

FORMULA 4.441.1

$$\int_0^{\infty} e^{-qx} \sin px \ln x \, dx = \frac{1}{p^2 + q^2} \left[q \tan^{-1} \left(\frac{p}{q} \right) - p\gamma - \frac{p}{2} \ln(p^2 + q^2) \right]$$