

t69_trees_3

(TMda5LfWMjNg7U33Dg8WBqAMKDixM62M6NS)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_trees_1 : \iota \Rightarrow o$ 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 $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k13_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v4_trees_3 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k11_trees_3 : \iota \Rightarrow \iota$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_trees_3 : \iota \Rightarrow o$ be given. Let $v2_trees_3 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_trees_3 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1) \wedge (v4_trees_3 X1)))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge ((v1_finseq_1 X2) \wedge (v4_trees_3 X2)))) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge (v1_trees_1 X3)) \Rightarrow ((X0 \in X3) \Leftrightarrow (k7_finseq_1 (k12_finseq_1 k5_numbers (k3_finseq_1 X1)) X0 \in k11_trees_3 (k7_finseq_1 (k7_finseq_1 X1 (k9_finseq_1 X3)) X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow ((k7_finseq_1 X0 k1_xboole_0 = X0) \wedge (k7_finseq_1 k1_xboole_0 X0 = X0)) \quad (3)$$

Assume the following.

$$\forall X0.k9_finseq_1 X0 = k5_finseq_1 X0 \quad (4)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k3_finseq_1 X0 = k1_card_1 X0) \quad (6)$$

Assume the following.

$$\forall X0. \exists X1. (m1_finseq_1 X1 X0) \wedge ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k5_numbers) \wedge ((v5_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge ((v1_xboole_0 X1) \wedge ((v1_finset_1 X1) \wedge (v1_finseq_1 X1))))))) \quad (7)$$

Assume the following.

$$\exists X0. (\neg v1_xboole_0 X0) \wedge ((v1_finset_1 X0) \wedge ((v1_trees_3 X0) \wedge (v2_trees_3 X0))) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. \exists X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge ((v1_xboole_0 X2) \wedge ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)))) \quad (9)$$

Assume the following.

$$\forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow ((\neg v1_xboole_0 (k5_finseq_1 X0)) \wedge (v4_trees_3 (k5_finseq_1 X0))) \quad (10)$$

Assume the following.

$$\forall X0. v1_finseq_1 (k5_finseq_1 X0) \quad (11)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow ((v1_xboole_0 (k1_card_1 X0)) \wedge (v1_card_1 (k1_card_1 X0))) \quad (12)$$

Assume the following.

$$\forall X0. (v1_relat_1 (k9_finseq_1 X0)) \wedge (v1_funct_1 (k9_finseq_1 X0)) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. k10_finseq_1 X0 X1 = k7_finseq_1 (k9_finseq_1 X0) (k9_finseq_1 X1) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_trees_1 X1)) \Rightarrow (k13_trees_3 X0 X1 = k11_trees_3 \\ & (k10_finseq_1 X0 X1))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v2_trees_3 X0)) \Rightarrow (\forall X1. \\ & (m1_finseq_1 X1 X0) \Rightarrow (v5_trees_3 X1)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v5_trees_3 X0))) \Rightarrow \\ & ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v4_trees_3 X0))) \end{aligned} \quad (17)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_trees_1 X1)) \Rightarrow (\forall X2.((v1_relat_1 \\ & X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((X2 \in X0) \Leftrightarrow (k7_finseq_1 \\ & (k12_finseq_1 k5_numbers k6_numbers) X2 \in k13_trees_3 X0 X1)))) \end{aligned}$$