11. $\displaystyle\int_a^x \left[e^{\lambda(x-t)} + b\right] y(t)\,dt = f(x), \qquad f(a) = 0.$

For $b = -1$, see equation 1.10.

Solution:

$$y(x) = \frac{f'_x(x)}{b+1} - \frac{\lambda}{(b+1)^2}\int_a^x \exp\left[\frac{\lambda b}{b+1}(x-t)\right] f'_t(t)\,dt.$$

Reference

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

