9. $x\dfrac{\partial w}{\partial x} + yf(x^n y^m)\dfrac{\partial w}{\partial y} = 0.$

1°. Principal integral: $\Xi = \displaystyle\int \frac{dv}{v\left[mf(v)+n\right]} - \ln|x|$, where $v = x^n y^m$.

2°. General solution: $w = \Phi(\Xi)$, where $\Phi(\Xi)$ 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.

