t59_uniroots (TMJebsfEZUsWzdeB5fY3ShP5NujEouB6Scc)

October 27, 2020

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 $r1\_nat\_d : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k5\_int\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v6\_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers)) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers)) \Rightarrow (\forall X2.(v1\_int\_1\ X2) \Rightarrow ((r1\_nat\_d\ X1\ X0) \Rightarrow ((r1\_xxreal\_0\ X0\ X1) \vee (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ k1\_complfld)) \Rightarrow ((X3 = X2) \Rightarrow (\forall X4.(v1\_int\_1\ X4) \Rightarrow (\forall X5.(v1\_int\_1\ X5) \Rightarrow (\forall X6.(v1\_int\_1\ X6) \Rightarrow (((X4 = k2\_polynom4\ k1\_complfld\ (k5\_uniroots\ X0)\ X3) \wedge ((X5 = k2\_polynom4\ k1\_complfld\ (k4\_uniroots\ X0\ k1\_complfld)\ X3) \wedge (X6 = k2\_polynom4\ k1\_complfld\ (k4\_uniroots\ X1\ k1\_complfld)\ X3))) \Rightarrow (r1\_int\_1\ X4\ (k5\_int\_1\ X5\ X6))))))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers)) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ k1\_complfld)) \Rightarrow ((v1\_int\_1\ X1) \Rightarrow (v1\_int\_1\ (k2\_polynom4\ k1\_complfld\ (k4\_uniroots\ X0\ k1\_complfld)\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers))\Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow(\exists X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ k1\_complfld))\wedge((X2 = X1)\wedge(k2\_polynom4\ k1\_complfld\ (k4\_uniroots\ X0\ k1\_complfld)\ X2 = k10\_binop\_2\ (k2\_newton\ X1\ X0)\ np\_\_1))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1)\Rightarrow(m1\_subset\_1\ X0\ X1) \tag{4}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1)\wedge(m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{5}$$

Assume the following.

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

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers)\wedge(v7\_ordinal1\ X1))\Rightarrow(k2\_newton\ X0\ X1 = k1\_newton\ X0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_int\_1\ X0)\wedge(v1\_int\_1\ X1))\Rightarrow(k21\_binop\_2\ X0\ X1 = k6\_xcmplx\_0\ X0\ X1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k5\_numbers)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow(k13\_newton\ X0\ X1 = k1\_newton\ X0\ X1) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0)\wedge(v1\_xreal\_0\ X1))\Rightarrow(k10\_binop\_2\ X0\ X1 = k6\_xcmplx\_0\ X0\ X1) \tag{11}$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \tag{12}$$

Assume the following.

$$v6\_membered\ k4\_ordinal1 \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_int\_1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow(v1\_int\_1\ (k1\_newton\ X0\ X1)) \tag{14}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \tag{16}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{17}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Leftrightarrow(X0\in k4\_ordinal1) \tag{18}$$

Assume the following.

$$\forall X0.(v1\_int\_1\ X0)\Rightarrow(v1\_xreal\_0\ X0) \tag{19}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_int\_1\ X0) \tag{20}$$

Assume the following.

$$\forall X0.(v6\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v7\_ordinal1\ X1)) \tag{21}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge(m2\_subset\_1\ X2\ k1\_numbers\ k5\_numbers))\Rightarrow((r1\_nat\_d\ X1\ X0)\Rightarrow((r1\_xxreal\_0\ X0\ X1)\vee(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ k1\_complfld))\Rightarrow((X3=X2)\Rightarrow(\forall X4.(v1\_int\_1\ X4)\Rightarrow((X4=k2\_polynom4\ k1\_complfld\ (k5\_uniroots\ X0)\ X3)\Rightarrow(r1\_int\_1\ X4\ (k5\_int\_1\ (k21\_binop\_2\ (k13\_newton\ X2\ X0)\ np\_\_1)\ (k21\_binop\_2\ (k13\_newton\ X2\ X1)\ np\_\_1))))))))))$$