

Euler

$$\begin{cases} y' = -y + x + 2 \\ y(0) = 2 \Rightarrow y_0 = 2 \end{cases} \quad y' = f = -y + x + 2$$
$$0 \leq x \leq 0,3 \Rightarrow h = 0,1$$

$$f_0 = f(x_0, y_0) = -y_0 + x_0 + 2 \Rightarrow f(0,2) = -2 + 0 + 2 = 0$$

$$x_1 = 0,1$$

$$y_1 = y_0 + h f_0 = 2 + (0,1)(0) = 2,0000$$

$$f_1 = f(x_1, y_1) = -y_1 + x_1 + 2 \Rightarrow f(0,1; 2,0000) = -2,0000 + 0,1 + 2 = 0,1000$$

$$x_2 = 0,2$$

$$y_2 = y_1 + h f_1 = 2 + (0,1)(0,1000) = 2,0100$$

$$f_2 = f(x_2, y_2) = -y_2 + x_2 + 2 \Rightarrow f(0,2; 2,0100) = -2,0100 + 0,2 + 2 = 0,1900$$

$$x_3 = 0,3$$

$$y_3 = y_2 + h f_2 = 2,01 + (0,1)(0,1900) = 2,0290$$