

First-Order Partial Differential Equations > Linear Equations > Section 1.3

11.
$$f(x)\frac{\partial w}{\partial x} + g(y)\frac{\partial w}{\partial y} = h(x,y)w + r(x,y)$$
.

The transformation

$$\xi = \int \frac{dx}{f(x)}, \quad \eta = \int \frac{dy}{g(y)}$$

leads to an equation of the form 1.3.5 for $w = w(\xi, \eta)$.

Reference

Polyanin, A. D., Zaitsev, V. F., and Moussiaux, A., Handbook of First Order Partial Differential Equations, Taylor & Francis, London, 2002.

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http://eqworld.ipmnet.ru/en/solutions/fpde/fpde1311.pdf