Mai 2022

a030

$$n\bar{x}_n = \sum_{i=1}^{n} x_i$$

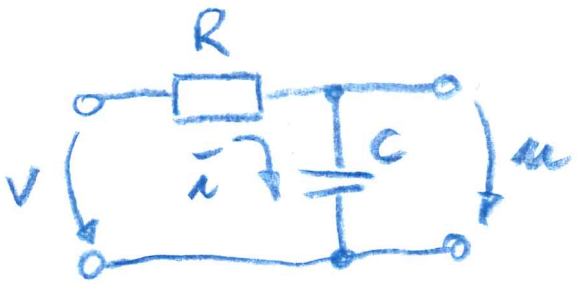
$$(n+1)\bar{x}_{n+1} = \sum_{i=1}^{n+1} x_i = \sum_{i=1}^{n} x_i + x_{n+1}$$

$$= n\bar{x}_n + x_{n+1}$$

$$\bar{x}_{n+1} = \frac{n}{n+1}\bar{x}_n + \frac{1}{n+1}x_{n+1}$$

arithmet. Mittelwert

$\Sigma = 1$



$$i = C\dot{u}$$

$$v = Ri + u$$

$$RC\dot{u} + u = v \quad \rightarrow \quad T\dot{x} + x = y$$

PT1-glied

$$\frac{1}{\Delta t}^{\lambda}\,\Delta x + x = y \qquad \lambda\Delta x + x = y$$

a) $\lambda(x_{i+1} - x_i) + x_{i+1} = y_{i+1}$ b) $\lambda(x_{i+1} - x_i) + x_i = y_{i+1}$

$$x_{i+1} = \frac{\lambda}{\lambda+1}x_i + \frac{1}{\lambda+1}y_{i+1} \qquad x_{i+1} = \frac{\lambda-1}{\lambda}x_i + \frac{1}{\lambda}y_{i+1}$$

diskret PT1-glied