

# t57\_euclid.2 (TMbVHUhM- Bzsiw9joGUAKEPJYu2urfxYCVDJ)

October 27, 2020

Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X3.( \\ & m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ((r1\_rvsum\_1 X2 \\ & X3) \Rightarrow (r1\_rvsum\_1 (k1\_rlvect\_1 (k15\_euclid X0) X2 X1) X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (m2\_finseq\_1 X1 k1\_numbers)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (( \\ & v3\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))))) \Rightarrow ((r1\_rvsum\_1 X0 \\ & X1) \Rightarrow (r1\_rvsum\_1 X1 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k15\_euclid X0)) \wedge (v5\_rltopsp1 (k15\_euclid X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l1\_pre\_topc X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l1\_rlvect\_1 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(v1\_xreal\_0 X2)))\Rightarrow(m1\_subset\_1 (k1\_rlvect\_1 X0 X1 X2) (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v5\_rltopsp1 (k15\_euclid X0))\wedge(l1\_rltopsp1 (k15\_euclid X0))) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(v3\_valued\_0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(v1\_finseq\_1 X1)) \quad (11)$$

**Theorem 1**

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(v1\_xreal\_0 X1)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0)))\Rightarrow((r1\_rvsum\_1 X2 X3)\Rightarrow(r1\_rvsum\_1 X2 (k1\_rlvect\_1 (k15\_euclid X0) X3 X1))))))$$