

# l45\_uniroots

(TMS8MjBJ1uDuu2mbgmFAs3avEE3Mtj8j6N1)

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Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_complfld : \iota$  be given. Let  $k4\_uniroots : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k4\_polynom5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_group\_1 : \iota \Rightarrow \iota$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  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  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_algseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_polynom3 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (1)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_1 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 \ X2) \wedge \\ & ((v1\_funct\_2 \ X2 \ X0 \ X1) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & \ X0 \ X1)))))) \wedge ((v1\_funct\_1 \ X3) \wedge ((v1\_funct\_2 \ X3 \ X0 \ X1) \wedge (m1\_subset\_1 \\ & \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1)))))) \Rightarrow (r2\_funct\_2 \ X0 \ X1 \ X2 \ X2) \end{aligned} \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_vectsp\_1 X0) \wedge (l4\_algstr\_0 X0))) \Rightarrow (k1\_group\_1 X0 = k5\_struct\_0 X0) \quad (5)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (6)$$

Assume the following.

$$\begin{aligned} & (\neg v6\_struct\_0 k1\_complfld) \wedge ((v13\_algstr\_0 k1\_complfld) \wedge (( \\ & v33\_algstr\_0 k1\_complfld) \wedge ((v36\_algstr\_0 k1\_complfld) \wedge ((v3\_group\_1 \\ & k1\_complfld) \wedge ((v5\_group\_1 k1\_complfld) \wedge ((v3\_vectsp\_1 k1\_complfld) \wedge \\ & ((v5\_vectsp\_1 k1\_complfld) \wedge ((v6\_vectsp\_1 k1\_complfld) \wedge ((v2\_rlvect\_1 \\ & k1\_complfld) \wedge ((v3\_rlvect\_1 k1\_complfld) \wedge (v4\_rlvect\_1 k1\_complfld)))))))))) \quad (7) \end{aligned}$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (v4\_vectsp\_1 k1\_complfld) \quad (8)$$

Assume the following.

$$(\neg v2\_struct\_0 k1\_complfld) \wedge (v36\_algstr\_0 k1\_complfld) \quad (9)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l3\_struct\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k5\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X0)) \wedge \\ & ((\neg v2\_struct\_0 X1) \wedge ((v6\_vectsp\_1 X1) \wedge (l6\_algstr\_0 X1)))) \Rightarrow ( \\ & (v1\_funct\_1 (k4\_uniroots X0 X1)) \wedge ((v1\_funct\_2 (k4\_uniroots X0 \\ & X1) k5\_numbers (u1\_struct\_0 X1)) \wedge ((v1\_algseq\_1 (k4\_uniroots \\ & X0 X1) X1) \wedge (m1\_subset\_1 (k4\_uniroots X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers (u1\_struct\_0 X1))))))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((l2\_algstr\_0 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (16)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (l6\_algstr\_0 k1\_complfld) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge ((v6\_vectsp\_1 X1) \wedge (l6\_algstr\_0 X1))) \Rightarrow (k4\_uniroots \\ & X0 X1 = k15\_funct\_7 k5\_numbers (u1\_struct\_0 X1) (k15\_funct\_7 k5\_numbers \\ & (u1\_struct\_0 X1) (k9\_polynom3 X1) k6\_numbers (k4\_algstr\_0 X1 ( \\ & k1\_group\_1 X1))) X0 (k1\_group\_1 X1))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_struct\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow (k4\_polynom5 X0 X1 X2 = k15\_funct\_7 k5\_numbers \\ & (u1\_struct\_0 X0) (k15\_funct\_7 k5\_numbers (u1\_struct\_0 X0) (k9\_polynom3 \\ & X0) k6\_numbers X1) np\_1 X2))) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0. (v6\_membered X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \quad (20)$$

**Theorem 1**

$$\begin{aligned} & r2\_funct\_2 k5\_numbers (u1\_struct\_0 k1\_complfld) (k4\_uniroots \\ & np\_1 k1\_complfld) (k4\_polynom5 k1\_complfld (k4\_algstr\_0 k1\_complfld \\ & (k1\_group\_1 k1\_complfld)) (k1\_group\_1 k1\_complfld)) \end{aligned}$$