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

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.

