



**34.**  $x[f(x^n y^m) + mx^k g(x^n y^m)]y'_x = y[h(x^n y^m) - nx^k g(x^n y^m)].$

The transformation  $t = x^n y^m$ ,  $z = x^{-k}$  leads to a linear equation with respect to  $z = z(t)$ :

$$t[nf(t) + mh(t)]z'_t = -kf(t)z - kmg(t).$$

### Reference

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