



12. $\int_a^x [e^{\lambda(x-t)} - e^{\mu(x-t)}] y(t) dt = f(x), \quad f(a) = f'_x(a) = 0.$

Solution:

$$y(x) = \frac{1}{\lambda - \mu} [f''_{xx} - (\lambda + \mu)f'_x + \lambda\mu f], \quad f = f(x).$$

Reference

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