

# t56\_ltlaxiol

(TMRx59x7CeHuqR6wyGfsrKpjz4erjU8wKSp)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r8\_ltlaxiol : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_hilbert1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r7\_ltlaxiol : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_ltlaxiol : \iota$  be given. Let  $r5\_ltlaxiol : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r6\_ltlaxiol : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_ltlaxiol : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v2\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v3\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v4\_hilbert1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (2)$$

Assume the following.

$$v5\_hilbert1 k1\_hilbert1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (m1\_subset\_1 (k6\_domain\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (m1\_subset\_1 (k4\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow ((r8\_ltlaxio1 X0 X1) \Leftrightarrow (\exists X2. \\ (m2\_finseq\_1 X2 k1\_hilbert1) \wedge ((k1\_funct\_1 X2 (k3\_finseq\_1 X2) = \\ X1) \wedge ((r1\_xxreal\_0 np\_1 (k3\_finseq\_1 X2)) \wedge (\forall X3.(v7\_ordinal1 \\ X3) \Rightarrow (((r1\_xxreal\_0 np\_1 X3) \wedge (r1\_xxreal\_0 X3 (k3\_finseq\_1 X2))) \Rightarrow \\ (r7\_ltlaxio1 X3 X2 X0)))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m2\_finseq\_1 X1 k1\_hilbert1) \Rightarrow \\ (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow ((r7\_ltlaxio1 \\ X0 X1 X2) \Leftrightarrow (\neg(\neg k1\_funct\_1 X1 X0 \in k13\_ltlaxio1) \wedge ((\neg k1\_funct\_1 X1 \\ X0 \in X2) \wedge ((\forall X3.(v7\_ordinal1 X3) \Rightarrow (\forall X4.(v7\_ordinal1 \\ X4) \Rightarrow (\neg(r1\_xxreal\_0 np\_1 X3) \wedge (\neg r1\_xxreal\_0 X0 X3) \wedge ((r1\_xxreal\_0 \\ np\_1 X4) \wedge ((\neg r1\_xxreal\_0 X0 X4) \wedge ((r5\_ltlaxio1 (k7\_partfun1 k1\_hilbert1 \\ X1 X3) (k7\_partfun1 k1\_hilbert1 X1 X4) (k7\_partfun1 k1\_hilbert1 \\ X1 X0)) \vee (r6\_ltlaxio1 (k7\_partfun1 k1\_hilbert1 X1 X3) (k7\_partfun1 \\ k1\_hilbert1 X1 X4) (k7\_partfun1 k1\_hilbert1 X1 X0)))))))))) \wedge (\forall X3. \\ (v7\_ordinal1 X3) \Rightarrow (\neg(r1\_xxreal\_0 np\_1 X3) \wedge ((\neg r1\_xxreal\_0 X0 \\ X3) \wedge (r4\_ltlaxio1 (k7\_partfun1 k1\_hilbert1 X1 X3) (k7\_partfun1 \\ k1\_hilbert1 X1 X0)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(v5\_hilbert1 X0) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_hilbert1 \\ X0) \wedge ((v2\_hilbert1 X0) \wedge ((v3\_hilbert1 X0) \wedge (v4\_hilbert1 X0)))))) \quad (9)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow \\ ((r8\_ltlaxio1 X2 X0) \Rightarrow (r8\_ltlaxio1 (k4\_subset\_1 k1\_hilbert1 X2 \\ (k6\_domain\_1 k1\_hilbert1 X1)) X0)))) \end{aligned}$$