

# t22\_euclid (TMHZMuFXeuJxCzm- BiTE8WQ1NTGMqVjKhJ2U)

October 27, 2020

Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $g1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k14\_euclid : \iota \Rightarrow \iota$  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  $l1\_metric\_1 : \iota \Rightarrow o$  be given. Let  $k2\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $k13\_euclid : \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $k3\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $g1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g1\_rltopsp1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_metric\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k1\_zfmisc\_1 \\ X0))) \Rightarrow (\forall X2. \forall X3. (g1\_pre\_topc X0 X1 = g1\_pre\_topc \\ X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\ X0 X0) k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X0) k1\_numbers)))))) \Rightarrow (\forall X2. \forall X3. ( \\ g1\_metric\_1 X0 X1 = g1\_metric\_1 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v2\_pre\_topc\ (k15\_euclid\ X0)) \wedge \\ & ((v13\_algstr\_0\ (k15\_euclid\ X0)) \wedge ((v2\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v3\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v4\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v5\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v6\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v7\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v8\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & (v5\_rltopsp1\ (k15\_euclid\ X0)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((-v2\_struct\_0\ (k14\_euclid\ X0)) \wedge \\ & ((v1\_metric\_1\ (k14\_euclid\ X0)) \wedge ((v6\_metric\_1\ (k14\_euclid\ X0)) \wedge \\ & ((v7\_metric\_1\ (k14\_euclid\ X0)) \wedge ((v8\_metric\_1\ (k14\_euclid\ X0)) \wedge \\ & (v9\_metric\_1\ (k14\_euclid\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_metric\_1\ X0) \Rightarrow & (m1\_subset\_1\ (k2\_pcomps\_1\ X0)\ (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge \\ & (l1\_rltopsp1\ (k15\_euclid\ X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v1\_metric\_1\ (k14\_euclid\ X0)) \wedge \\ & ((v6\_metric\_1\ (k14\_euclid\ X0)) \wedge ((v7\_metric\_1\ (k14\_euclid\ X0)) \wedge \\ & ((v8\_metric\_1\ (k14\_euclid\ X0)) \wedge ((v9\_metric\_1\ (k14\_euclid\ X0)) \wedge \\ & (l1\_metric\_1\ (k14\_euclid\ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v1\_funct\_1\ (k13\_euclid\ X0)) \wedge ( \\ & (v1\_funct\_2\ (k13\_euclid\ X0)\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid \\ & X0))\ k1\_numbers) \wedge (m1\_subset\_1\ (k13\_euclid\ X0)\ (k1\_zfmisc\_1\ ( \\ & k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X0)\ (k1\_euclid\ X0))\ k1\_numbers)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & (\forall X1.((v5\_rltopsp1\ X1) \wedge ( \\ & l1\_rltopsp1\ X1)) \Rightarrow ((X1 = k15\_euclid\ X0) \Leftrightarrow ((g1\_pre\_topc\ (u1\_struct\_0 \\ & X1)\ (u1\_pre\_topc\ X1) = k3\_pcomps\_1\ (k14\_euclid\ X0)) \wedge (g1\_rlvect\_1 \\ & (u1\_struct\_0\ X1)\ (u2\_struct\_0\ X1)\ (u1\_algstr\_0\ X1)\ (u1\_rlvect\_1 \\ & X1) = k10\_funcsdom\ (k2\_finseq\_1\ X0)))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (k14\_euclid X0 = g1\_metric\_1 (k1\_euclid X0) (k13\_euclid X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow (k3\_pcomps\_1 X0 = g1\_pre\_topc (u1\_struct\_0 X0) (k2\_pcomps\_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (k1\_euclid X0 = k4\_finseq\_2 X0 k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0) \Rightarrow ((v5\_rltopsp1 X0) \Rightarrow (X0 = g1\_rltopsp1 (u1\_struct\_0 X0) (u2\_struct\_0 X0) (u1\_algstr\_0 X0) (u1\_rlvect\_1 X0) (u1\_pre\_topc X0))) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow ((v1\_metric\_1 X0) \Rightarrow (X0 = g1\_metric\_1 (u1\_struct\_0 X0) (u1\_metric\_1 X0))) \quad (14)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (u1\_struct\_0 (k15\_euclid X0) = k1\_euclid X0)$$