

# Exercicio 02

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## 1 Algebraic solution

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$
$$ax^2 + bx + c = 0$$

## 2 Generalized Lotka–Volterra equation

$$\frac{dx_i}{dt} = x_i f_i(\mathbf{x})$$
$$\mathbf{f} = \mathbf{r} + A\mathbf{x}$$
$$\mathbf{x} = -A^{-1}\mathbf{r}$$