

t22_trees_2 (TMFd- kYuckw87WTJTdew2o1FEgjWQYKgiRRp)

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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 $m1_trees_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_trees_1 : \iota \Rightarrow \iota$ be given. Let $r2_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & X1))) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 \\ & X2))) \Rightarrow (((r2_xboole_0 X0 X2) \wedge (r1_tarski X1 X2)) \Rightarrow (r3_xboole_0 \\ & X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_trees_1 X0)) \Rightarrow (\forall X1. \\ & ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow (\forall X3. \\ & (m1_trees_2 X3 X0) \Rightarrow (\neg (X1 \in X3) \wedge ((X2 \in X3) \wedge ((\neg X1 \in k1_trees_1 X2) \wedge \\ & (\neg r1_tarski X2 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_tarski X1 X2)) \Rightarrow (r1_tarski X0 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & X1))) \Rightarrow ((X0 \in k1_trees_1 X1) \Leftrightarrow (r2_xboole_0 X0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (\neg (\neg r2_xboole_0 X0 X1) \wedge ((X0 \neq X1) \wedge (\neg r2_xboole_0 X1 X0))) \Leftrightarrow (r3_xboole_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r2_xboole_0 X0 X1)\Leftrightarrow((r1_tarski X0 X1)\wedge (X0\neq X1)) \quad (6)$$

Theorem 1

$$\begin{aligned} &\forall X0.((\neg v1_xboole_0 X0)\wedge(v1_trees_1 X0))\Rightarrow(\forall X1. \\ &((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1)))\Rightarrow(\forall X2. \\ &((v1_relat_1 X2)\wedge((v1_funct_1 X2)\wedge(v1_finseq_1 X2)))\Rightarrow(\forall X3. \\ &((v1_relat_1 X3)\wedge((v1_funct_1 X3)\wedge(v1_finseq_1 X3)))\Rightarrow(\forall X4. \\ &(m1_trees_2 X4 X0)\Rightarrow(\neg(X1 \in X4)\wedge((X2 \in X4)\wedge((r1_tarski X3 X2)\wedge((\\ &\neg X1 \in k1_trees_1 X3)\wedge(\neg r1_tarski X3 X1)))))))))) \end{aligned}$$