

PROOF OF FORMULA 4.271.7

$$\int_0^{\infty} \frac{(\ln x)^{2n+1} dx}{1 + bx + x^2} = 0$$

The change of variables $x \mapsto 1/x$ shows that

$$\int_0^{\infty} \frac{(\ln x)^{2n+1} dx}{1 + bx + x^2} = - \int_0^{\infty} \frac{(\ln x)^{2n+1} dx}{1 + bx + x^2}.$$

Therefore, the integral must vanish.