

# t27\_euclid

## (TMWkXM6eygsfVGZVc8ndL1bxkSGqAags3xe)

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  $k3\_rlvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $v2\_struct.0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr.0 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr.0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr.0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $l1\_algstr.0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  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  $l2\_struct.0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect.1 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct.0 X0) \wedge ((v13\_algstr.0 X0) \wedge ((v3\_rlvect.1 \\ & X0) \wedge ((v4\_rlvect.1 X0) \wedge (l2\_algstr.0 X0)))) \Rightarrow (\forall X1. (m1\_subset.1 \\ & X1 (u1\_struct.0 X0)) \Rightarrow ((k1\_algstr.0 X0 X1 (k4\_struct.0 X0) = X1) \wedge \\ & (k1\_algstr.0 X0 (k4\_struct.0 X0) X1 = X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v2\_rlvect.1 X0) \wedge (l1\_algstr.0 \\ & X0)) \wedge ((m1\_subset.1 X1 (u1\_struct.0 X0)) \wedge (m1\_subset.1 X2 (u1\_struct.0 \\ & X0)))) \Rightarrow (k3\_rlvect.1 X0 X1 X2 = k1\_algstr.0 X0 X1 X2) \end{aligned} \quad (2)$$

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.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct.0 (k15\_euclid X0)) \wedge \\ & (v5\_rltopsp1 (k15\_euclid X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1\ X0) \Rightarrow (l2\_algstr\_0\ X0) \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (k4\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \quad (8)$$

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.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0) \wedge (l1\_algstr\_0\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (k3\_rlvect\_1\ X0\ X1\ X2 = k3\_rlvect\_1\ X0\ X2\ X1) \end{aligned} \quad (10)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ (k15\_euclid\ X0))) \Rightarrow ((k3\_rlvect\_1\ (k15\_euclid\ X0)\ (k4\_struct\_0\ (k15\_euclid\ X0))\ X1 = X1) \wedge (k3\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ (k4\_struct\_0\ (k15\_euclid\ X0)) = X1))) \end{aligned}$$