1. $\dfrac{\partial w}{\partial x} + aw\dfrac{\partial w}{\partial y} = f(x).$

General solution:

$$y = ax\big[w - F(x)\big] + a\int F(x)\,dx + \Phi\big(w - F(x)\big), \qquad F(x) = \int f(x)\,dx,$$

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.