



23. $y(x) + y(a/x) = f(x)$.

The right-hand side is assumed to satisfy the condition $f(x) = f(a/x)$.

Solution:

$$y(x) = \frac{1}{2} f(x) + \Phi(x, a/x),$$

where $\Phi(x, z) = -\Phi(z, x)$ is any antisymmetric function of two arguments.

Reference

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