

34. 
$$\int_{a}^{x} [g(x) - g(t) + b]y(t) dt = f(x), \qquad f(a) = 0.$$

For b = 0, see equation 1.33.

Solution:

$$y(x) = \frac{1}{b}f_x'(x) - \frac{1}{b^2}g_x'(x)\int_a^x \exp\left[\frac{g(t) - g(x)}{b}\right]f_t'(t) dt.$$

## Reference

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

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