

**40.** 
$$y_{xx}^{\prime\prime} - a(y_x^{\prime})^2 + f(x)e^{ay} + g(x) = 0$$
.

The substitution  $w=e^{-ay}$  leads to a nonhomogeneous linear equation:  $w''_{xx}-ag(x)w=af(x)$ .

## Reference

**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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