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

Solution:

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

Reference

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

