

t24_trees_4

(TMEh24TobeMDtYBPEhtJMgDHCyyR2xuSsJW)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v3_trees_2 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k8_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_trees_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.(v1_relat_1 X1) \Rightarrow ((r1_tarski \\ (k10_xtuple_0 X0) (k9_xtuple_0 X1)) \Rightarrow (k9_xtuple_0 (k3_relat_1 \\ X0 X1) = k9_xtuple_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow \\ (k7_trees_3 X0 X1 = k8_funct_3 X0 X1) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow \\ (k6_trees_3 X0 X1 = k7_funct_3 X0 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (\\ k1_relset_1 X0 X1 = k9_xtuple_0 X1) \end{aligned} \quad (4)$$

Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(v1_relat_1 (k8_funct_3 X0 X1)) \wedge (v1_funct_1 \\ (k8_funct_3 X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow \\ & ((v1_funct_1 (k7_trees_3 X0 X1))\wedge((v1_funct_2 (k7_trees_3 X0 \\ & X1) (k2_zfmisc_1 X0 X1) X1)\wedge(m1_subset_1 (k7_trees_3 X0 X1) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 (k7_funct_3 X0 X1))\wedge(v1_funct_1 (k7_funct_3 X0 X1)) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(\neg v1_xboole_0 X1))\Rightarrow \\ & ((v1_funct_1 (k6_trees_3 X0 X1))\wedge((v1_funct_2 (k6_trees_3 X0 \\ & X1) (k2_zfmisc_1 X0 X1) X0)\wedge(m1_subset_1 (k6_trees_3 X0 X1) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow(((X1\neq k1_xboole_0)\Rightarrow((v1_funct_2 X2 X0 \\ & X1)\Leftrightarrow(X0 = k1_relset_1 X0 X2)))\wedge((X1 = k1_xboole_0)\Rightarrow((v1_funct_2 \\ & X2 X0 X1)\Leftrightarrow(X2 = k1_xboole_0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 X1)\Rightarrow((v5_relat_1 X1 X0)\Leftrightarrow(r1_tarski (k10_xtuple_0 X1) X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow \\ & (\forall X2.((v1_relat_1 X2)\wedge((v5_relat_1 X2 (k2_zfmisc_1 X0 \\ & X1))\wedge((v1_funct_1 X2)\wedge(v3_trees_2 X2))))\Rightarrow(k9_trees_3 X0 X1 X2 = \\ & k3_relat_1 X2 (k7_trees_3 X0 X1)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow \\ & (\forall X2.((v1_relat_1 X2)\wedge((v5_relat_1 X2 (k2_zfmisc_1 X0 \\ & X1))\wedge((v1_funct_1 X2)\wedge(v3_trees_2 X2))))\Rightarrow(k8_trees_3 X0 X1 X2 = \\ & k3_relat_1 X2 (k6_trees_3 X0 X1)))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow((v4_relat_1 X2 X0)\wedge(v5_relat_1 X2 X1)) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.((v1_relat_1 X2) \wedge ((v5_relat_1 X2 (k2_zfmisc_1 X0 \\ & X1)) \wedge ((v1_funct_1 X2) \wedge (v3_trees_2 X2)))) \Rightarrow ((k9_xtuple_0 (k8_trees_3 \\ & X0 X1 X2) = k9_xtuple_0 X2) \wedge (k9_xtuple_0 (k9_trees_3 X0 X1 X2) = k9_xtuple_0 \\ & X2)))) \end{aligned}$$