

②

wort-faktor - p & wort-faktor - p

6

Vergleichen

$$\frac{|u_{k+1}|}{|u_k|^p} = \frac{|u_{k-1}|^3 |u_{k-2}|}{|u_{k-1}|^{2p} |u_{k-2}|^p}, \quad p \in [1, \infty)$$

$$\limsup_{k \rightarrow \infty} \frac{|u_{k-1}|^3 |u_{k-2}|}{|u_{k-1}|^{2p} |u_{k-2}|^p} = \limsup_{k \rightarrow \infty} |u_{k-1}|^{3-2p} |u_{k-2}|^{1-p}$$

$$\left. \begin{aligned} 3-2p > 0, \quad 3 > 2p, \quad p < \frac{3}{2} &\Rightarrow \left. \begin{aligned} |u_{k-1}|^{3-2p} &\rightarrow 0 \\ |u_{k-2}|^{1-p} &\rightarrow \infty \end{aligned} \right\} \\ 3-2p < 0, \quad p > \frac{3}{2} &\Rightarrow \left. \begin{aligned} |u_{k-1}|^{3-2p} &\rightarrow \infty \\ |u_{k-2}|^{1-p} &\rightarrow \infty \end{aligned} \right\} \end{aligned}$$

$$3=2p \Rightarrow |u_{k-1}|^0 |u_{k-2}|^{-\frac{1}{2}} \rightarrow 1 \cdot \infty$$

$$\begin{matrix} \downarrow & \downarrow \\ 1 & \infty \end{matrix}$$

$$\Rightarrow Q_q \text{ nur } \leq \frac{3}{2}$$

(mit. Restwert > Q-idea)