



2. $\int_0^a \frac{y(t)}{\sqrt{|x-t|}} dt = f(x), \quad 0 < a \leq \infty.$

Solution:

$$y(x) = -\frac{A}{x^{1/4}} \frac{d}{dx} \left[\int_x^a \frac{dt}{(t-x)^{1/4}} \int_0^t \frac{f(s) ds}{s^{1/4}(t-s)^{1/4}} \right], \quad A = \frac{1}{\sqrt{8\pi} \Gamma^2(3/4)}.$$

References

Gakhov, F. D., *Boundary Value Problems* [in Russian], Nauka, Moscow, 1977.

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