

Also' Induktion: univ. $0 \leq n \in \mathbb{N} \Rightarrow$

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$$5^0 \leq 5^n \Rightarrow 4 \cdot 5^0 \leq 4 \cdot 5^n \Rightarrow 4 + 6 \leq 4 \cdot 5^n + 6$$

$$\frac{1}{4 \cdot 5^n + 6} \leq \frac{1}{10} \Rightarrow \frac{5}{2} - \frac{13}{4 \cdot 5^n + 6} \geq \frac{5}{2} - \frac{13}{10} = \frac{12}{10} = \frac{6}{5}$$

Teilm 4 $\forall n \in \mathbb{N}$ - i.e.: $\frac{5}{2} - \frac{13}{4 \cdot 5^n + 6} \geq \frac{5}{2} - \frac{13}{4 \cdot 5^0 + 6} = \frac{6}{5}$

$$\frac{1}{2} \left[\min A = \frac{6}{5} \right] \Rightarrow \exists \left[\inf A = \min A = \frac{6}{5} \right]; \quad \begin{matrix} \cap \\ A \\ = \end{matrix}$$

Teilm 4 a Induktion $\frac{6}{5} \leq a < \frac{5}{2} \quad \forall a \in A$ - i.e.

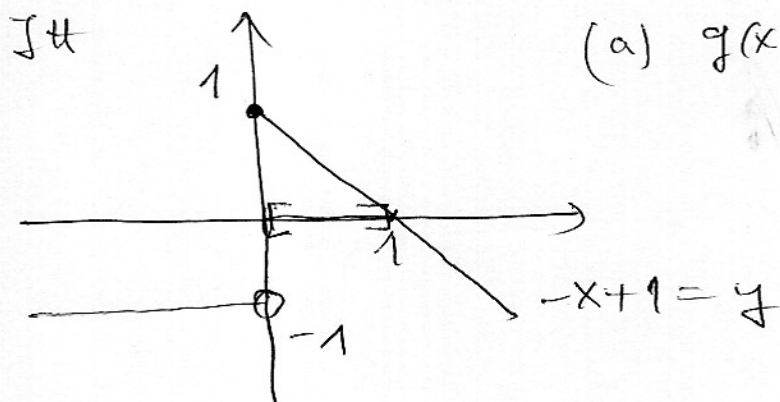
③ $f(x) := \begin{cases} x+1, & \text{für } x \geq 0 \\ -2x, & \text{für } x < 0 \end{cases} \quad g(x) := \begin{cases} -x+1, & x \geq 0 \\ -1, & x < 0 \end{cases}$

$f \circ g = ?$

$$D_{f \circ g} = \{ x \in D_g \mid g(x) \in D_f \} = \{ x \in \mathbb{R} \mid g(x) \in \mathbb{R} \} =$$

$$= \mathbb{R};$$

$$(f \circ g)(x) = f(g(x)) = \begin{cases} g(x)+1, & \text{für } g(x) \geq 0 \dots (a) \\ -2 \cdot g(x), & \text{für } g(x) < 0 \dots (b) \end{cases}$$



$$(a) \quad g(x) \geq 0 \Leftrightarrow \begin{cases} -x+1 \geq 0 \\ \text{oder } x \geq 0 \end{cases}$$

$$\text{oder } \underline{0 \leq x \leq 1}$$

in it

$$(f \circ g)(x) = g(x) + 1 = -x + 1 + 1 = \underline{2 - x}$$