

33.
$$\int_{a}^{x} [g(x) - g(t)]y(t) dt = f(x)$$
.

It is assumed that
$$f(a) = f'_x(a) = 0$$
 and $f'_x/g'_x \neq \text{const.}$
Solution: $y(x) = \frac{d}{dx} \left[\frac{f'_x(x)}{g'_x(x)} \right]$.

Reference

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

Copyright © 2004 Andrei D. Polyanin

http://eqworld.ipmnet.ru/en/solutions/ie/ie0133.pdf