

t19_tops_3
(TMGdo9GjdjoNq8gbvppteyp4EdmQ9GZGiky)

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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 $v1_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (((v1_tops_1\ X1\ X0) \wedge (r1_tarski\ X1\ X2)) \Rightarrow (v1_tops_1 \\ X2\ X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (((v4_pre_topc\ X1\ X0) \Rightarrow (k2_pre_topc\ X0\ X1 = \\ X1)) \wedge (((v2_pre_topc\ X0) \wedge (k2_pre_topc\ X0\ X1 = X1)) \Rightarrow (v4_pre_topc \\ X1\ X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (r1_tarski\ X1\ (k2_pre_topc\ X0\ X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \wedge \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0)))) \Rightarrow (v4_pre_topc \\ (k2_pre_topc\ X0\ X1)\ X0) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((l1_pre_topc\ X0) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \Rightarrow (m1_subset_1\ (k2_pre_topc\ X0\ X1)\ (k1_zfmisc_1 \\ (u1_struct_0\ X0)))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow ((v1_tops_1\ X1\ X0) \Leftrightarrow (k2_pre_topc\ X0\ X1 = u1_struct_0 \\ X0))) \end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0 \\ X0))) \Rightarrow ((v1_tops_1\ X1\ X0) \Leftrightarrow (\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ X0))) \Rightarrow (((r1_tarski\ X1\ X2) \wedge (v4_pre_topc\ X2\ X0)) \Rightarrow \\ (X2 = u1_struct_0\ X0)))))) \end{aligned}$$