

## t24\_mfold\_2

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  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  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_topreal9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_euclid : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k9\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_metric\_1 : \iota \Rightarrow o$  be given. Let  $k2\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $v1\_metric\_1 : \iota \Rightarrow o$  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  $k3\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $g1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_funcsdom : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (u1\_struct\_0 (k14\_euclid X0) = u1\_struct\_0 (k15\_euclid X0)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(v1\_xreal\_0 \\ & X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k14\_euclid X0))) \Rightarrow ( \\ & (X2 = X3) \Rightarrow (k9\_metric\_1 (k14\_euclid X0) X3 X1 = k1\_topreal9 X0 X2 X1)))))) \quad (4) \end{aligned}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ X0))) \Rightarrow (\forall X2.\forall X3.(g1\_pre\_topc X0 X1 = g1\_pre\_topc \\ X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (m1\_subset\_1 (u1\_pre\_topc X0) (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0) \Rightarrow ((l1\_rlvect\_1 X0) \wedge (l1\_pre\_topc X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow (m1\_subset\_1 (k2\_pcomps\_1 X0) (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((v5\_rltopsp1 (k15\_euclid X0)) \wedge \\ (l1\_rltopsp1 (k15\_euclid X0))) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow ((v1\_metric\_1 (k14\_euclid X0)) \wedge \\ ((v6\_metric\_1 (k14\_euclid X0)) \wedge ((v7\_metric\_1 (k14\_euclid X0)) \wedge \\ ((v8\_metric\_1 (k14\_euclid X0)) \wedge ((v9\_metric\_1 (k14\_euclid X0)) \wedge \\ (l1\_metric\_1 (k14\_euclid X0))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.((v5\_rltopsp1 X1) \wedge ( \\ l1\_rltopsp1 X1)) \Rightarrow ((X1 = k15\_euclid X0) \Leftrightarrow ((g1\_pre\_topc (u1\_struct\_0 \\ X1) (u1\_pre\_topc X1) = k3\_pcomps\_1 (k14\_euclid X0)) \wedge (g1\_rlvect\_1 \\ (u1\_struct\_0 X1) (u2\_struct\_0 X1) (u1\_algstr\_0 X1) (u1\_rlvect\_1 \\ X1) = k10\_funcsdom (k2\_finseq\_1 X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow (k3\_pcomps\_1 X0 = g1\_pre\_topc (u1\_struct\_0 X0) (k2\_pcomps\_1 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_metric\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow ((X1 = k2\_pcomps\_1 X0) \Leftrightarrow (\forall X2. \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((X2 \in X1) \Leftrightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(X3 \in X2) \wedge (\forall X4.(m1\_subset\_1 \\ X4 k1\_numbers) \Rightarrow (\neg(\neg r1\_xreal\_0 X4 k6\_numbers) \wedge (r1\_tarski (k9\_metric\_1 \\ X0 X3 X4) X2)))))))))) \quad (15) \end{aligned}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Leftrightarrow (X0 \in k1\_numbers) \quad (16)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Leftrightarrow (X0 \in k4\_ordinal1) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (18)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 (k15\_euclid X0)))) \Rightarrow ((X1 \in u1\_pre\_topc (k15\_euclid \\ X0)) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow \\ (\neg(X2 \in X1) \wedge (\forall X3.(v1\_xreal\_0 X3) \Rightarrow (\neg(\neg r1\_xreal\_0 X3 k1\_xboole\_0) \wedge \\ (r1\_tarski (k1\_topreal9 X0 X2 X3) X1)))))) \quad (19) \end{aligned}$$