t - a^n x^n \sin[(n+1)t] + a^{n+1} x^{n+1} \sin nt}{1 - 2ax \cos t + a^2 x^2} (1-x)^{p-1} dx = \Gamma(p) \sum_{k=1}^n \frac{(k-1)! a^{k-1} \sin kt}{\Gamma(p+k)}$$