t17_trees_4 (TMc6C8QayZDyqiSCn1atP22BtMdJhggCdPX)

October 27, 2020

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 $k4\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6\_trees\_3 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k11\_trees\_3 : \iota \Rightarrow \iota$ be given. Let $k2\_trees\_1 : \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $v4\_trees\_3 : \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_funct\_6 : \iota \Rightarrow \iota$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v3\_trees\_2 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_trees\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5\_trees\_3 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{1}$$

Assume the following.

$$k11\_trees\_3\ k1\_xboole\_0 = k2\_trees\_1\ k6\_numbers \tag{2}$$

Assume the following.

$$\begin{gathered}\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v1\_finseq\_1\ \\ X0) \wedge (v4\_trees\_3\ X0)))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ \\ X1) \wedge ((v1\_finseq\_1\ X1) \wedge (v4\_trees\_3\ X1)))) \Rightarrow ((k11\_trees\_3\ X0 = \\ k11\_trees\_3\ X1) \Rightarrow (X0 = X1)))\end{gathered} \tag{3}$$

Assume the following.

$$\begin{gathered}\forall X0.(k9\_xtuple\_0\ (k1\_trees\_4\ X0) = k2\_trees\_1\ k6\_numbers) \wedge \\ (k1\_funct\_1\ (k1\_trees\_4\ X0)\ k1\_xboole\_0 = X0)\end{gathered} \tag{4}$$

Assume the following.

$$\begin{gathered}\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v6\_trees\_3\ X0))) \Rightarrow \\ ((k9\_xtuple\_0\ (k2\_funct\_6\ X0) = k9\_xtuple\_0\ X0) \wedge (v4\_trees\_3\ (\\ k2\_funct\_6\ X0)))\end{gathered} \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_finseq\_1\ X1)\wedge(v6\_trees\_3\ X1))))\Rightarrow(k9\_xtuple\_0\ (k4\_trees\_4\ X0\ X1) = k11\_trees\_3\ (k2\_funct\_6\ X1)) \tag{6}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{7}$$

Assume the following.

$$\forall X0.\exists X1.(m1\_finseq\_1\ X1\ X0)\wedge((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ k5\_numbers)\wedge((v5\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_xboole\_0\ X1)\wedge((v1\_finset\_1\ X1)\wedge(v1\_finseq\_1\ X1))))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_relat\_1\ X0))\Rightarrow(\neg v1\_xboole\_0\ (k9\_xtuple\_0\ X0)) \tag{9}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finseq\_1\ X0)\wedge(v6\_trees\_3\ X0))))\Rightarrow((v1\_relat\_1\ (k2\_funct\_6\ X0))\wedge((v1\_funct\_1\ (k2\_funct\_6\ X0))\wedge((v1\_finseq\_1\ (k2\_funct\_6\ X0))\wedge(v4\_trees\_3\ (k2\_funct\_6\ X0))))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_xboole\_0\ (k9\_xtuple\_0\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((v1\_relat\_1\ (k4\_trees\_4\ X0\ X1))\wedge((v1\_funct\_1\ (k4\_trees\_4\ X0\ X1))\wedge(v3\_trees\_2\ (k4\_trees\_4\ X0\ X1)))) \tag{13}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow((v1\_relat\_1\ (k2\_funct\_6\ X0))\wedge(v1\_funct\_1\ (k2\_funct\_6\ X0))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finseq\_1\ X1)))\Rightarrow((v6\_trees\_3\ X1)\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v3\_trees\_2\ X2)))\Rightarrow((X2 = k4\_trees\_4\ X0\ X1)\Leftrightarrow((\exists X3.((v1\_relat\_1\ X3)\wedge((v1\_funct\_1\ X3)\wedge((v1\_finseq\_1\ X3)\wedge(v6\_trees\_3\ X3))))\wedge((X1 = X3)\wedge(k9\_xtuple\_0\ X2 = k11\_trees\_3\ (k2\_funct\_6\ X3))))\wedge((k1\_funct\_1\ X2\ k1\_xboole\_0 = X0)\wedge(\forall X3.(m1\_subset\_1\ X3\ k5\_numbers)\Rightarrow((\neg r1\_xxreal\_0\ (k3\_finseq\_1\ X1)\ X3)\Rightarrow(k5\_trees\_2\ X2\ (k12\_finseq\_1\ k5\_numbers\ X3) = k1\_funct\_1\ X1\ (k2\_nat\_1\ X3\ np\_\_1)))))))))) \tag{15}$$

Assume the following.

$$\forall X0.k1\_trees\_4\ X0 = k7\_funcop\_1\ (k2\_trees\_1\ k6\_numbers)\ X0 \tag{16}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_relat\_1\ X0) \tag{17}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_funct\_1\ X0) \tag{18}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_xboole\_0\ X0)))\Rightarrow((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v4\_trees\_3\ X0)\wedge((v5\_trees\_3\ X0)\wedge(v6\_trees\_3\ X0))))) \tag{19}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\Rightarrow(((k1\_trees\_4\ X0 = k4\_trees\_4\ X1\ X2)\wedge(v6\_trees\_3\ X2))\Rightarrow((X0 = X1)\wedge(X2 = k1\_xboole\_0)))$$