t3_qc_lang4 (TMa4g248K9TJVitEgyQCMfh2piQ6ZAZM196)

October 27, 2020

Let $m1\_qc\_lang1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $k9\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k4\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_qc\_lang4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $v2\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k22\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k2\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_finseq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\neg(X1 \neq k12\_qc\_lang1\ X0) \wedge ((\neg v2\_qc\_lang1\ X1\ X0) \wedge ((\neg v3\_qc\_lang1\ X1\ X0) \wedge ((\neg v4\_qc\_lang1\ X1\ X0) \wedge (\neg v5\_qc\_lang1\ X1\ X0))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\neg(X0 \in X1) \wedge (v1\_xboole\_0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((v5\_qc\_lang1\ X1\ X0) \Rightarrow ((r1\_qc\_lang2\ X0\ X2\ X1) \Leftrightarrow (X2 = k22\_qc\_lang1\ X0\ X1))))) \tag{3}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\Rightarrow((v4\_qc\_lang1\ X1\ X0)\Rightarrow((r1\_qc\_lang2\ X0\ X2\ X1)\Leftrightarrow((X2 = k19\_qc\_lang1\ X0\ X1)\vee(X2 = k20\_qc\_lang1\ X0\ X1))))))) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\Rightarrow((v3\_qc\_lang1\ X1\ X0)\Rightarrow((r1\_qc\_lang2\ X0\ X2\ X1)\Leftrightarrow(X2 = k18\_qc\_lang1\ X0\ X1))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge(v1\_finseq\_1\ X2)))\Rightarrow((X2 = k10\_finseq\_1\ X0\ X1)\Leftrightarrow((k3\_finseq\_1\ X2 = np\_\_2)\wedge((k1\_funct\_1\ X2\ np\_\_1 = X0)\wedge(k1\_funct\_1\ X2\ np\_\_2 = X1)))) \tag{6}$$

Assume the following.

$$(k2\_finseq\_1\ np\_\_1 = k1\_tarski\ np\_\_1)\wedge(k2\_finseq\_1\ np\_\_2 = k2\_tarski\ np\_\_1\ np\_\_2) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Leftrightarrow(m1\_finseq\_1\ X1\ X0) \tag{8}$$

Assume the following.

$$\forall X0.k9\_finseq\_1\ X0 = k5\_finseq\_1\ X0 \tag{9}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(k4\_finseq\_1\ X0 = k9\_xtuple\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((m1\_subset\_1\ X1\ X0)\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(k2\_finseq\_4\ X0\ X1\ X2 = k10\_finseq\_1\ X1\ X2) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ X0))\Rightarrow(k12\_finseq\_1\ X0\ X1 = k5\_finseq\_1\ X1) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k10\_finseq\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k10\_finseq\_1\ X0\ X1)) \tag{13}$$

Assume the following.

$$\forall X0.v1\_xboole\_0\ (k6\_finseq\_1\ X0) \tag{14}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (v1\_xboole\_0\ (k9\_xtuple\_0\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.v1\_finseq\_1\ (k10\_finseq\_1\ X0\ X1) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Rightarrow ((v1\_funct\_1\ X1) \wedge ((v1\_finseq\_1\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ X0))))) \tag{17}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1\ X1\ X0) \Rightarrow ((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finseq\_1\ X1))) \tag{18}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\neg v1\_xboole\_0\ (k9\_qc\_lang1\ X0)) \tag{19}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k9\_finseq\_1\ X0)) \wedge (v1\_funct\_1\ (k9\_finseq\_1\ X0)) \tag{20}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finseq\_1\ X0))) \Rightarrow (m2\_subset\_1\ (k3\_finseq\_1\ X0)\ k1\_numbers\ k5\_numbers) \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m1\_subset\_1\ (k22\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m1\_subset\_1\ (k20\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{23}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m2\_finseq\_1\ (k1\_qc\_lang4\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)))\Rightarrow(m1\_subset\_1\ (k19\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{25}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)))\Rightarrow(m1\_subset\_1\ (k18\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{26}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow((X1 = k9\_finseq\_1\ X0)\Leftrightarrow((k9\_xtuple\_0\ X1 = k2\_finseq\_1\ np\_\_1)\wedge(k1\_funct\_1\ X1\ np\_\_1 = X0))) \tag{27}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ k1\_numbers\ k5\_numbers)\Rightarrow((X1 = k3\_finseq\_1\ X0)\Leftrightarrow(k2\_finseq\_1\ X1 = k9\_xtuple\_0\ X0))) \tag{28}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_tarski\ X0\ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 = X0)\vee(X3 = X1))) \tag{29}$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(X2 = X0)) \tag{30}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((((X1 = k12\_qc\_lang1\ X0)\vee(v2\_qc\_lang1\ X1\ X0))\Rightarrow(k1\_qc\_lang4\ X0\ X1 = k6\_finseq\_1\ (k9\_qc\_lang1\ X0)))\wedge(((v3\_qc\_lang1\ X1\ X0)\Rightarrow(k1\_qc\_lang4\ X0\ X1 = k12\_finseq\_1\ (k9\_qc\_lang1\ X0)\ (k18\_qc\_lang1\ X0\ X1)))\wedge(((v4\_qc\_lang1\ X1\ X0)\Rightarrow(k1\_qc\_lang4\ X0\ X1 = k2\_finseq\_4\ (k9\_qc\_lang1\ X0)\ (k19\_qc\_lang1\ X0\ X1)\ (k20\_qc\_lang1\ X0\ X1)))\wedge(\neg(X1 \neq k12\_qc\_lang1\ X0)\wedge((\neg v2\_qc\_lang1\ X1\ X0)\wedge((\neg v3\_qc\_lang1\ X1\ X0)\wedge((\neg v4\_qc\_lang1\ X1\ X0)\wedge(k1\_qc\_lang4\ X0\ X1 \neq k12\_finseq\_1\ (k9\_qc\_lang1\ X0)\ (k22\_qc\_lang1\ X0\ X1)))))))))) \tag{31}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_xboole\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_finseq\_1\ X0)) \tag{32}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(v1\_relat\_1\ X0) \tag{33}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_numbers)\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k9\_qc\_lang1\ X0))\Rightarrow(((X1 \in k4\_finseq\_1\ (k1\_qc\_lang4\ X0\ X2))\wedge (X3 = k1\_funct\_1\ (k1\_qc\_lang4\ X0\ X2)\ X1))\Rightarrow(r1\_qc\_lang2\ X0\ X3\ X2)))))$$