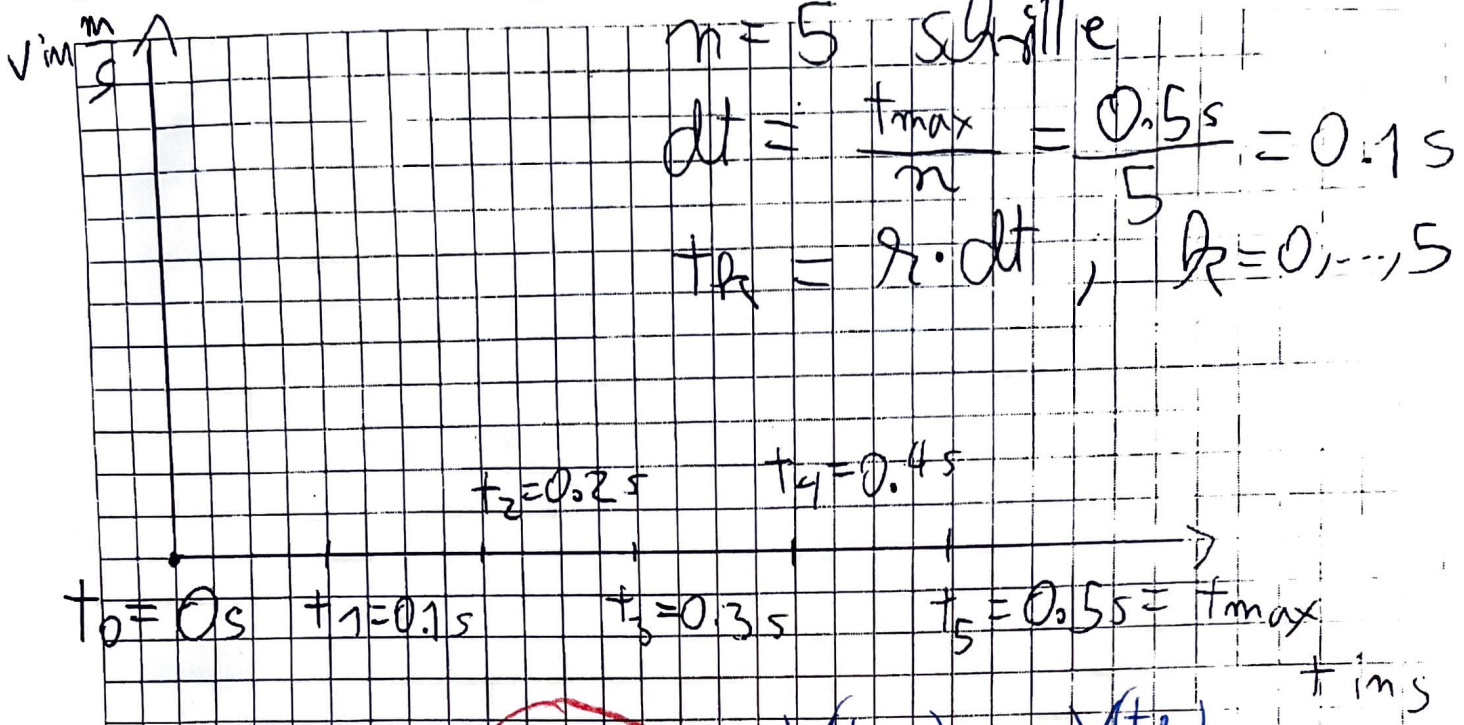
Diskretisierung



$n = 5$ Schritte

$$dt = \frac{t_{max}}{n} = \frac{0.5s}{5} = 0.1s$$

$$t_k = k \cdot dt \,, \quad k = 0, \dots, 5$$

$$\dot{v}(t_k) = \lim_{\Delta t \to 0} \frac{v(t_{k+1}) - v(t_k)}{\Delta t}$$

$$\approx \frac{v(t_{k+1}) - v(t_k)}{\Delta t}$$

$$\boxed{v_k = v(t_k)} \Rightarrow \dot{v}_k \approx \frac{v_{k+1} - v_k}{\Delta t}$$

Einsetzen:

$$\frac{v_{k+1} - v_k}{\Delta t} = -g$$

$\Rightarrow$

$$\boxed{v_{k+1} = -\Delta t \cdot g + v_k \qquad k = 0, 1, \dots, 4}$$