



**19.  $y(a_n x) + b_{n-1}y(a_{n-1}x) + \dots + b_1y(a_1x) + b_0y(x) = 0.$**

There are particular solutions of the form  $y = Cx^\beta$ , where  $C$  is an arbitrary constant, and  $\beta$  is a root of the transcendental equation

$$a_n^\beta + b_{n-1}a_{n-1}^\beta + \dots + b_1a_1^\beta + b_0 = 0.$$

### Reference

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