**13.** $\displaystyle\int_a^b \big(\ln|x-t|+\beta\big)y(t)\,dt = f(x).$

By setting

$$x = e^{-\beta}z, \quad t = e^{-\beta}\tau, \quad y(t) = Y(\tau), \quad f(x) = e^{-\beta}g(z),$$

we arrive at an equation of the form 3.12:

$$\int_A^B \ln|z-\tau|\,Y(\tau)\,d\tau = g(z), \qquad A = ae^{\beta},\ B = be^{\beta}.$$

## Reference

**Polyanin, A. D. and Manzhirov, A. V.,** *Handbook of Integral Equations*, CRC Press, Boca Raton, 1998.

 