

TASK 8:

RUNGE KUTTA 4TH ORDER

FORMULA:

$$\begin{aligned}K_1 &= hf(x_n, y_n) \\K_2 &= hf(x_n + \frac{h}{2}, y_n + \frac{k_1}{2}) \\K_3 &= hf(x_n + \frac{h}{2}, y_n + \frac{k_2}{2}) \\K_4 &= hf(x_n + h, y_n + k_3) \\y_{n+1} &= y_n + k_1/6 + k_2/3 + k_3/3 + k_4/6 + O(h^5)\end{aligned}$$

$\frac{h^5}{6}$

ERROR
WHEN
NEGLECTED