

FORMULA 4.257.5

$$\int_0^{\infty} \ln x \ln \frac{x}{a} \frac{x^p dx}{(x-1)(x-a)} = \frac{\pi^2 [(a^p + 1) \ln a - 2\pi(a^p - 1) \cot p\pi]}{(a-1) \sin^2 p\pi} \quad a > 0, a \neq 1, p^2 < 1$$