

t32_hausdorf
(TMPue5fRqMdszBhvmW64k1iziJrWHN2zXZ7)

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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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_hausdorf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_weierstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k2_square_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $k3_topmetr : \iota$ be given. Let $v3_topmetr : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\
& X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\
& X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow \\
& (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((v2_compts_1 \\
& X1 (k3_pcomps_1 X0)) \wedge ((v2_compts_1 X2 (k3_pcomps_1 X0)) \wedge (X3 \in \\
& X1))) \Rightarrow (r1_xxreal_0 (k1_funct_1 (k6_weierstr X0 X2) X3) (k8_weierstr \\
& X0 X2 X1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\
& (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\
& (r1_xxreal_0 X0 X2))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (r1_xxreal_0 X0 (k4_xxreal_0 X0 X1))) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers) \wedge (m1_subset_1 X1 k1_numbers)) \Rightarrow (k2_square_1 X0 X1 = k4_xxreal_0 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (v1_xreal_0 (k1_funct_1 X0 X1)) \quad (5)$$

Assume the following.

$$(v2_pre_topc k3_topmetr) \wedge (v3_topmetr k3_topmetr) \quad (6)$$

Assume the following.

$$\forall X0.((v3_topmetr X0) \wedge (l1_struct_0 X0)) \Rightarrow (v3_membered (u1_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (m1_subset_1 (k8_weierstr X0 X1 X2) k1_numbers) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow ((v1_funct_1 (k6_weierstr X0 X1)) \wedge (v1_funct_2 (k6_weierstr X0 X1) (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr))) \wedge (m1_subset_1 (k6_weierstr X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)) (u1_struct_0 k3_topmetr)))))) \quad (10)$$

Assume the following.

$$(v2_pre_topc k3_topmetr) \wedge (l1_pre_topc k3_topmetr) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_metric_1 \\ & X0) \wedge ((v7_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge \\ & (l1_metric_1 X0)))))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & (k3_pcomps_1 X0)))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & (k3_pcomps_1 X0)))))) \Rightarrow (m1_subset_1 (k1_hausdorff X0 X1 X2) k1_numbers) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 \\ & X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & (k3_pcomps_1 X0)))) \Rightarrow (k1_hausdorff X0 X1 X2 = k2_square_1 (k8_weierstr \\ & X0 X1 X2) (k8_weierstr X0 X2 X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (m1_subset_1 \\ & X1 k1_numbers)) \Rightarrow (k2_square_1 X0 X1 = k2_square_1 X1 X0) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (15)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v3_membered X1) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \end{aligned} \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v7_metric_1 \\ & X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow \\ & (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 (k3_pcomps_1 X0)))))) \Rightarrow \\ & (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((v2_compts_1 \\ & X1 (k3_pcomps_1 X0)) \wedge ((v2_compts_1 X2 (k3_pcomps_1 X0)) \wedge (X3 \in \\ & X1))) \Rightarrow (r1_xxreal_0 (k1_funct_1 (k6_weierstr X0 X2) X3) (k1_hausdorff \\ & X0 X1 X2)))))) \end{aligned}$$