



First-Order Partial Differential Equations > Quasilinear Equations > Section 2.2

5.
$$\frac{\partial w}{\partial x} + [f(w) + ay] \frac{\partial w}{\partial y} = 0.$$

General solution:

$$x = \frac{1}{a} \ln |ay + f(w)| + \Phi(w),$$

where $\Phi(w)$ 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.