t40_trees_1 (TMK3RxVWFHJhJfqyz3s5Q26z3guXfhyCvEY)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_trees\_1 : \iota \Rightarrow o$ be given. Let $m1\_trees\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m4\_trees\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ 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 $v2\_trees\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ (k1\_tarski\ X0)\ (k2\_tarski\ X0\ X1) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_trees\_1\ X0)) \Rightarrow (\forall X1.\ (m1\_trees\_1\ X1\ X0) \Rightarrow (m4\_trees\_1\ (k1\_tarski\ X1)\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \Rightarrow ((\neg r3\_xboole\_0\ X0\ X1) \Rightarrow (v2\_trees\_1\ (k2\_tarski\ X0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(r1\_tarski\ (k2\_tarski\ X0\ X1)\ X2) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X2)) \tag{4}$$

Assume the following.

$$\forall X0.k2\_tarski\ X0\ X0 = k1\_tarski\ X0 \tag{5}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_trees\_1\ X0)) \Rightarrow (\forall X1.\ (m4\_trees\_1\ X1\ X0) \Rightarrow (v2\_trees\_1\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_trees\_1\ X0)) \Rightarrow (\forall X1.\ (v2\_trees\_1\ X1) \Rightarrow ((m4\_trees\_1\ X1\ X0) \Leftrightarrow (r1\_tarski\ X1\ X0))) \tag{7}$$

Assume the following.

$$\forall X0.(v2\_trees\_1\ X0)\Leftrightarrow((\forall X1.(X1 \in X0)\Rightarrow((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1))))\wedge(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\Rightarrow(\neg(X1 \in X0)\wedge((X2 \in X0)\wedge((X1 \neq X2)\wedge(r3\_xboole\_0\ X1\ X2))))))) \tag{8}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_trees\_1\ X0))\Rightarrow(\forall X1.(m1\_trees\_1\ X1\ X0)\Rightarrow(\forall X2.(m1\_trees\_1\ X2\ X0)\Rightarrow((\neg r3\_xboole\_0\ X1\ X2)\Rightarrow(m4\_trees\_1\ (k2\_tarski\ X1\ X2)\ X0))))$$