

t9\_uproots  
(TMHK8CvswH59F61TXPNsrhVWBx2voMpYJGX)

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Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. 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  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k2\_uproots : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $k1\_recdef\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v4\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k15\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $k14\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_poly : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & X0))) \Rightarrow (\forall X2. (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3. \\ & (X3 \in X1) \Rightarrow (k1\_recdef\_1 (k2\_uproots X0 X1 X2) X3 = X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & X0))) \Rightarrow (\forall X2. (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow (\forall X3. \\ & (\neg X3 \in X1) \Rightarrow (k1\_recdef\_1 (k2\_uproots X0 X1 X2) X3 = k6\_numbers))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k1\_funct\_1 (k16\_pre\_poly X0) X1 = k6\_numbers \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ ((\forall X3. (X3 \in X0) \Rightarrow (k1\_funct\_1 X1 X3 = k1\_funct\_1 X2 X3)) \Rightarrow (X1 = \\ X2))) \end{aligned} \quad (5)$$

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.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v4\_valued\_0 \\ X0))) \Rightarrow (k1\_recdef\_1 X0 X1 = k1\_funct\_1 X0 X1) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. k15\_pre\_poly X0 = k14\_pre\_poly X0 \quad (9)$$

Assume the following.

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

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k14\_pre\_poly X0) \quad (11)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (12)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((v1\_finset\_1 X1) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 X0))) \wedge (m1\_subset\_1 X2 k5\_numbers)) \Rightarrow (m2\_subset\_1 \\ (k2\_uproots X0 X1 X2) (k14\_pre\_poly X0) (k15\_pre\_poly X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. m2\_subset\_1 (k16\_pre\_poly X0) (k14\_pre\_poly X0) (k15\_pre\_poly \\ X0) \quad (15)$$

Assume the following.

$$\forall X0.m1\_subset\_1 (k15\_pre\_poly X0) (k1\_zfmisc\_1 (k14\_pre\_poly X0)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_finset\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))\Rightarrow(\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers)\Rightarrow(k2\_uproots X0 X1 X2 = k1\_funct\_4 (k16\_pre\_poly X0) (k8\_funcop\_1 k5\_numbers X1 X2))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k15\_pre\_poly X0)))\Rightarrow(v4\_funct\_1 X1) \quad (18)$$

Assume the following.

$$\forall X0.(v4\_funct\_1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k15\_pre\_poly X0))))\Rightarrow(\forall X2.(m1\_subset\_1 X2 X1)\Rightarrow((v1\_partfun1 X2 X0)\wedge((v4\_valued\_0 X2)\wedge(v2\_pre\_poly X2)))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k15\_pre\_poly X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 X1)\Rightarrow(v4\_relat\_1 X2 X0)) \quad (21)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_finset\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))\Rightarrow(\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers)\Rightarrow((v1\_xboole\_0 X1)\vee(X2 = k6\_numbers))\Rightarrow(k2\_uproots X0 X1 X2 = k16\_pre\_poly X0))$$