

17.
$$\int_{a}^{x} \cosh^{2}[\lambda(x-t)]y(t) dt = f(x), \qquad f(a) = 0.$$

Solution:

$$y(x) = f_x'(x) - \frac{2\lambda^2}{k} \int_a^x \sinh[k(x-t)] f_t'(t) dt, \quad \text{where} \quad k = \lambda \sqrt{2}.$$

Reference

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

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