



First-Order Partial Differential Equations > Quasilinear Equations > Section 2.1

$$11. \quad ae^{\lambda y} \frac{\partial w}{\partial x} + be^{\beta x} \frac{\partial w}{\partial y} = f(w).$$

General solution:

$$\int \frac{dw}{f(w)} = \frac{c(\beta x - \lambda y)}{u} + \Phi(u), \quad u = a\beta e^{\lambda y} - b\lambda e^{\beta x},$$

where $\Phi(u)$ 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.