5.16 Numerical solutions to differential equations

Checklist

What you should know

By the end of this subtopic you should be able to:

- approximate the solution to $y(x)$ if $y(x_0) = y_0$ is given and y is the solution of the first-order differential equation $y' = F(x, y)$ through the iterative process of Euler's method
- model and solve coupled systems of the form $\frac{\mathrm{d}x}{\mathrm{d}t} = f_1(x, y, t)$ and $\frac{\mathrm{d}y}{\mathrm{d}t} = f_2(x, y, t)$.