



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

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

$$y'_x + f(x, y) - g'_x(x) = 0$$

under the initial condition $y(a) = g(a).$

Reference

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