

# t28\_hausdorf (TMTFTgwCTGkNQvhMt- bATt7uQQjYLj1f8WtA)

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  $k6\_numbers : \iota$  be given. Let  $k8\_weierstr : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 \\ X0) \wedge (l1\_metric\_1 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (r1\_xxreal\_0 \\ k6\_numbers (k4\_metric\_1 X0 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 \\ X0)))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\ (k3\_pcomps\_1 X0)))) \Rightarrow (\neg (X1 \neq k1\_xboole\_0) \wedge ((v2\_compts\_1 X1 (k3\_pcomps\_1 \\ X0)) \wedge ((X2 \neq k1\_xboole\_0) \wedge ((v2\_compts\_1 X2 (k3\_pcomps\_1 X0)) \wedge \\ (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 \\ X4 (u1\_struct\_0 X0)) \Rightarrow (\neg (X3 \in X1) \wedge ((X4 \in X2) \wedge (k4\_metric\_1 X0 X3 X4 = \\ k8\_weierstr X0 X1 X2)))))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k3\_pcomps\_1 X0)))))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 X0)))))) \Rightarrow \\ & (((v2\_compts\_1 X1 (k3\_pcomps\_1 X0)) \wedge (v2\_compts\_1 X2 (k3\_pcomps\_1 \\ & X0))) \Rightarrow (r1\_xreal\_0 k6\_numbers (k8\_weierstr X0 X1 X2)))))) \end{aligned}$$