

t42_hausdorf (TMKUh- FcK43kPEF9d2Sjp3GY8vAv6gJbDnZC)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $v2_compts_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_hausdorf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. 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 $k3_pcomps_1 : \iota \Rightarrow \iota$ be given. Let $k1_hausdorf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $g1_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_pre_topc : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rltopsp1 : \iota \Rightarrow o$ be given. Let $k14_euclid : \iota \Rightarrow \iota$ be given. Let $v1_metric_1 : \iota \Rightarrow o$ be given. Let $l1_rltopsp1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $g1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Let $k10_funcsdom : \iota \Rightarrow \iota$ be given. Let $k2_finseq1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\
& X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow \\
& (\forall X3. ((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (((v2_compts_1 X1 (k3_pcomps_1 \\
& X0)) \wedge ((v2_compts_1 X2 (k3_pcomps_1 X0)) \wedge (v2_compts_1 X3 (k3_pcomps_1 \\
& X0)))) \Rightarrow (r1_xxreal_0 (k1_hausdorf X0 X1 X3) (k7_real_1 (k1_hausdorf \\
& X0 X1 X2) (k1_hausdorf X0 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.((v2_compts_1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))) \Leftrightarrow ((v2_compts_1 X1 (g1_pre_topc (u1_struct_0 \\ X0) (u1_pre_topc X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ (g1_pre_topc (u1_struct_0 X0) (u1_pre_topc X0))))))) \end{aligned} \quad (2)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (3)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow ((v2_pre_topc (k15_euclid X0)) \wedge \\ ((v13_algstr_0 (k15_euclid X0)) \wedge ((v2_rlvect_1 (k15_euclid X0)) \wedge \\ ((v3_rlvect_1 (k15_euclid X0)) \wedge ((v4_rlvect_1 (k15_euclid X0)) \wedge \\ ((v5_rlvect_1 (k15_euclid X0)) \wedge ((v6_rlvect_1 (k15_euclid X0)) \wedge \\ ((v7_rlvect_1 (k15_euclid X0)) \wedge ((v8_rlvect_1 (k15_euclid X0)) \wedge \\ (v5_rltopsp1 (k15_euclid X0)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k15_euclid X0)) \wedge \\ (v5_rltopsp1 (k15_euclid X0))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow ((\neg v2_struct_0 (k14_euclid X0)) \wedge \\ ((v1_metric_1 (k14_euclid X0)) \wedge ((v6_metric_1 (k14_euclid X0)) \wedge \\ ((v7_metric_1 (k14_euclid X0)) \wedge ((v8_metric_1 (k14_euclid X0)) \wedge \\ (v9_metric_1 (k14_euclid X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1_rltopsp1 X0) \Rightarrow ((l1_rlvect_1 X0) \wedge (l1_pre_topc X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X0 k5_numbers) \wedge \\ ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k15_euclid X0)))) \wedge \\ (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k15_euclid X0)))))) \Rightarrow \\ (m1_subset_1 (k3_hausdorff X0 X1 X2) k1_numbers) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow ((v5_rltopsp1 (k15_euclid X0)) \wedge \\ (l1_rltopsp1 (k15_euclid X0))) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0) \Rightarrow & ((v1_metric_1\ (k14_euclid\ X0)) \wedge \\ & ((v6_metric_1\ (k14_euclid\ X0)) \wedge ((v7_metric_1\ (k14_euclid\ X0)) \wedge \\ & ((v8_metric_1\ (k14_euclid\ X0)) \wedge ((v9_metric_1\ (k14_euclid\ X0)) \wedge \\ & (l1_metric_1\ (k14_euclid\ X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1\ X0) \Rightarrow & (\forall X1.((v5_rltopsp1\ X1) \wedge (\\ l1_rltopsp1\ X1)) \Rightarrow & ((X1 = k15_euclid\ X0) \Leftrightarrow ((g1_pre_topc\ (u1_struct_0 \\ X1)\ (u1_pre_topc\ X1) = k3_pcomps_1\ (k14_euclid\ X0)) \wedge (g1_rlvect_1 \\ (u1_struct_0\ X1)\ (u2_struct_0\ X1)\ (u1_algstr_0\ X1)\ (u1_rlvect_1 \\ X1) = k10_funcsdom\ (k2_finseq_1\ X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1\ X0\ k5_numbers) \Rightarrow & (\forall X1.(m1_subset_1 \\ X1\ (k1_zfmisc_1\ (u1_struct_0\ (k15_euclid\ X0)))) \Rightarrow & (\forall X2. \\ (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ (k15_euclid\ X0)))) \Rightarrow & \\ (\forall X3.(m1_subset_1\ X3\ k1_numbers) \Rightarrow & ((X3 = k3_hausdorff\ X0 \\ X1\ X2) \Leftrightarrow (\exists X4.(m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0 \\ (k3_pcomps_1\ (k14_euclid\ X0)))))) \wedge (\exists X5.(m1_subset_1\ X5 \\ (k1_zfmisc_1\ (u1_struct_0\ (k3_pcomps_1\ (k14_euclid\ X0)))))) \wedge \\ ((X1 = X4) \wedge ((X2 = X5) \wedge (X3 = k1_hausdorff\ (k14_euclid\ X0)\ X4\ X5)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v6_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v7_ordinal1\ X1)) \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_subset_1\ X0\ k5_numbers) \Rightarrow & (\forall X1.((\neg v1_xboole_0 \\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ (k15_euclid\ X0)))))) \Rightarrow & \\ (\forall X2.((\neg v1_xboole_0\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1 \\ (u1_struct_0\ (k15_euclid\ X0)))))) \Rightarrow & (\forall X3.((\neg v1_xboole_0 \\ X3) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ (k15_euclid\ X0)))))) \Rightarrow & \\ (((v2_compts_1\ X1\ (k15_euclid\ X0)) \wedge ((v2_compts_1\ X2\ (k15_euclid \\ X0)) \wedge (v2_compts_1\ X3\ (k15_euclid\ X0)))) \Rightarrow & (r1_xxreal_0\ (k3_hausdorff \\ X0\ X1\ X3)\ (k7_real_1\ (k3_hausdorff\ X0\ X1\ X2)\ (k3_hausdorff\ X0\ X2\ X3)))))) \end{aligned}$$