

t50\_euclid\_3  
(TMXqNwduG6Nt2Q5ksN9yJ59G4doqv1F4drs)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_euclid\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k6\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v2\_monoid\_0 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  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. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_monoid\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ (k15\_euclid X0))) \Rightarrow (k4\_algstr\_0 (k15\_euclid X0) X1 = k1\_rlvect\_1 \\ (k15\_euclid X0) X1 (k1\_real\_1 np\_1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ (k15\_euclid X0))) \Rightarrow (k3\_rlvect\_1 (k15\_euclid X0) X1 (k4\_algstr\_0 \\ (k15\_euclid X0) X1) = k4\_struct\_0 (k15\_euclid X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow ((k1\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ np\_1 = X1) \wedge \\ (k1\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ k6\_numbers = k4\_struct\_0\ (k15\_euclid \\ X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow ((k3\_rlvect\_1\ (k15\_euclid\ X0)\ (k4\_struct\_0 \\ (k15\_euclid\ X0))\ X1 = X1) \wedge (k3\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ (k4\_struct\_0 \\ (k15\_euclid\ X0)) = X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0\ np\_1) \wedge (m2\_subset\_1\ np\_1\ k1\_numbers\ k5\_numbers)) \wedge \\ ((m1\_subset\_1\ np\_1\ k5\_numbers) \wedge (m1\_subset\_1\ np\_1\ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\neg v1\_xboole\_0\ np\_1 \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1\ X0)))) \Rightarrow (k6\_rvsum\_1\ X0 = k30\_valued\_1\ X0) \quad (8)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (9)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_valued\_0\ X0))) \Rightarrow \\ (k30\_valued\_1\ (k30\_valued\_1\ X0) = X0) \quad (11)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v2\_monoid\_0\ (k15\_euclid\ X0)) \wedge \\ (v5\_rltopsp1\ (k15\_euclid\ X0))) \quad (12)$$

Assume the following.

$$v6\_membered\ k4\_ordinal1 \quad (13)$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \quad (14)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge ((\neg v1\_xboole\_0 \ X1) \wedge \\ (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ X2 \ X0 \ X1) \Rightarrow (m1\_subset\_1 \ X2 \ X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_funct\_1 \ X1) \wedge \\ (v1\_finseq\_1 \ X1) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \\ X0)))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 \ X0) \Rightarrow ((l2\_struct\_0 \ X0) \wedge (l1\_algstr\_0 \ X0)) \quad (18)$$

Assume the following.

$$\forall X0. (l1\_rlvect\_1 \ X0) \Rightarrow (l2\_algstr\_0 \ X0) \quad (19)$$

Assume the following.

$$\forall X0. (l1\_rltopsp1 \ X0) \Rightarrow ((l1\_rlvect\_1 \ X0) \wedge (l1\_pre\_topc \ X0)) \quad (20)$$

Assume the following.

$$\forall X0. (l1\_algstr\_0 \ X0) \Rightarrow (l1\_struct\_0 \ X0) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1 \ X0)))) \Rightarrow (m2\_finseq\_1 \ (k6\_rvsum\_1 \ X0) \ k1\_numbers) \end{aligned} \quad (22)$$

Assume the following.

$$m2\_subset\_1 \ k6\_numbers \ k1\_numbers \ k5\_numbers \quad (23)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (24)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (m1\_subset\_1 \ (k1\_real\_1 \\ X0) \ k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow ((v5\_rltopsp1 \ (k15\_euclid \ X0)) \wedge \\ (l1\_rltopsp1 \ (k15\_euclid \ X0))) \quad (26)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& \quad X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& \quad (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ((r1\_euclid\_3 X0 X1 X2) \Leftrightarrow (\forall X3. \\
& (m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow \\
& \quad ((k3\_rlvect\_1 (k15\_euclid X0) (k1\_rlvect\_1 (k15\_euclid X0) X1 \\
& \quad X3) (k1\_rlvect\_1 (k15\_euclid X0) X2 X4) = k4\_struct\_0 (k15\_euclid \\
& \quad X0)) \Rightarrow ((X3 = k6\_numbers) \wedge (X4 = k6\_numbers)))))))))
\end{aligned} \tag{27}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v1\_valued\_0 X0)) \tag{28}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_xboole\_0 X2)) \tag{29}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (v3\_valued\_0 X1)) \tag{30}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow ((v2\_monoid\_0 X0) \Rightarrow (v1\_monoid\_0 X0)) \tag{31}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (v1\_finseq\_1 X1)) \tag{32}$$

Assume the following.

$$\forall X0.((v1\_monoid\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \tag{33}$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \tag{34}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& \quad X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
& \quad (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ((r1\_euclid\_3 X0 X1 X2) \Rightarrow ((X1 \neq \\
& X2) \wedge ((X1 \neq k4\_struct\_0 (k15\_euclid X0)) \wedge (X2 \neq k4\_struct\_0 (k15\_euclid \\
& \quad X0)))))))))
\end{aligned}$$