

2. $y^{\lambda}(x)y(a-x)=f(x)$.

This is a special case of equation 2, Subsection 2.3. Solution:

$$y(x) = [f(x)]^{-\frac{\lambda}{1-\lambda^2}} [f(a-x)]^{\frac{1}{1-\lambda^2}}.$$

Reference

Polyanin, A. D. and Manzhirov, A. V., *Handbook of Integral Equations: Exact Solutions (Supplement. Some Functional Equations)* [in Russian], Faktorial, Moscow, 1998.

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