

- 4. $y''_{xx} + ay'_x + (bx + c)y = 0$.
- 1°. Solution with $b \neq 0$:

$$y = \exp\left(-\frac{1}{2}ax\right)\sqrt{\xi}\left[C_1J_{1/3}\left(\frac{2}{3}\sqrt{b}\,\xi^{3/2}\right) + C_2Y_{1/3}\left(\frac{2}{3}\sqrt{b}\,\xi^{3/2}\right)\right], \quad \xi = x + \frac{4c - a^2}{4b},$$

where $J_{1/3}(z)$ and $Y_{1/3}(z)$ are the Bessel functions, C_1 and C_2 are arbitrary constants.

 2° . For b = 0, see equation 2.3.

Referenc

Polyanin, A. D. and Zaitsev, V. F., *Handbook of Exact Solutions for Ordinary Differential Equations, 2nd Edition,* Chapman & Hall/CRC, Boca Raton, 2003.

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