

t16_trees_4 (TMUBst- BEGzUP7BGaH8KwnbEZTXuVZMQNXVk)

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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 $k1_trees_4 : \iota \Rightarrow \iota$ be given. Let $k3_trees_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_trees_1 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_trees_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 \\ & X2) \wedge (v1_finseq_1 X2))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v1_funct_1 \\ & X3) \wedge (v1_finseq_1 X3))) \Rightarrow ((k3_trees_4 X0 X2 = k3_trees_4 X1 X3) \Rightarrow \\ & ((X0 = X1) \wedge (X2 = X3)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (k9_xtuple_0 (k1_trees_4 X0) = k2_trees_1 k6_numbers) \wedge (k1_funct_1 (k1_trees_4 X0) k1_xboole_0 = X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1. ((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (((k9_xtuple_0 X0 = k9_xtuple_0 \\ & X1) \wedge (\forall X2. (X2 \in k9_xtuple_0 X0) \Rightarrow (k1_funct_1 X0 X2 = k1_funct_1 \\ & X1 X2))) \Rightarrow (X0 = X1))) \end{aligned} \tag{3}$$

Assume the following.

$$k2_trees_1 k6_numbers = k1_tarski k1_xboole_0 \tag{4}$$

Assume the following.

$$k6_numbers = k1_xboole_0 \tag{5}$$

Assume the following.

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

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow ((X0 = k1_xboole_0) \Leftrightarrow (k3_finseq_1 X0 = k6_numbers)) \quad (7)$$

Assume the following.

$$v1_xboole_0 \quad k1_xboole_0 \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow ((v1_relat_1 (k3_trees_4 X0 X1)) \wedge ((v1_funct_1 (k3_trees_4 X0 X1)) \wedge (v3_trees_2 (k3_trees_4 X0 X1)))) \quad (9)$$

Assume the following.

$$\forall X0. (v1_relat_1 (k1_trees_4 X0)) \wedge ((v1_funct_1 (k1_trees_4 X0)) \wedge (v3_trees_2 (k1_trees_4 X0))) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v3_trees_2 X2))) \Rightarrow ((X2 = k3_trees_4 X0 X1) \Leftrightarrow ((k9_xtuple_0 X2 = k2_trees_1 (k3_finseq_1 X1)) \wedge ((k1_funct_1 X2 \quad k1_xboole_0 = X0) \wedge (\forall X3. (m1_subset_1 X3 \quad k5_numbers) \Rightarrow ((\neg r1_xxreal_0 (k3_finseq_1 X1) X3) \Rightarrow (k1_funct_1 X2 (k12_finseq_1 k5_numbers X3) = k1_funct_1 X1 (k2_nat_1 X3 \quad np_1)))))))))) \quad (11) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (12)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v1_relat_1 X0) \quad (13)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v1_funct_1 X0) \quad (14)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v1_xboole_0 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v1_finseq_1 X0)) \quad (15)$$

Theorem 1

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((k1_trees_4 X0 = k3_trees_4 X1 X2) \Rightarrow ((X0 = X1) \wedge (X2 = k1_xboole_0)))$$