

t55\_ltlaxio1 (TMaf-  
SeeprN4g98WiPNmzxcFGhzwm9qLhWWo)

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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  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r8\_ltlaxio1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k6\_ltlaxio1 : \iota \Rightarrow \iota$  be given. Let  $k13\_ltlaxio1 : \iota$  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  $v1\_hilbert1 : \iota \Rightarrow o$  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.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow ((r8\_ltlaxio1 X1 X0) \Rightarrow (r8\_ltlaxio1 X1 (k6\_ltlaxio1 X0)))) \quad (1)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow (((r8\_ltlaxio1 X2 X0) \wedge (r8\_ltlaxio1 X2 (k3\_hilbert1 X0 X1))) \Rightarrow (r8\_ltlaxio1 X2 X1)))) \quad (2)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow (((X0 \in k13\_ltlaxio1) \vee (X0 \in X1)) \Rightarrow (r8\_ltlaxio1 X1 X0))) \quad (3)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0))) \Rightarrow (k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (5)$$

Assume the following.

$$v5\_hilbert1 \ k1\_hilbert1 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 \ X0)\wedge(m1\_subset\_1 \ X1 \ X0))\Rightarrow (m1\_subset\_1 \ (k6\_domain\_1 \ X0 \ X1) \ (k1\_zfmisc\_1 \ X0)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0))\wedge(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ X0)))\Rightarrow(m1\_subset\_1 \ (k4\_subset\_1 \ X0 \ X1 \ X2) \ (k1\_zfmisc\_1 \ X0)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \ X0 \ k1\_hilbert1)\wedge(m1\_subset\_1 \ X1 \ k1\_hilbert1))\Rightarrow(m1\_subset\_1 \ (k3\_hilbert1 \ X0 \ X1) \ k1\_hilbert1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 \ X0 \ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\vee(X3 \in X1))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski \ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow (X2 = X0)) \tag{11}$$

Assume the following.

$$\forall X0.(v5\_hilbert1 \ X0)\Rightarrow((\neg v1\_xboole\_0 \ X0)\wedge((v1\_hilbert1 \ X0)\wedge((v2\_hilbert1 \ X0)\wedge((v3\_hilbert1 \ X0)\wedge(v4\_hilbert1 \ X0)))))) \tag{12}$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 \ X0 \ k1\_hilbert1)\Rightarrow(\forall X1.(m1\_subset\_1 \ X1 \ k1\_hilbert1)\Rightarrow(\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ k1\_hilbert1))\Rightarrow ((k3\_hilbert1 \ X0 \ X1 \in X2)\Rightarrow(r8\_ltlaxio1 \ (k4\_subset\_1 \ k1\_hilbert1 \ X2 \ (k6\_domain\_1 \ k1\_hilbert1 \ X0) \ (k6\_ltlaxio1 \ X1))))))$$