

t11_uroots
(TMXtj5QgefKNjMQ8rX9A4mBtDTV8khE3G1R)

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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 $v3_valued_0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $k16_pre_poly : \iota \Rightarrow \iota$ be given. Let $k3_uroots : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k18_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $k6_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_polynom2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_valued_0 : \iota \Rightarrow o$ be given. Let $k13_pre_poly : \iota \Rightarrow \iota$ be given. Let $k15_pre_poly : \iota \Rightarrow \iota$ be given. Let $k14_pre_poly : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_uroots : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$k18_rvsum_1 (k6_finseq_1 k1_numbers) = k6_numbers \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0.k1_polynom2 X0 (k16_pre_poly X0) = k1_xboole_0 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (4)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly \\ & X1)))))) \Rightarrow (k1_polynom2 X0 X1 = k13_pre_poly X1) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. k15_pre_poly\ X0 = k14_pre_poly\ X0 \quad (7)$$

Assume the following.

$$\forall X0. v1_xboole_0\ (k6_finseq_1\ X0) \quad (8)$$

Assume the following.

$$\forall X0. \neg v1_xboole_0\ (k14_pre_poly\ X0) \quad (9)$$

Assume the following.

$$v1_xboole_0\ k1_xboole_0 \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xboole_0\ X0) \wedge (v1_relat_1\ X1)) \Rightarrow ((v1_xboole_0\ (k3_relat_1\ X0\ X1)) \wedge (v1_relat_1\ (k3_relat_1\ X0\ X1))) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2. (m2_subset_1\ X2\ X0\ X1) \Rightarrow (m1_subset_1\ X2\ X0)) \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1\ X1\ X0) \Rightarrow ((v1_relat_1\ X1) \wedge (v1_funct_1\ X1) \wedge (v1_finseq_1\ X1)) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1\ X1) \wedge ((v4_relat_1\ X1\ X0) \wedge (v1_funct_1\ X1) \wedge ((v1_partfun1\ X1\ X0) \wedge ((v3_valued_0\ X1) \wedge (v2_pre_poly\ X1)))))) \Rightarrow (v1_xreal_0\ (k3_uproots\ X0\ X1)) \quad (14)$$

Assume the following.

$$\forall X0. (v1_finset_1\ X0) \Rightarrow (m2_finseq_1\ (k1_uproots\ X0)\ X0) \quad (15)$$

Assume the following.

$$\forall X0. m2_subset_1\ (k16_pre_poly\ X0)\ (k14_pre_poly\ X0)\ (k15_pre_poly\ X0) \quad (16)$$

Assume the following.

$$\forall X0. m1_subset_1\ (k15_pre_poly\ X0)\ (k1_zfmisc_1\ (k14_pre_poly\ X0)) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v3_valued_0 X1) \wedge (v2_pre_poly \\ & X1)))))) \Rightarrow (\forall X2. (v1_xreal_0 X2) \Rightarrow ((X2 = k3_uproots X0 X1) \Leftrightarrow \\ & (\exists X3. (m2_finseq_1 X3 k1_numbers) \wedge ((X2 = k18_rvsum_1 X3) \wedge \\ & (X3 = k3_relat_1 (k1_uproots (k13_pre_poly X1)) X1)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge (v5_relat_1 \\ & X1 X0)) \Rightarrow ((v1_xboole_0 X1) \wedge ((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)))) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1 X1 X0) \Rightarrow (v5_relat_1 X1 X0) \quad (20)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v1_finset_1 X0) \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k15_pre_poly X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 X1) \Rightarrow ((v1_partfun1 \\ & X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly X2)))) \end{aligned} \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v3_valued_0 X1) \wedge (v2_pre_poly \\ & X1)))))) \Rightarrow ((X1 = k16_pre_poly X0) \Rightarrow (k3_uproots X0 X1 = k6_numbers)) \end{aligned}$$