

FORMULA 4.261.19

$$\int_0^1 \ln^2 x \frac{1 + (-1)^n x^{n+1}}{(1-x)^2} dx = \frac{3}{2}(n+1)\zeta(3) - 2 \sum_{k=1}^n (-1)^{k-1} \frac{n+1-k}{k^3}$$