

4.
$$\int_{a}^{x} \sqrt{x-t} y(t) dt = f(x), \quad f(a) = 0.$$

Solution:
$$y(x) = \frac{2}{\pi} \frac{d^2}{dx^2} \int_a^x \frac{f(t) dt}{\sqrt{x - t}}$$
.

Reference

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

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