

t5_fintopo6
(TMFy8Uhwis4DcsnBzTKYnc3YaXBqJxSFNwC)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_fintopo6 : \iota \Rightarrow o$ 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 $k2_struct_0 : \iota \Rightarrow \iota$ 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. Let $v4_fin_topo : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 X0))) \Rightarrow (m1_subset_1 (k4_subset_1 \\ & X0 X1 X2) (k1_zfmisc_1 X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v1_fintopo6 \\ & X0) \Leftrightarrow (v4_fin_topo (k2_struct_0 X0) X0)) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v1_fintopo6 \\ & X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (\neg (k2_struct_0 X0 = k4_subset_1 (u1_struct_0 X0) X1 X2) \wedge ((r1_xboole_0 \\ & X1 X2) \wedge ((r1_fintopo4 X0 X1 X2) \wedge ((X1 \neq k1_struct_0 X0) \wedge (X2 \neq k1_struct_0 \\ & X0)))))))))) \end{aligned}$$