

TPS $S = \{ a(b(x)) \rightarrow b(a(x)) \}$

in cyp: axiom so: $a(b(x)) = b(a(x))$

Zu zeigen: $a(a(b(x))) = b(a(a(x)))$

in cyp: Lemma aab: $a(a(b(x))) = b(a(a(x)))$

Beweis:

$$\begin{array}{c} a \\ | \\ a \\ | \\ b \\ | \\ X \end{array} \longrightarrow \begin{array}{c} a \\ | \\ b \\ | \\ X \end{array}$$

$$\begin{array}{c} a \\ | \\ b \\ | \\ X \end{array} \longrightarrow \begin{array}{c} a \\ | \\ a \\ | \\ X \end{array}$$

in cyp:

Proof by rewriting

$a(a(b(x)))$

(by so) $= a(b(a(x)))$

(by so) $= b(a(a(x)))$

QED