t22_hausdorf (TMWUhbDtdjkBTwSkGWKmeAKR6QHn4ihqbWT)

October 27, 2020

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 $k10\_weierstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_weierstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k2\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $v2\_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v6\_metric\_1\ X0) \wedge ((v7\_metric\_1\ X0) \wedge ((v8\_metric\_1\ X0) \wedge ((v9\_metric\_1\ X0) \wedge (l1\_metric\_1\ X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))) \Rightarrow (((v2\_compts\_1\ X1\ (k3\_pcomps\_1\ X0)) \wedge (v2\_compts\_1\ X2\ (k3\_pcomps\_1\ X0))) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (((X3 \in X1) \wedge (X4 \in X2)) \Rightarrow ((r1\_xxreal\_0\ (k7\_weierstr\ X0\ X1\ X2)\ (k4\_metric\_1\ X0\ X3\ X4)) \wedge (r1\_xxreal\_0\ (k4\_metric\_1\ X0\ X3\ X4)\ (k10\_weierstr\ X0\ X1\ X2)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (((r1\_xxreal\_0\ X0\ X1) \wedge (r1\_xxreal\_0\ X1\ X2)) \Rightarrow (r1\_xxreal\_0\ X0\ X2)))) \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k4\_metric\_1\ X0\ X1\ X2 = k2\_metric\_1\ X0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v2\_valued\_0\ X0)))\Rightarrow(v1\_xxreal\_0\ (k1\_funct\_1\ X0\ X1)) \tag{5}$$

Assume the following.

$$(v2\_pre\_topc\ k3\_topmetr)\wedge(v3\_topmetr\ k3\_topmetr) \tag{6}$$

Assume the following.

$$\forall X0.((v3\_topmetr\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(v3\_membered\ (u1\_struct\_0\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0)))))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))))\Rightarrow((v1\_funct\_1\ (k6\_weierstr\ X0\ X1))\wedge((v1\_funct\_2\ (k6\_weierstr\ X0\ X1)\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))\ (u1\_struct\_0\ k3\_topmetr))\wedge(m1\_subset\_1\ (k6\_weierstr\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0))\ (u1\_struct\_0\ k3\_topmetr)))))) \tag{9}$$

Assume the following.

$$(v2\_pre\_topc\ k3\_topmetr)\wedge(l1\_pre\_topc\ k3\_topmetr) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_metric\_1\ X0)\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k2\_metric\_1\ X0\ X1\ X2)\ k1\_numbers) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0))))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0))))))\Rightarrow(m1\_subset\_1\ (k10\_weierstr\ X0\ X1\ X2)\ k1\_numbers) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{13}$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(v2\_membered\ X0) \tag{14}$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(v2\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v2\_valued\_0\ X2)) \tag{17}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k3\_pcomps\_1\ X0)))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(((v2\_compts\_1\ X1\ (k3\_pcomps\_1\ X0))\wedge((v2\_compts\_1\ X2\ (k3\_pcomps\_1\ X0))\wedge(X3\in X2)))\Rightarrow(r1\_xxreal\_0\ (k1\_funct\_1\ (k6\_weierstr\ X0\ X1)\ X3)\ (k10\_weierstr\ X0\ X1\ X2))))))$$