

t4_goboard6 (TM-
Fqkn9KaFn5BMvHkTSskRt3fGuCqDLDjSF)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_metric_1 : \iota \Rightarrow o$ be given. Let $v7_metric_1 : \iota \Rightarrow o$ be given. Let $v8_metric_1 : \iota \Rightarrow o$ be given. Let $v9_metric_1 : \iota \Rightarrow o$ be given. Let $l1_metric_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_pcomps_1 : \iota \Rightarrow \iota$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v3_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $k2_pcomps_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1. \\ & \forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\\ & (X1 \in k1_tops_1 X0 X2) \Leftrightarrow (\exists X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \wedge ((v3_pre_topc X3 X0) \wedge ((r1_tarski X3 X2) \wedge (\\ & X1 \in X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge (l1_metric_1 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((\neg r1_xreal_0 X2 k6_numbers) \Rightarrow (X1 \in k9_metric_1 \\ & X0 X1 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (r1_tarski (k1_tops_1 X0 X1) X1)) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\
& X0)))) \Rightarrow ((v3_pre_topc X1 (k3_pcomps_1 X0)) \Leftrightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0)) \Rightarrow (\neg(X2 \in X1) \wedge (\forall X3.(v1_xreal_0 X3) \Rightarrow \\
& (\neg(\neg r1_xreal_0 X3 k6_numbers) \wedge (r1_tarski (k9_metric_1 X0 X2 \\
& X3) X1))))))))) \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v6_metric_1 X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 \\
& X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))) \Rightarrow (\forall X2. \\
& (v1_xreal_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& ((X1 = k9_metric_1 X0 X3 X2) \Rightarrow (v3_pre_topc X1 (k3_pcomps_1 X0)))))) \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 \\
& X0))) \Rightarrow (\forall X2. \forall X3.(g1_pre_topc X0 X1 = g1_pre_topc \\
& X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1.(((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (v3_pre_topc \\
& (k1_tops_1 X0 X1) X0) \tag{8}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_metric_1 X0) \Rightarrow ((v1_pre_topc (k3_pcomps_1 X0)) \wedge \\
& (v2_pre_topc (k3_pcomps_1 X0))) \tag{9}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_pre_topc X0) \Rightarrow (m1_subset_1 (u1_pre_topc X0) (k1_zfmisc_1 \\
& (k1_zfmisc_1 (u1_struct_0 X0)))) \tag{10}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2.((l1_metric_1 X0) \wedge ((m1_subset_1 \\
& X1 (u1_struct_0 X0)) \wedge (v1_xreal_0 X2))) \Rightarrow (m1_subset_1 (k9_metric_1 \\
& X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \tag{11}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1_metric_1 X0) \Rightarrow (l1_pre_topc (k3_pcomps_1 X0)) \tag{12}
\end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((l1_pre_topc\ X0)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k1_tops_1\ X0\ X1)\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \quad (13)$$

Assume the following.

$$\forall X0.(l1_metric_1\ X0)\Rightarrow(k3_pcomps_1\ X0 = g1_pre_topc\ (u1_struct_0\ X0)\ (k2_pcomps_1\ X0)) \quad (14)$$

Assume the following.

$$\forall X0.(l1_pre_topc\ X0)\Rightarrow((v1_pre_topc\ X0)\Rightarrow(X0 = g1_pre_topc\ (u1_struct_0\ X0)\ (u1_pre_topc\ X0))) \quad (15)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v6_metric_1\ X0)\wedge((v7_metric_1\ X0)\wedge((v8_metric_1\ X0)\wedge((v9_metric_1\ X0)\wedge(l1_metric_1\ X0))))))\Rightarrow \\ & (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ (k3_pcomps_1\ X0))))\Rightarrow((X1 \in k1_tops_1\ (k3_pcomps_1\ X0)\ X2)\Leftrightarrow(\exists X3.(v1_xreal_0\ X3)\wedge((\neg r1_xxreal_0\ X3\ k6_numbers)\wedge(r1_tarski\ (k9_metric_1\ X0\ X1\ X3)\ X2)))))) \end{aligned}$$