



Exact Solutions > Ordinary Differential Equations > First-Order Ordinary Differential Equations > Riccati Equation, Special Case 2

8. $y'_x = f(x)y^2 + ay - ab - b^2f(x)$.

Riccati equation, special case 2.

Particular solution: $y_0 = b$.

The general solution can be written as:

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

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.

Riccati Equation, Special Case 2

Copyright © 2004 Andrei D. Polyanin

<http://eqworld.ipmnet.ru/en/solutions/ode/ode0108.pdf>