



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.