

t74_trees_3
(TMcJSSrejp6gafsRhPX9yY9ng5R68jci2oq)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_trees_1 : \iota \Rightarrow o$ be given. Let $k4_trees_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v4_trees_3 : \iota \Rightarrow o$ be given. Let $k2_trees_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_trees_3 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k4_ordinal1 : \iota$ 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 $np_0 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & ((v4_trees_3 X0) \Rightarrow ((k2_trees_2 (k11_trees_3 X0) np_1 = ReplSep \\ & \quad (toiset (\lambda X1 : \iota. m1_subset_1 X1 k5_numbers)) (\lambda X1 : \iota. \\ & \neg r1_xxreal_0 (k3_finseq_1 X0) X1) (\lambda X1 : \iota. k12_finseq_1 k5_numbers \\ & \quad X1)) \wedge (\forall X1.(m1_subset_1 X1 k5_numbers) \Rightarrow ((\neg r1_xxreal_0 \\ & \quad (k3_finseq_1 X0) X1) \Rightarrow (k4_trees_1 (k11_trees_3 X0) (k12_finseq_1 \\ & \quad k5_numbers X1) = k1_funct_1 X0 (k2_nat_1 X1 np_1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 \\ & X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((X2 = k10_finseq_1 X0 X1) \Leftrightarrow ((k3_finseq_1 \\ & X2 = np_2) \wedge ((k1_funct_1 X2 np_1 = X0) \wedge (k1_funct_1 X2 np_2 = X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$m1_subset_1 k1_xboole_0 k4_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$v1_xboole_0 \ np_0 \quad (6)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ np_1 = np_2 \quad (7)$$

Assume the following.

$$k2_xcmplx_0 \ np_1 \ np_0 = np_1 \quad (8)$$

Assume the following.

$$\neg r1_xxreal_0 \ np_2 \ np_1 \quad (9)$$

Assume the following.

$$\neg r1_xxreal_0 \ np_2 \ np_0 \quad (10)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (11)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 \ X0 \ k5_numbers) \wedge (v7_ordinal1 \\ & \ X1)) \Rightarrow (k2_nat_1 \ X0 \ X1 = k2_xcmplx_0 \ X0 \ X1) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1_relat_1 \ (k10_finseq_1 \ X0 \ X1)) \wedge (v1_funct_1 \\ & \ (k10_finseq_1 \ X0 \ X1)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 \ X0) \wedge (v1_trees_1 \ X0)) \wedge \\ & ((\neg v1_xboole_0 \ X1) \wedge (v1_trees_1 \ X1))) \Rightarrow ((\neg v1_xboole_0 \ (k10_finseq_1 \\ & \ X0 \ X1)) \wedge (v4_trees_3 \ (k10_finseq_1 \ X0 \ X1))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. v1_finseq_1 \ (k10_finseq_1 \ X0 \ X1) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_trees_1 X1)) \Rightarrow (k13_trees_3 X0 X1 = k11_trees_3 \\ & (k10_finseq_1 X0 X1))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_nat_1 X1 X0) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (19)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_trees_1 X1)) \Rightarrow ((k4_trees_1 (k13_trees_3 \\ & X0 X1) (k12_finseq_1 k5_numbers k6_numbers) = X0) \wedge (k4_trees_1 \\ & (k13_trees_3 X0 X1) (k12_finseq_1 k5_numbers np_1) = X1))) \end{aligned}$$