



First-Order Partial Differential Equations > Linear Equations > Section 1.1

$$5. \quad [f(y) + amx^n y^{m-1}] \frac{\partial w}{\partial x} - [g(x) + anx^{n-1} y^m] \frac{\partial w}{\partial y} = 0.$$

1°. Principal integral: $\Xi = \int f(y) dy + \int g(x) dx + ax^n y^m.$

2°. General solution: $w = \Phi(\Xi)$, where $\Phi(\Xi)$ is an arbitrary function.

Reference

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