

3. $F(x, y(x), y(ax)) = 0, \quad a > 0.$

The transformation $z = \ln x$, w(z) = y(x) leads to the equation

$$F(e^z, w(z), w(z+b)) = 0, b = \ln a.$$

See equation 1 in the current subsection.

Reference

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

Copyright © 2004 Andrei D. Polyanin

http://eqworld.ipmnet.ru/en/solutions/fe/fe2303.pdf