

12. 
$$y(x) + \int_a^x \sin[\lambda(x-t)]f(t,y(t)) dt = g(x)$$
.

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

$$y_{xx}'' + \lambda f(x, y) + \lambda^2 y - \lambda^2 g(x) - g_{xx}''(x) = 0$$

under the initial conditions

$$y(a) = g(a),$$
  $y'_x(a) = g'_x(a).$ 

## Reference

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

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