

First-Order Partial Differential Equations > Nonlinear Equations > Section 3.1

6.
$$\frac{\partial w}{\partial x} - f(w) \left(\frac{\partial w}{\partial y}\right)^2 = 0$$
.

Complete integral in implicit form:

$$\int f(w) \, dw = C_1^2 x + C_1 y + C_2,$$

where C_1 and C_2 are arbitrary constants.

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/fpde3106.pdf