

t49\_euclid (TMQD-  
SzQeeatYFK7u1moGbSWyTcnXwXJD6hq)

October 27, 2020

Let  $v7\_ordinal1 : \iota \Rightarrow o$  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  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ( \\ (v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\ X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge \\ ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ X1)) \Rightarrow (k1\_rlvect\_1 X1 (k5\_algstr\_0 X1 X2 X3) X0 = k5\_algstr\_0 X1 ( \\ k1\_rlvect\_1 X1 X2 X0) (k1\_rlvect\_1 X1 X3 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow ((v2\_pre\_topc (k15\_euclid X0)) \wedge \\ ((v13\_algstr\_0 (k15\_euclid X0)) \wedge ((v2\_rlvect\_1 (k15\_euclid X0)) \wedge \\ ((v3\_rlvect\_1 (k15\_euclid X0)) \wedge ((v4\_rlvect\_1 (k15\_euclid X0)) \wedge \\ ((v5\_rlvect\_1 (k15\_euclid X0)) \wedge ((v6\_rlvect\_1 (k15\_euclid X0)) \wedge \\ ((v7\_rlvect\_1 (k15\_euclid X0)) \wedge ((v8\_rlvect\_1 (k15\_euclid X0)) \wedge \\ (v5\_rltopsp1 (k15\_euclid X0)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k15\_euclid X0)) \wedge (v5\_rltopsp1 (k15\_euclid X0))) \quad (3)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0) \Rightarrow ((l1\_rlvect\_1 X0) \wedge (l1\_pre\_topc X0)) \quad (4)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \quad (5)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ & (k15\_euclid\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ ( \\ & k15\_euclid\ X0))) \Rightarrow (\forall X3.(v1\_xreal\_0\ X3) \Rightarrow (k1\_rlvect\_1\ ( \\ k15\_euclid\ X0)\ (k5\_algstr\_0\ (k15\_euclid\ X0)\ X1\ X2)\ X3 = k5\_algstr\_0 \\ & (k15\_euclid\ X0)\ (k1\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ X3)\ (k1\_rlvect\_1 \\ & (k15\_euclid\ X0)\ X2\ X3)))))) \end{aligned}$$