**33.** $\displaystyle\int_a^x [g(x) - g(t)]y(t)\,dt = f(x).$

It is assumed that $f(a) = f'_x(a) = 0$ and $f'_x/g'_x \neq \text{const}$.

Solution: $\displaystyle y(x) = \frac{d}{dx}\left[\frac{f'_x(x)}{g'_x(x)}\right]$.

## Reference

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