

8.
$$y(x) + \int_a^b f(t, y(t)) dt = g(x)$$
.

A solution: $y(x) = g(x) + \lambda$, where λ is determined by the algebraic (or transcendental) equation

$$\lambda + F(\lambda) = 0,$$
 $F(\lambda) = \int_a^b f(t, g(t) + \lambda) dt.$

Reference

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

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