

t17_fintopo2
(TMYUfex8tLwSm6MjbtFC1w33eX7aLj8S3tt)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ 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 $k11_fin_topo : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_margrel1 : \iota$ be given. Let $k1_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_margrel1 : \iota$ be given. Let $k10_fin_topo : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fin_topo : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X1 \in k10_fin_topo X0 X2) \Leftrightarrow (\\ & X1 \in X2) \wedge (r1_xboole_0 (k7_subset_1 (u1_struct_0 X0) (k1_fin_topo \\ & X0 X1) (k6_domain_1 (u1_struct_0 X0) X1)) X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X1 \in k10_fin_topo X0 X2) \Leftrightarrow (\\ & k4_fintopo2 X0 X1 X2 = k8_margrel1) \wedge (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\neg (k1_fintopo2 X0 X1 X3 X2 = k8_margrel1) \wedge (k5_fintopo2 \\ & X0 X1 X3 = k7_margrel1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((k4_fintopo2 X0 X1 X2 = k8_margrel1) \Leftrightarrow \\ & (X1 \in X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X1 \in k11_fin_topo X0 X2) \Leftrightarrow ((\\ & X1 \in X2) \wedge (\neg r1_xboole_0 (k7_subset_1 (u1_struct_0 X0) (k1_fin_topo \\ & X0 X1) (k6_domain_1 (u1_struct_0 X0) X1)) X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Rightarrow (r1_xboole_0 X1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((X1 \in X2) \Rightarrow (k4_fintopo2 X0 X1 \\ & X2 = k8_margrel1)) \wedge ((\neg X1 \in X2) \Rightarrow (k4_fintopo2 X0 X1 X2 = k7_margrel1)))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((X1 \in k11_fin_topo X0 X2) \Leftrightarrow ((\\ & k4_fintopo2 X0 X1 X2 = k8_margrel1) \wedge (\exists X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \wedge ((k1_fintopo2 X0 X1 X3 X2 = k8_margrel1) \wedge (k5_fintopo2 \\ & X0 X1 X3 = k7_margrel1)))))) \end{aligned}$$