

t58_uniroots
(TMRjrC8qHGKhdjhTsP9ZeSSZoQQcKpRaxeg)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_complfld : \iota$ be given. Let $v1_int_1 : \iota \Rightarrow o$ be given. Let $k2_polynom4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_uniroots : \iota \Rightarrow \iota$ be given. Let $r1_int_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k21_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k4_uniroots : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_newton : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ (\forall X1.(v1_int_1 X1) \Rightarrow (\forall X2.(v1_int_1 X2) \Rightarrow (\forall X3. \\ (v1_int_1 X3) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 k1_complfld)) \Rightarrow \\ (((X4 = X3) \wedge ((X1 = k2_polynom4 k1_complfld (k5_uniroots X0) X4) \wedge \\ (X2 = k2_polynom4 k1_complfld (k4_uniroots X0 k1_complfld) X4))) \Rightarrow \\ (r1_int_1 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\ (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow (\exists X2.(m1_subset_1 \\ X2 (u1_struct_0 k1_complfld)) \wedge ((X2 = X1) \wedge (k2_polynom4 k1_complfld \\ (k4_uniroots X0 k1_complfld) X2 = k10_binop_2 (k2_newton X1 X0) \\ np_1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(k2_newton X0 X1 = k1_newton X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 X0)\wedge(v1_int_1 X1))\Rightarrow(k21_binop_2 X0 X1 = k6_xcmplx_0 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(m1_subset_1 X1 k5_numbers))\Rightarrow(k13_newton X0 X1 = k1_newton X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(k10_binop_2 X0 X1 = k6_xcmplx_0 X0 X1) \quad (9)$$

Assume the following.

$$\neg v1_finset_1 k4_ordinal1 \quad (10)$$

Assume the following.

$$v6_membered k4_ordinal1 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 X0)\wedge(v1_int_1 X1))\Rightarrow(v1_int_1 (k6_xcmplx_0 X0 X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_int_1 X0)\wedge(v7_ordinal1 X1))\Rightarrow(v1_int_1 (k1_newton X0 X1)) \quad (13)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge (m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \quad (15)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (16)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow(v1_xreal_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(v1_int_1 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(v1_finset_1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v6_membered X0)\Rightarrow(\forall X1.(m1_subset_1 X1 X0)\Rightarrow (v7_ordinal1 X1)) \quad (20)$$

Theorem 1

$$\begin{aligned} &\forall X0.((\neg v1_xboole_0 X0)\wedge(m2_subset_1 X0 k1_numbers k5_numbers))\Rightarrow \\ &(\forall X1.((\neg v1_xboole_0 X1)\wedge(m2_subset_1 X1 k1_numbers k5_numbers))\Rightarrow \\ &(\forall X2.(m1_subset_1 X2 (u1_struct_0 k1_complfld))\Rightarrow((X2 = \\ &X1)\Rightarrow(\forall X3.(v1_int_1 X3)\Rightarrow((X3 = k2_polynom4 k1_complfld \\ &(k5_uniroots X0) X2)\Rightarrow(r1_int_1 X3 (k21_binop_2 (k13_newton X1 \\ &X0) np_1)))))) \end{aligned}$$