

t34_hausdorf (TM- SLnTEzutZjpJxkzFR3bmHX7qmdSVtoHtG)

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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 $v1_xboole_0 : \iota \Rightarrow o$ 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 $v2_compts_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_hausdorf : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 \\
& X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow \\
& (\forall X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (((v2_compts_1 X1 (k3_pcomps_1 \\
& X0)) \wedge ((v2_compts_1 X2 (k3_pcomps_1 X0)) \wedge (v2_compts_1 X3 (k3_pcomps_1 \\
& X0)))) \Rightarrow (r1_xxreal_0 (k8_weierstr X0 X1 X3) (k7_real_1 (k1_hausdorf \\
& X0 X1 X2) (k1_hausdorf X0 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_metric_1 \\
& X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge \\
& (l1_metric_1 X0)))))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& (k3_pcomps_1 X0)))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\
& (k3_pcomps_1 X0)))))) \Rightarrow (m1_subset_1 (k1_hausdorf X0 X1 X2) k1_numbers)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\
& X1)) \Rightarrow (k7_real_1 X0 X1 = k7_real_1 X1 X0)
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_metric_1 \\ & X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge \\ & (l1_metric_1 X0)))))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & (k3_pcomps_1 X0)))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & (k3_pcomps_1 X0)))))) \Rightarrow (k1_hausdorff X0 X1 X2 = k1_hausdorff X0 X2 \\ & X1) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \tag{5}$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow \\ & (\forall X3. ((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (((v2_compts_1 X1 (k3_pcomps_1 \\ & X0)) \wedge ((v2_compts_1 X2 (k3_pcomps_1 X0)) \wedge (v2_compts_1 X3 (k3_pcomps_1 \\ & X0)))) \Rightarrow (r1_xxreal_0 (k8_weierstr X0 X3 X1) (k7_real_1 (k1_hausdorff \\ & X0 X1 X2) (k1_hausdorff X0 X2 X3)))))) \end{aligned}$$