

33. 
$$x^2y_{xx}'' + xy_x' = f(x^ne^{ay})$$
.

The transformation  $z = x^n e^{ay}$ ,  $w = xy'_x$  leads to a first-order separable equation:  $z(aw+n)w'_z = f(z)$ .

## 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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