

FORMULA 4.242.3

$$\int_b^{\infty} \frac{\ln x \, dx}{\sqrt{(x^2 + a^2)(x^2 - b^2)}} = \frac{1}{2\sqrt{a^2 + b^2}} \left[\mathbf{K} \left(\frac{a}{\sqrt{a^2 + b^2}} \right) \ln ab + \frac{\pi}{2} \mathbf{K} \left(\frac{b}{\sqrt{a^2 + b^2}} \right) \right] \quad a > 0, b > 0$$