



53. $y(x) + g(x)y(\omega(x)) = f(x)$, **where** $\omega(\omega(x)) = x$.

Solution:

$$y(x) = \frac{f(x) - g(x)f(\omega(x))}{1 - g(x)g(\omega(x))}.$$

Reference

Polyanin, A. D. and Manzhirov, A. V., *Handbook of Integral Equations: Exact Solutions (Supplement. Some Functional Equations)* [in Russian], Faktorial, Moscow, 1998.