

# t6\_ltlaxio1

(TMKVQ4BF1jtgTJ1WSaVXF<sub>n</sub>9XQ3ZiXgcXwia)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_ltlaxio1 : \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $k11\_ltlaxio1 : \iota \Rightarrow \iota$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_ltlaxio1 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_ltlaxio1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_hilbert1 : \iota$  be given. Let  $k1\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k5\_numbers) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 \\
& k5\_numbers (k1\_zfmisc\_1 k10\_ltlaxio1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 k5\_numbers (k1\_zfmisc\_1 k10\_ltlaxio1)))))) \Rightarrow (( \\
& k3\_funct\_2 (k2\_zfmisc\_1 k5\_numbers k1\_hilbert1) k6\_margrel1 \\
& (k11\_ltlaxio1 X2) (k1\_domain\_1 k5\_numbers k1\_hilbert1 X1 (k1\_ltlaxio1 \\
& X0)) = np\_1) \Leftrightarrow (k3\_funct\_2 (k2\_zfmisc\_1 k5\_numbers k1\_hilbert1) \\
& k6\_margrel1 (k11\_ltlaxio1 X2) (k1\_domain\_1 k5\_numbers k1\_hilbert1 \\
& X1 X0) = k6\_numbers))))))
\end{aligned} \tag{1}$$

Assume the following.

$$m1\_subset\_1 k2\_hilbert1 k1\_hilbert1 \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers (k1\_zfmisc\_1 \\
& k10\_ltlaxio1)) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& (k1\_zfmisc\_1 k10\_ltlaxio1)))))) \Rightarrow ((v1\_funct\_1 (k11\_ltlaxio1 \\
& X0) \wedge ((v1\_funct\_2 (k11\_ltlaxio1 X0) (k2\_zfmisc\_1 k5\_numbers \\
& k1\_hilbert1) k6\_margrel1) \wedge (m1\_subset\_1 (k11\_ltlaxio1 X0) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_hilbert1) k6\_margrel1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$k3\_ltlaxio1 = k1\_ltlaxio1 \ k2\_hilbert1 \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ k5\_numbers \ (k1\_zfmisc\_1 \\
& k10\_ltlaxio1)) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& (k1\_zfmisc\_1 \ k10\_ltlaxio1)))))) \Rightarrow (\forall X1.((v1\_funct\_1 \ X1) \wedge \\
& ((v1\_funct\_2 \ X1 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \ k6\_margrel1) \wedge \\
& (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& k1\_hilbert1) \ k6\_margrel1)))))) \Rightarrow ((X1 = k11\_ltlaxio1 \ X0) \Leftrightarrow (\forall X2. \\
& (m1\_subset\_1 \ X2 \ k5\_numbers) \Rightarrow ((k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \\
& X2 \ k2\_hilbert1) = k6\_numbers) \wedge ((\forall X3.(m1\_subset\_1 \ X3 \ k5\_numbers) \Rightarrow \\
& ((k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \ k6\_margrel1 \\
& X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \ X2 \ (k1\_hilbert2 \ X3)) = np\_1) \Leftrightarrow \\
& (k1\_hilbert2 \ X3 \in k3\_funct\_2 \ k5\_numbers \ (k1\_zfmisc\_1 \ k10\_ltlaxio1) \\
& X0 \ X2))) \wedge (\forall X3.(m1\_subset\_1 \ X3 \ k1\_hilbert1) \Rightarrow (\forall X4. \\
& (m1\_subset\_1 \ X4 \ k1\_hilbert1) \Rightarrow ((k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \\
& X2 \ (k3\_hilbert1 \ X3 \ X4)) = k6\_xboolean \ (k3\_funct\_2 \ (k2\_zfmisc\_1 \\
& k5\_numbers \ k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \\
& k1\_hilbert1 \ X2 \ X3)) \ (k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \\
& k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \ X2 \ X4))) \wedge ( \\
& (\neg(k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \ k6\_margrel1 \\
& X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \ X2 \ (k4\_hilbert1 \ X3 \ X4)) = \\
& np\_1) \wedge (\forall X5.(m1\_subset\_1 \ X5 \ k5\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 \\
& X5 \ k6\_numbers) \wedge ((k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \\
& k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \ (k2\_nat\_1 \\
& X2 \ X5) \ X4) = np\_1) \wedge (\forall X6.(m1\_subset\_1 \ X6 \ k5\_numbers) \Rightarrow (( \\
& r1\_xxreal\_0 \ np\_1 \ X6) \Rightarrow ((r1\_xxreal\_0 \ X5 \ X6) \vee (k3\_funct\_2 \ (k2\_zfmisc\_1 \\
& k5\_numbers \ k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \\
& k1\_hilbert1 \ (k2\_nat\_1 \ X2 \ X6) \ X3) = np\_1)))))) \wedge ((\exists X5. \\
& (m1\_subset\_1 \ X5 \ k5\_numbers) \wedge ((\neg r1\_xxreal\_0 \ X5 \ k6\_numbers) \wedge ( \\
& (k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_hilbert1) \ k6\_margrel1 \\
& X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \ (k2\_nat\_1 \ X2 \ X5) \ X4) = np\_1) \wedge \\
& (\forall X6.(m1\_subset\_1 \ X6 \ k5\_numbers) \Rightarrow ((r1\_xxreal\_0 \ np\_1 \\
& X6) \Rightarrow ((r1\_xxreal\_0 \ X5 \ X6) \vee (k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \\
& (k2\_nat\_1 \ X2 \ X6) \ X3) = np\_1)))))) \Rightarrow (k3\_funct\_2 \ (k2\_zfmisc\_1 \ k5\_numbers \\
& k1\_hilbert1) \ k6\_margrel1 \ X1 \ (k1\_domain\_1 \ k5\_numbers \ k1\_hilbert1 \\
& X2 \ (k4\_hilbert1 \ X3 \ X4)) = np\_1)))))))))
\end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.((v1\_funct\_1 \\ & X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (k1\_zfmisc\_1 k10\_ltlaxio1)) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k1\_zfmisc\_1 \\ & k10\_ltlaxio1)))))) \Rightarrow (k3\_funct\_2 (k2\_zfmisc\_1 k5\_numbers k1\_hilbert1) \\ & k6\_margrel1 (k11\_ltlaxio1 X1) (k1\_domain\_1 k5\_numbers k1\_hilbert1 \\ & X0 k3\_ltlaxio1) = np\_1)) \end{aligned}$$