35. $\quad y(x) + g(x)y\left(\dfrac{bx + \beta}{a - x}\right) = f(x), \qquad \beta = a^2 + ab + b^2.$

This is a special case of equation 12 in Subsection 1.2.

Reference

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

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