

12. 
$$y(x) + \int_a^b e^{\lambda |x-t|} f(t,y(t)) dt = g(x), \quad a \leq x \leq b.$$

The solution of this integral equation is determined by the solution of the second-order ordinary differential equation

$$y_{xx}'' + 2\lambda f(x, y) - \lambda^2 y = g_{xx}''(x) - \lambda^2 g(x)$$

under the boundary conditions

$$\varphi_x'(a) + \lambda \varphi(a) = 0, \quad \varphi_x'(b) - \lambda \varphi(b) = 0; \qquad \varphi(x) = y(x) - g(x).$$

## Reference

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

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