

t12_trees_4 (TM-
cKcd61XE2hZHqS5DU3xxEqWCvhY8YYcqs)

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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 $v6_trees_3 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v3_trees_2 : \iota \Rightarrow o$ be given. Let $m1_trees_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ 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 $np_1 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_trees_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_trees_1 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_trees_3 : \iota \Rightarrow \iota$ be given. Let $k2_funct_6 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k5_trees_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_trees_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. (m1_trees_1 X1 X0) \Leftrightarrow (m1_subset_1 X1 X0)) \quad (2)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (3)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (4)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_trees_2 X0))) \Rightarrow ((\neg v1_xboole_0 (k9_xtuple_0 X0)) \wedge (v1_trees_1 (k9_xtuple_0 X0))) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. (m1_trees_1 X1 X0) \Rightarrow (m2_finseq_1 X1 k5_numbers)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow ((v1_relat_1 (k4_trees_4 X0 X1)) \wedge ((v1_funct_1 (k4_trees_4 X0 X1)) \wedge (v3_trees_2 (k4_trees_4 X0 X1)))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m2_finseq_1 (k12_finseq_1 X0 X1) X0) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow ((v6_trees_3 X1) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v3_trees_2 X2)))) \Rightarrow ((X2 = k4_trees_4 X0 X1) \Leftrightarrow ((\exists X3. (v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge ((v1_finseq_1 X3) \wedge (v6_trees_3 X3)))) \wedge ((X1 = X3) \wedge (k9_xtuple_0 X2 = k11_trees_3 (k2_funct_6 X3)))) \wedge ((k1_funct_1 X2 k1_xboole_0 = X0) \wedge (\forall X3. (m1_subset_1 X3 k5_numbers) \Rightarrow ((\neg r1_xreal_0 (k3_finseq_1 X1) X3) \Rightarrow (k5_trees_2 X2 (k12_finseq_1 k5_numbers X3) = k1_funct_1 X1 (k2_nat_1 X3 np_1)))))))))) \quad (9) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_trees_2 X0))) \Rightarrow (\forall X1. (m2_finseq_1 X1 k5_numbers) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v3_trees_2 X2)))) \Rightarrow ((X2 = k5_trees_2 X0 X1) \Leftrightarrow ((k9_xtuple_0 X2 = k4_trees_1 (k9_xtuple_0 X0) X1) \wedge (\forall X3. (m2_finseq_1 X3 k5_numbers) \Rightarrow ((X3 \in k4_trees_1 (k9_xtuple_0 X0) X1) \Rightarrow (k1_funct_1 X2 X3 = k1_funct_1 X0 (k8_finseq_1 k5_numbers X1 X3)))))))))) \quad (10) \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge ((v1_finseq_1 X1) \wedge (v6_trees_3 X1)))) \Rightarrow (\forall X2. (m1_subset_1 X2 k5_numbers) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v1_funct_1 X3) \wedge (v3_trees_2 X3)))) \Rightarrow (\forall X4. (m1_trees_1 X4 (k9_xtuple_0 X3)) \Rightarrow ((X3 = k1_funct_1 X1 (k2_nat_1 X2 np_1)) \Rightarrow ((r1_xreal_0 (k3_finseq_1 X1) X2) \vee (k1_funct_1 (k4_trees_4 X0 X1) (k8_finseq_1 k5_numbers (k12_finseq_1 k5_numbers X2) X4) = k1_funct_1 X3 X4)))))) \end{aligned}$$