t13_trees_9 (TMQvJCmRe2WFEyHUNojSFkjRiRy9V35HVBp)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v3\_trees\_2 : \iota \Rightarrow o$ be given. Let $m1\_trees\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_trees\_9 : \iota \Rightarrow \iota$ be given. Let $k5\_trees\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k8\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_trees\_1 : \iota \Rightarrow o$ be given. Let $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_ordinal1 : \iota$ be given. Let $k4\_trees\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v3\_trees\_2\ X0))) \Rightarrow (\forall X1.(m2\_finseq\_1\ X1\ k5\_numbers) \Rightarrow (\forall X2.(m2\_finseq\_1\ X2\ k5\_numbers) \Rightarrow ((k8\_finseq\_1\ k5\_numbers\ X1\ X2 \in k9\_xtuple\_0\ X0) \Rightarrow (k5\_trees\_2\ X0\ (k8\_finseq\_1\ k5\_numbers\ X1\ X2) = k5\_trees\_2\ (k5\_trees\_2\ X0\ X1)\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_trees\_1\ X0)) \Rightarrow (\forall X1.(m1\_trees\_1\ X1\ X0) \Leftrightarrow (m1\_subset\_1\ X1\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1\ X1\ X0) \wedge (m1\_finseq\_1\ X2\ X0)) \Rightarrow (k8\_finseq\_1\ X0\ X1\ X2 = k7\_finseq\_1\ X1\ X2) \tag{6}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_trees\_2\ X0)))\Rightarrow ((\neg v1\_xboole\_0\ (k9\_xtuple\_0\ X0))\wedge(v1\_trees\_1\ (k9\_xtuple\_0\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_trees\_1\ X0))\Rightarrow(\forall X1.\ (m1\_trees\_1\ X1\ X0)\Rightarrow(m2\_finseq\_1\ X1\ k5\_numbers)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_trees\_2\ X0)))\wedge(m1\_finseq\_1\ X1\ k5\_numbers))\Rightarrow((v1\_relat\_1\ (k5\_trees\_2\ X0\ X1))\wedge((v1\_funct\_1\ (k5\_trees\_2\ X0\ X1))\wedge(v3\_trees\_2\ (k5\_trees\_2\ X0\ X1)))) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_trees\_2\ X0)))\Rightarrow (k3\_trees\_9\ X0 = ReplSep\ (toset\ (\lambda X1 : \iota.m1\_trees\_1\ X1\ (k9\_xtuple\_0\ X0)))\ (\lambda X1 : \iota.True)\ (\lambda X1 : \iota.k5\_trees\_2\ X0\ X1)) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_trees\_1\ X0))\Rightarrow(\forall X1.\ (m2\_finseq\_1\ X1\ k5\_numbers)\Rightarrow((X1\in X0)\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge(v1\_trees\_1\ X2))\Rightarrow((X2 = k4\_trees\_1\ X0\ X1)\Leftrightarrow(\forall X3.(m2\_finseq\_1\ X3\ k5\_numbers)\Rightarrow((X3\in X2)\Leftrightarrow(k8\_finseq\_1\ k5\_numbers\ X1\ X3\in X0))))))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2\in X0)\Rightarrow (X2\in X1)) \tag{13}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_trees\_2\ X0)))\Rightarrow (\forall X1.(m2\_finseq\_1\ X1\ k5\_numbers)\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v3\_trees\_2\ X2)))\Rightarrow((X2 = k5\_trees\_2\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k4\_trees\_1\ (k9\_xtuple\_0\ X0)\ X1)\wedge(\forall X3.\ (m2\_finseq\_1\ X3\ k5\_numbers)\Rightarrow((X3\in k4\_trees\_1\ (k9\_xtuple\_0\ X0)\ X1)\Rightarrow(k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X0\ (k8\_finseq\_1\ k5\_numbers\ X1\ X3))))))))) \tag{14}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_trees\_2\ X0)))\Rightarrow (\forall X1.(m1\_trees\_1\ X1\ (k9\_xtuple\_0\ X0))\Rightarrow(r1\_tarski\ (k3\_trees\_9\ (k5\_trees\_2\ X0\ X1))\ (k3\_trees\_9\ X0)))$$