

t18_uniroots
(TMP7QZA4SVzd5ctcooBTqHFGuhbKJgHcTfZ)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v33_algstr_0 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $v4_vectsp_1 : \iota \Rightarrow o$ be given. Let $v5_vectsp_1 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $l6_algstr_0 : \iota \Rightarrow o$ be given. Let $k7_group_1 : \iota \Rightarrow \iota$ be given. Let $k1_uniroots : \iota \Rightarrow \iota$ be given. Let $k21_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $k7_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k7_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l5_algstr_0 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k1_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (\forall X1.(v1_finset_1 X1) \Rightarrow ((r1_tarski X1 X0) \Rightarrow (k5_card_1 (k6_subset_1 X0 X1) = k6_xcmplx_0 (k5_card_1 X0) (k5_card_1 X1)))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.k1_card_1 (k1_tarski X0) = np_1 \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (k7_subset_1 X0 X1 X2 = k4_xboole_0 X1 X2) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (k7_group_1 \\ & X0 = k7_struct_0 X0) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow \\ & (k6_domain_1 X0 X1 = k1_tarski X1) \end{aligned} \quad (9)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.(v1_finset_1 X0) \Rightarrow (k5_card_1 X0 = k1_card_1 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_int_1 X0) \wedge (v1_int_1 X1)) \Rightarrow (k21_binop_2 \\ & X0 X1 = k6_xcmplx_0 X0 X1) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (v1_finset_1 \\ & (u1_struct_0 X0)) \end{aligned} \quad (13)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (k2_struct_0 X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v8_struct_0 \\ X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge \\ ((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 \\ X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow ((\neg v2_struct_0 \\ (k1_uniroots X0)) \wedge ((v8_struct_0 (k1_uniroots X0)) \wedge ((v15_algstr_0 \\ (k1_uniroots X0)) \wedge ((v2_group_1 (k1_uniroots X0)) \wedge (v3_group_1 \\ (k1_uniroots X0)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.v1_finset_1 (k1_tarski X0) \quad (17)$$

Assume the following.

$$\forall X0.((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow ((v7_ordinal1 (k7_struct_0 X0)) \wedge (v1_card_1 (k7_struct_0 X0))) \quad (18)$$

Assume the following.

$$\forall X0.(l6_algstr_0 X0) \Rightarrow ((l2_algstr_0 X0) \wedge (l5_algstr_0 X0)) \quad (19)$$

Assume the following.

$$\forall X0.(l3_algstr_0 X0) \Rightarrow (l1_struct_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m1_subset_1 (k6_domain_1 X0 X1) (k1_zfmisc_1 X0)) \quad (23)$$

Assume the following.

$$\forall X0.(l2_struct_0 X0) \Rightarrow (m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (24)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\ &((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\ &X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow ((\neg v2_struct_0 (k1_uniroots \\ &X0)) \wedge ((v15_algstr_0 (k1_uniroots X0)) \wedge ((v2_group_1 (k1_uniroots \\ &X0)) \wedge ((v3_group_1 (k1_uniroots X0)) \wedge (l3_algstr_0 (k1_uniroots \\ &X0)))))) \end{aligned} \quad (25)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v13_algstr_0 \\ &X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge ((v4_vectsp_1 X0) \wedge \\ &((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 \\ &X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (\forall X1. ((\neg v2_struct_0 \\ &X1) \wedge ((v15_algstr_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 X1) \wedge \\ &l3_algstr_0 X1)))) \Rightarrow ((X1 = k1_uniroots X0) \Leftrightarrow ((u1_struct_0 X1 = \\ &k8_struct_0 X0) \wedge (u2_algstr_0 X1 = k1_realset1 (u2_algstr_0 X0) \\ &(u1_struct_0 X1)))))) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0. (l2_struct_0 X0) \Rightarrow (k8_struct_0 X0 = k7_subset_1 (u1_struct_0 X0) (k2_struct_0 X0) (k1_tarski (k4_struct_0 X0))) \quad (28)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k7_struct_0 X0 = k1_card_1 (u1_struct_0 X0)) \quad (29)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (v1_int_1 X0) \quad (30)$$

Assume the following.

$$\forall X0. (v6_membered X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow (v7_ordinal1 X1)) \quad (31)$$

Theorem 1

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v6_struct_0 X0) \wedge ((v8_struct_0 \\ &X0) \wedge ((v13_algstr_0 X0) \wedge ((v33_algstr_0 X0) \wedge ((v3_group_1 X0) \wedge \\ &((v4_vectsp_1 X0) \wedge ((v5_vectsp_1 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 \\ &X0) \wedge ((v4_rlvect_1 X0) \wedge (l6_algstr_0 X0)))))))))) \Rightarrow (k7_group_1 \\ &(k1_uniroots X0) = k21_binop_2 (k7_group_1 X0) np_1) \end{aligned}$$