

t92_goboard6

(TMTJP9qkiB5xxxzhv5LFSRwyLNsMDXL58m4w)

October 27, 2020

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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_pcomps_1 : \iota \Rightarrow \iota$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_connsp_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $k2_pcomps_1 : \iota \Rightarrow \iota$ be given. Let $v1_pre_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (u1_struct_0 (k3_pcomps_1 X0))) \Rightarrow (\forall X3. (v1_xreal_0 X3) \Rightarrow \\ & ((X1 = X2) \Rightarrow ((r1_xreal_0 X3 k6_numbers) \vee (m1_connsp_2 (k9_metric_1 \\ & X0 X1 X3) (k3_pcomps_1 X0) X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_xboole_0 X1 X2)) \Rightarrow (r1_xboole_0 X0 X2) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0))) \Rightarrow ((X1 \in k1_tops_1 \\ & (k3_pcomps_1 X0) X2) \Leftrightarrow (\exists X3. (v1_xreal_0 X3) \wedge ((\neg r1_xreal_0 \\ & X3 k6_numbers) \wedge (r1_tarski (k9_metric_1 X0 X1 X3) X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in k2_pre_topc \\ X0 X1) \Leftrightarrow (\forall X3.(m1_connsp_2 X3 X0 X2) \Rightarrow (\neg r1_xboole_0 X3 X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1_metric_1 X0) \Rightarrow ((u1_struct_0 X0 = u1_struct_0 (k3_pcomps_1 X0)) \wedge (u1_pre_topc (k3_pcomps_1 X0) = k2_pcomps_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_metric_1 X0)) \Rightarrow (\neg v2_struct_0 (k3_pcomps_1 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1_metric_1 X0) \Rightarrow ((v1_pre_topc (k3_pcomps_1 X0)) \wedge (v2_pre_topc (k3_pcomps_1 X0))) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge \\ (l1_pre_topc X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ (m1_connsp_2 X2 X0 X1) \Rightarrow (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0)))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l1_metric_1 X0) \Rightarrow (l1_pre_topc (k3_pcomps_1 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((m1_connsp_2 \\ X2 X0 X1) \Leftrightarrow (X1 \in k1_tops_1 X0 X2)))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\ X0)))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in k2_pre_topc \\ (k3_pcomps_1 X0) X1) \Leftrightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow (\neg (\neg r1_xxreal_0 \\ X3 k6_numbers) \wedge (r1_xboole_0 (k9_metric_1 X0 X2 X3) X1)))))) \end{aligned}$$