

t26\_hausdorf  
(TMNMjRY3U8pGwiaZ4hrT5srB5CQ3HofgQzr)

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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  $k5\_weierstr : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_valued\_0 : \iota \Rightarrow o$  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. Let  $k1\_numbers : \iota$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ & (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k3\_pcomps\_1 X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \Rightarrow (((X3 \in X1) \wedge (v2\_compts\_1 X1 (k3\_pcomps\_1 X0)) \Rightarrow (r1\_xxreal\_0 \\ & (k4\_metric\_1 X0 X2 X3) (k1\_funct\_1 (k5\_weierstr X0 X1) X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k3\_pcomps\_1 X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \wedge ((X3 \in X1) \wedge (r1\_xxreal\_0 (k1\_funct\_1 (k6\_weierstr X0 X1) X2) \\ & (k4\_metric\_1 X0 X3 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v2\_valued\_0 X0))) \Rightarrow (v1\_xxreal\_0 (k1\_funct\_1 X0 X1)) \quad (4)$$

Assume the following.

$$(v2\_pre\_topc k3\_topmetr) \wedge (v3\_topmetr k3\_topmetr) \quad (5)$$

Assume the following.

$$\forall X0. ((v3\_topmetr X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (v3\_membered (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge \\ & ((v7\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 \\ & X0)))))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 \\ & X0)))))) \Rightarrow ((v1\_funct\_1 (k6\_weierstr X0 X1)) \wedge ((v1\_funct\_2 (k6\_weierstr \\ & X0 X1) (u1\_struct\_0 (k3\_pcomps\_1 X0)) (u1\_struct\_0 k3\_topmetr))) \wedge \\ & (m1\_subset\_1 (k6\_weierstr X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & (k3\_pcomps\_1 X0)) (u1\_struct\_0 k3\_topmetr)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge \\ & ((v7\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 \\ & X0)))))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 \\ & X0)))))) \Rightarrow ((v1\_funct\_1 (k5\_weierstr X0 X1)) \wedge ((v1\_funct\_2 (k5\_weierstr \\ & X0 X1) (u1\_struct\_0 (k3\_pcomps\_1 X0)) (u1\_struct\_0 k3\_topmetr))) \wedge \\ & (m1\_subset\_1 (k5\_weierstr X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & (k3\_pcomps\_1 X0)) (u1\_struct\_0 k3\_topmetr)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8\_metric\_1 X0)\wedge(l1\_metric\_1 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k4\_metric\_1 X0 X1 X2) k1\_numbers) \quad (10)$$

Assume the following.

$$(v2\_pre\_topc k3\_topmetr)\wedge(l1\_pre\_topc k3\_topmetr) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8\_metric\_1 X0)\wedge(l1\_metric\_1 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k4\_metric\_1 X0 X1 X2 = k4\_metric\_1 X0 X2 X1) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0))\Rightarrow((v1\_relat\_1 X0)\wedge(v2\_valued\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered X1)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v3\_valued\_0 X2)) \quad (17)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0 X0)\wedge((v6\_metric\_1 X0)\wedge((v7\_metric\_1 X0)\wedge((v8\_metric\_1 X0)\wedge((v9\_metric\_1 X0)\wedge(l1\_metric\_1 X0))))))\Rightarrow \\ & (\forall X1.((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 X0))))))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((v2\_compts\_1 X1 (k3\_pcomps\_1 X0))\Rightarrow(r1\_xxreal\_0 (k1\_funct\_1 (k6\_weierstr X0 X1) X2) (k1\_funct\_1 (k5\_weierstr X0 X1) X2)))))) \end{aligned}$$