

t49_tops_3

(TMYhEsFekPdb26wAsQDLvqjVQcq2zqq4HLc)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_tops_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_xboole_0 (k4_xboole_0 X0 X1) X1 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Rightarrow (X1 = k2_xboole_0 X0 (k4_xboole_0 X1 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow ((v1_tops_3 X1 X0) \Leftrightarrow (\exists X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (u1_struct_0 X0)))) \wedge ((r1_tarski X2 X1) \wedge ((v3_pre_topc X2 X0) \wedge (\\ v1_tops_1 X2 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow ((v1_tops_3 X1 X0) \Leftrightarrow (v3_tops_1 (k3_subset_1 (u1_struct_0 \\ X0) X1) X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow (((v3_pre_topc X1 X0) \wedge (v1_tops_1 X1 X0)) \Rightarrow (v1_tops_3 X1 \\ X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1_tarski X0 X1) \Rightarrow (r1_tarski \\ (k4_xboole_0 X0 X2) (k4_xboole_0 X1 X2)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow (((v3_tops_1 X1 X0) \wedge (r1_tarski X2 X1)) \Rightarrow (v3_tops_1 X2 X0)))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(r1_xboole_0 X0 X1) \Rightarrow (r1_xboole_0 X1 X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \Rightarrow (k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (k4_subset_1 X0 X1 X2 = \\ k2_xboole_0 X1 X2) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \Rightarrow (m1_subset_1 (k7_subset_1 X0 X1 X2) (k1_zfmisc_1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (m1_subset_1 \\ (k3_subset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (k3_subset_1 \\ X0 X1 = k4_xboole_0 X0 X1) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\neg(v1_tops_3 X1 X0) \wedge (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \Rightarrow (\neg(v3_pre_topc X2 X0) \wedge ((v1_tops_1 X2 X0) \wedge \\ & ((v3_tops_1 X3 X0) \wedge ((k4_subset_1 (u1_struct_0 X0) X2 X3 = X1) \wedge \\ & r1_xboole_0 X2 X3)))))))))) \end{aligned}$$