

13. $y''_{xx} = yf(e^{ax}y^m)$.

The transformation $z=e^{ax}y^m$, $w=y_x'/y$ leads to a first-order equation: $z(mw+a)w_z'=f(z)-w^2$.

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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