



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

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

$$t[nf(t) + mh(t)]z'_t = -kh(t)z + kng(t).$$

Reference

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