

t41\_toprns\_1 (TMM-  
bzeAQo5C2zqa5j7PTtF1GpdYEdBVKDWx)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_toprns\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_toprns\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_toprns\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  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  $k7\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $k2\_toprns\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
 & \quad (k15\_euclid X0))) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow ((k4\_algstr\_0 \\
 & (k15\_euclid X0) (k1\_rlvect\_1 (k15\_euclid X0) X1 X2) = k1\_rlvect\_1 \\
 & \quad (k15\_euclid X0) X1 (k7\_binop\_2 X2)) \wedge (k4\_algstr\_0 (k15\_euclid \\
 & X0) (k1\_rlvect\_1 (k15\_euclid X0) X1 X2) = k1\_rlvect\_1 (k15\_euclid \\
 & \quad X0) (k4\_algstr\_0 (k15\_euclid X0) X1 X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
 & \quad (m1\_subset\_1 X1 k1\_numbers) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (( \\
 & v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 (k15\_euclid X0))) \wedge (m1\_subset\_1 \\
 & \quad X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 (k15\_euclid \\
 & \quad X0)))))) \Rightarrow ((v3\_toprns\_1 X2 X0) \Rightarrow (k6\_toprns\_1 X0 (k2\_toprns\_1 \\
 & \quad X1 X0 X2) = k1\_rlvect\_1 (k15\_euclid X0) (k6\_toprns\_1 X0 X2) X1))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ (k15\_euclid\ X0))) \Rightarrow ((k1\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ np\_1 = X1) \wedge \\ (k1\_rlvect\_1\ (k15\_euclid\ X0)\ X1\ k6\_numbers = k4\_struct\_0\ (k15\_euclid \\ X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers) \Rightarrow (\forall X1. \\ ((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ k5\_numbers\ (u1\_struct\_0\ (k15\_euclid \\ X0))) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ ( \\ u1\_struct\_0\ (k15\_euclid\ X0))))))) \Rightarrow (k3\_toprns\_1\ X0\ X1 = k2\_toprns\_1 \\ (k1\_real\_1\ np\_1)\ X0\ X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0\ np\_1) \wedge (m2\_subset\_1\ np\_1\ k1\_numbers\ k5\_numbers)) \wedge \\ ((m1\_subset\_1\ np\_1\ k5\_numbers) \wedge (m1\_subset\_1\ np\_1\ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge ((\neg v1\_xboole\_0\ X1) \wedge \\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (k7\_binop\_2\ X0 = k4\_xcmplx\_0\ X0) \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers) \Rightarrow (k1\_real\_1\ X0 = k4\_xcmplx\_0\ X0) \quad (9)$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1) \wedge (v3\_ordinal1\ k4\_ordinal1) \quad (10)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (m1\_subset\_1\ (k7\_binop\_2\ X0)\ k1\_numbers) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_subset\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 (k15\_euclid X0))) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ & (k15\_euclid X0))))))) \Rightarrow (m1\_subset\_1 (k6\_toprns\_1 X0 X1) (u1\_struct\_0 \\ & (k15\_euclid X0))) \end{aligned} \quad (13)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (15)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 (k15\_euclid \\ & X0))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers ( \\ & u1\_struct\_0 (k15\_euclid X0))))))) \Rightarrow ((v3\_toprns\_1 X1 X0) \Rightarrow (k6\_toprns\_1 \\ & X0 (k3\_toprns\_1 X0 X1) = k4\_algstr\_0 (k15\_euclid X0) (k6\_toprns\_1 \\ & X0 X1)))) \end{aligned}$$