

2.
$$y(x) + \lambda \int_a^x (x-t)y(t) dt = f(x)$$
.

1°. Solution for $\lambda > 0$:

$$y(x) = f(x) - k \int_{a}^{x} \sin[k(x-t)]f(t) dt, \qquad k = \sqrt{\lambda}.$$

 2° . Solution for $\lambda < 0$:

$$y(x) = f(x) + k \int_{a}^{x} \sinh[k(x-t)]f(t) dt, \qquad k = \sqrt{-\lambda}.$$

Reference

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

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