



1. $\int_a^b g(t)y(x)y(t) dt = f(x).$

Solutions:

$$y(x) = \pm \lambda f(x), \quad \lambda = \left[\int_a^b f(t)g(t) dt \right]^{-1/2}.$$

Reference

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