

38.
$$\int_{a}^{x} \frac{y(t) dt}{\sqrt{g(x) - g(t)}} = f(x), \qquad g'_{x}(x) > 0.$$

Solution:
$$y(x) = \frac{1}{\pi} \frac{d}{dx} \int_a^x \frac{f(t)g_t'(t) dt}{\sqrt{g(x) - g(t)}}$$
.

Reference

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

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