

**FORMULA 4.255.1**

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