



Systems of Ordinary Differential Equations > Nonlinear Systems of Two Equations

3. $x'_t = F(x, y), \quad y'_t = G(x, y).$

Autonomous system of general form.

Let

$$y = y(x, C_1),$$

where C_1 is an arbitrary constant, is the general solution of the first-order equation

$$F(x, y)y'_x = G(x, y).$$

Then the general solution the original system of equations has the form

$$\int \frac{dx}{F(x, y(x, C_1))} = t + C_2.$$