



First-Order Partial Differential Equations > Nonlinear Equations > Section 3.3

$$16. \quad F\left(\frac{\partial w}{\partial x} + ay, \frac{\partial w}{\partial y} + ax\right) = 0.$$

Complete integral:

$$w = -axy + C_1x + C_2y + C_3,$$

where  $C_1$  and  $C_3$  are arbitrary constants and the constant  $C_2$  is related to  $C_1$  by  $F(C_1, C_2) = 0$ .

### Reference

**Polyanin, A. D., Zaitsev, V. F., and Moussiaux, A.,** *Handbook of First Order Partial Differential Equations*, Taylor & Francis, London, 2002.