

t17_fintopo6
(TMLenM3wZ5TLeQDHtixZna2jBJRfoKjLQ64)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $v1_fin_topo : \iota \Rightarrow o$ be given. Let $v4_fin_topo : \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_fintopo4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((v1_fin_topo \\
& X0) \wedge (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\
& (\neg(X1 = k4_subset_1 (u1_struct_0 X0) X2 X3) \wedge ((r1_xboole_0 X2 X3) \wedge \\
& ((r1_fintopo4 X0 X2 X3) \wedge ((X2 \neq k1_struct_0 X0) \wedge (X3 \neq k1_struct_0 \\
& X0)))))))))) \Rightarrow (v4_fin_topo X1 X0))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((v4_fin_topo \\
& X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \Rightarrow (\neg(X1 = k4_subset_1 (u1_struct_0 X0) X2 X3) \wedge ((r1_xboole_0 \\
& X2 X3) \wedge ((r1_fintopo4 X0 X2 X3) \wedge ((X2 \neq k1_struct_0 X0) \wedge (X3 \neq k1_struct_0 \\
& X0))))))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 \\ & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((v1_fin_topo X0) \Rightarrow ((v4_fin_topo X1 X0) \Leftrightarrow \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (\neg(X1 = k4_subset_1 (u1_struct_0 X0) X2 X3) \wedge ((r1_xboole_0 X2 X3) \wedge \\ & ((r1_fintopo4 X0 X2 X3) \wedge ((X2 \neq k1_struct_0 X0) \wedge (X3 \neq k1_struct_0 \\ & X0)))))))))) \end{aligned}$$