

## 6. Ay(ax) + By(bx) + y(x) = 0.

This functional equation has particular solutions of the form  $y(x) = Cx^{\beta}$ , where C is an arbitrary constant, and  $\beta$  is a root of the transcendental equation  $Aa^{\beta} + Bb^{\beta} + 1 = 0$ .

## 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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http://eqworld.ipmnet.ru/en/solutions/fe/fe1206.pdf