

FORMULA 4.235.2

$$\int_0^{\infty} \ln x \frac{(1-x^2)x^{m-1}}{1-x^{2n}} dx = -\frac{\pi^2 \sin\left(\frac{(m+1)\pi}{n}\right) \sin\frac{\pi}{n}}{4n^2 \sin^2\left(\frac{m\pi}{2n}\right) \sin^2\left(\frac{(m+2)\pi}{2n}\right)}$$