

t6_hausdorf

(TML5sTYWMHWQ2xMbEuUhwhjPik2mrvvzoeL2)

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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 $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k4_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\ & X0)))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in k2_pre_topc \\ & (k3_pcomps_1 X0) X1) \Leftrightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow (\neg(\neg r1_xxreal_0 \\ & X3 k6_numbers) \wedge (r1_xboole_0 (k9_metric_1 X0 X2 X3) X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (\neg(\neg r1_xboole_0 X0 X1) \wedge (\forall X2. \neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1_xboole_0 X0 X1)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(l1_metric_1 X1) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X1)) \Rightarrow ((X3 \in k9_metric_1 X1 X2 X0) \Leftrightarrow ((\neg v2_struct_0 \\ & X1) \wedge (\neg r1_xxreal_0 X0 (k2_metric_1 X1 X2 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8_metric_1 X0)\wedge(l1_metric_1 X0))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(k4_metric_1 X0 X1 X2 = k2_metric_1 X0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_metric_1 X0)\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(v1_xreal_0 X2)))\Rightarrow(m1_subset_1 (k9_metric_1 X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v6_metric_1 X0)\wedge((v7_metric_1 X0)\wedge((v8_metric_1 X0)\wedge((v9_metric_1 X0)\wedge(l1_metric_1 X0))))))\Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0))))\Rightarrow((X1 \in k2_pre_topc (k3_pcomps_1 X0) X2)\Leftrightarrow(\forall X3.(v1_xreal_0 X3)\Rightarrow(\neg(\neg r1_xreal_0 X3 k6_numbers)\wedge(\forall X4.(m1_subset_1 X4 (u1_struct_0 X0))\Rightarrow(\neg(X4 \in X2)\wedge(\neg r1_xreal_0 X3 (k4_metric_1 X0 X1 X4)))))))))) \end{aligned}$$