

## t22\_uniroots

(TMJFhv3KcW4RgzZw6Uo6eEiqdPLSbeRgy2M)

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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  $k1\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_complfld : \iota$  be given. Let  $k2\_uniroots : \iota \Rightarrow \iota$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_comptrig : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_complfld : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k6\_complex1 : \iota$  be given. Let  $k2\_numbers : \iota$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k27\_binop\_2 : \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k29\_binop\_2 : \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow & (k1\_group\_1 \\ k1\_complfld = k2\_binop\_1 (u1\_struct\_0 k1\_complfld) k5\_numbers & \\ (u1\_struct\_0 k1\_complfld) (k4\_group\_1 k1\_complfld) (k1\_group\_1 & \\ k1\_complfld) X0) & \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow & \\ (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((X1 \in & \\ k2\_uniroots X0) \Leftrightarrow (m1\_comptrig X1 (k1\_group\_1 k1\_complfld) X0))) & \end{aligned} \quad (2)$$

Assume the following.

$$np\_1 = k1\_group\_1 k1\_complfld \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge & \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 & \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) & \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \wedge \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 k5\_numbers))) \Rightarrow (\forall X2. \\ & (m1\_complfld X2 X0 X1) \Leftrightarrow (m1\_comptrig X2 X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (7)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (8)$$

Assume the following.

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

Assume the following.

$$m1\_subset\_1 k6\_complex1 k2\_numbers \quad (10)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (11)$$

Assume the following.

$$(v36\_algstr\_0 k1\_complfld) \wedge (l6\_algstr\_0 k1\_complfld) \quad (12)$$

Assume the following.

$$k6\_complex1 = np\_1 \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 (u1\_struct\_0 k1\_complfld)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m2\_subset\_1 X1 k1\_numbers k5\_numbers)) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 k1\_complfld)) \Rightarrow ((m1\_complfld \\ & X2 X0 X1) \Leftrightarrow (k2\_binop\_1 (u1\_struct\_0 k1\_complfld) k5\_numbers (u1\_struct\_0 \\ & k1\_complfld) (k4\_group\_1 k1\_complfld) X2 X1 = X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v36\_algstr\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow ((X0 = k1\_complfld) \Leftrightarrow \\ & ((u1\_struct\_0 X0 = k2\_numbers) \wedge ((u1\_algstr\_0 X0 = k27\_binop\_2) \wedge \\ & ((u2\_algstr\_0 X0 = k29\_binop\_2) \wedge ((k5\_struct\_0 X0 = k6\_complex1) \wedge \\ & (k4\_struct\_0 X0 = k5\_complex1)))))) \end{aligned} \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\ & (k1\_group\_1 k1\_complfld \in k2\_uniroots X0) \end{aligned}$$