

## t27\_toprns\_1

(TMUiC2t3EXbuGyyFUgUgXM9aVeiF9FLUKH6)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  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  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow (k12\_euclid\ (k4\_algstr\_0\ (k15\_euclid\ X0)\ X1) = \\ k12\_euclid\ X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ ( \\ k15\_euclid\ X0))) \Rightarrow ((k4\_algstr\_0\ (k15\_euclid\ X0)\ (k5\_algstr\_0 \\ (k15\_euclid\ X0)\ X1\ X2) = k5\_algstr\_0\ (k15\_euclid\ X0)\ X2\ X1) \wedge (k4\_algstr\_0 \\ (k15\_euclid\ X0)\ (k5\_algstr\_0\ (k15\_euclid\ X0)\ X1\ X2) = k3\_rlvect\_1 \\ (k15\_euclid\ X0)\ (k4\_algstr\_0\ (k15\_euclid\ X0)\ X1)\ X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge \\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \end{aligned} \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1) \wedge (v3\_ordinal1\ k4\_ordinal1) \quad (5)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (6)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1 \ X0) \Rightarrow (l2\_algstr\_0 \ X0) \quad (7)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 \ X0) \Rightarrow ((l1\_rlvect\_1 \ X0) \wedge (l1\_pre\_topc \ X0)) \quad (8)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l2\_algstr\_0 \ X0) \wedge ((m1\_subset\_1 \\ & X1 \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ X0)))) \Rightarrow (m1\_subset\_1 \\ & (k5\_algstr\_0 \ X0 \ X1 \ X2) \ (u1\_struct\_0 \ X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 \ X0) \Rightarrow ((v5\_rltopsp1 \ (k15\_euclid \ X0)) \wedge (l1\_rltopsp1 \ (k15\_euclid \ X0))) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 \ X0) \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_subset\_1 \ X0 \ k1\_numbers \ k5\_numbers) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ (k15\_euclid \ X0))) \Rightarrow (\forall X2.( \\ & m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ (k15\_euclid \ X0))) \Rightarrow (k12\_euclid \ (k5\_algstr\_0 \\ & (k15\_euclid \ X0) \ X1 \ X2) = k12\_euclid \ (k5\_algstr\_0 \ (k15\_euclid \ X0) \\ & X2 \ X1)))) \end{aligned}$$