

t48\_ltlaxio1 (TM-  
LyQAxL3MPCkm9pG6yxzzZxD6vvQ8sxJST)

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  $r8\_ltlaxio1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ltlaxio1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_ltlaxio1 : \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow (((r8\_ltlaxio1 X3 \\ & (k3\_hilbert1 X0 X1)) \wedge (r8\_ltlaxio1 X3 (k3\_hilbert1 X1 X2))) \Rightarrow (r8\_ltlaxio1 \\ & X3 (k3\_hilbert1 X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow ((r8\_ltlaxio1 X3 \\ & (k3\_hilbert1 X0 (k4\_ltlaxio1 X1 X2))) \Rightarrow ((r8\_ltlaxio1 X3 (k3\_hilbert1 \\ & X0 X1)) \wedge (r8\_ltlaxio1 X3 (k3\_hilbert1 X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow \\ & (((r8\_ltlaxio1 X2 X0) \wedge (r8\_ltlaxio1 X2 (k3\_hilbert1 X0 X1))) \Rightarrow ( \\ & r8\_ltlaxio1 X2 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow (((X0 \in k13\_ltlaxio1) \vee (X0 \in X1)) \Rightarrow \\ & (r8\_ltlaxio1 X1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (k3\_hilbert1 \\ & (k3\_hilbert1 X0 (k3\_hilbert1 X1 X2)) (k3\_hilbert1 (k3\_hilbert1 \\ & X0 X1) (k3\_hilbert1 X0 X2)) \in k13\_ltlaxio1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (k3\_hilbert1 X0 (k3\_hilbert1 X1 X0) \in k13\_ltlaxio1)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k1\_hilbert1) \wedge (m1\_subset\_1 \\ & X1 k1\_hilbert1)) \Rightarrow (m1\_subset\_1 (k4\_ltlaxio1 X0 X1) k1\_hilbert1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k1\_hilbert1) \wedge (m1\_subset\_1 \\ & X1 k1\_hilbert1)) \Rightarrow (m1\_subset\_1 (k3\_hilbert1 X0 X1) k1\_hilbert1) \end{aligned} \quad (9)$$

Assume the following.

$$m1\_subset\_1 k13\_ltlaxio1 (k1\_zfmisc\_1 k1\_hilbert1) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow ((r8\_ltlaxio1 X3 \\ & (k3\_hilbert1 X0 (k3\_hilbert1 X1 X2))) \Rightarrow (r8\_ltlaxio1 X3 (k3\_hilbert1 \\ & (k4\_ltlaxio1 X0 X1) X2)))))) \end{aligned}$$