9. $y(x) + \int_a^b e^{\lambda(x-t)} f\big(t, y(t)\big)\, dt = g(x).$

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

$$\beta + F(\beta) = 0, \qquad F(\beta) = \int_a^b e^{-\lambda t} f\big(t,\ \beta e^{\lambda t} + g(t)\big)\, dt.$$

Reference

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

