



15.  $y'_x = f(x)y^2 + g(x)y - a^2f(x) - ag(x).$

**Riccati equation, special case 9.**

Particular solution:  $y_0 = a.$

The general solution can be written as:

$$y = a + \Phi(x) \left[ C - \int f(x)\Phi(x) dx \right]^{-1}, \quad \text{where } \Phi(x) = \exp \left\{ \int [2af(x) + g(x)] dx \right\},$$

$C$  is an arbitrary constant.

### Reference

**Polyanin, A. D. and Zaitsev, V. F.,** *Handbook of Exact Solutions for Ordinary Differential Equations, 2nd Edition*, Chapman & Hall/CRC, Boca Raton, 2003.