

l74_tops_3

(TMPgxN1b7h3qouempHpypGGf9VtiF5XBoYK)

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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 $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ 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 $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
 & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\
 & \forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\\
 & \forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\\
 & \forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow (\\
 & ((v3_pre_topc X2 X0) \wedge ((r1_tarski X2 (u1_struct_0 X1)) \wedge ((r1_tarski \\
 & X3 X2) \wedge (X3 = X4)))) \Rightarrow (k1_tops_1 X0 X3 = k1_tops_1 X1 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
 & X0))) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\
 & X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3.(m1_subset_1 \\
 & X3 (k1_zfmisc_1 (u1_struct_0 X1))) \Rightarrow ((r1_tarski X3 X2) \Rightarrow (r1_tarski \\
 & (k2_pre_topc X1 X3) (k2_pre_topc X0 X2))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(r1_tarski X0 k1_xboole_0) \Rightarrow (X0 = k1_xboole_0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((r1_tarski\ X1\ X2) \Rightarrow (r1_tarski\ (k1_tops_1 \\ X0\ X1)\ (k1_tops_1\ X0\ X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski\ X0\ X0 \quad (7)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow (l1_pre_topc\ X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v3_tops_1\ X1\ X0) \Leftrightarrow (k1_tops_1\ X0\ (k2_pre_topc \\ X0\ X1) = k1_xboole_0))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \Rightarrow (\\ \forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\\ \forall X3.(m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\\ \forall X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X1))) \Rightarrow (\\ ((v3_pre_topc\ X2\ X0) \wedge ((X2 = u1_struct_0\ X1) \wedge ((X3 = X4) \wedge (v3_tops_1 \\ X3\ X0)))) \Rightarrow (v3_tops_1\ X4\ X1)))))) \end{aligned}$$