



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

$$2. \quad \frac{\partial w}{\partial x} + [aw + f(y)] \frac{\partial w}{\partial y} = 0.$$

General solution:

$$x = \int_{y_0}^y \frac{dt}{f(t) + aw} + \Phi(w),$$

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.