

36. $x[sf(x^ny^m) - mg(x^ky^s)]y'_x = y[ng(x^ky^s) - kf(x^ny^m)].$

The transformation $t = x^n y^m$, $w = x^k y^s$ leads to a separable equation: $tf(t)w_t' = wg(w)$.

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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