

t24_qc_lang4
(TMKTK3wujhqoCb6hqLECNgZFU1jm1ioPEsg)

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Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $m1_trees_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_qc_lang4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_trees_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. 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 $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v3_trees_2 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3. \\ & \quad (m1_trees_1 X3 (k9_xtuple_0 (k2_qc_lang4 X0 X2))) \Rightarrow ((r1_qc_lang2 \\ & \quad X0 X1 (k3_trees_2 (k9_qc_lang1 X0) (k2_qc_lang4 X0 X2) X3)) \Leftrightarrow (\exists X4. \\ & \quad (m1_subset_1 X4 k5_numbers) \wedge ((k8_finseq_1 k5_numbers X3 (k12_finseq_1 \\ & \quad k5_numbers X4) \in k9_xtuple_0 (k2_qc_lang4 X0 X2)) \wedge (X1 = k1_funct_1 \\ & \quad (k2_qc_lang4 X0 X2) (k8_finseq_1 k5_numbers X3 (k12_finseq_1 k5_numbers \\ & \quad X4)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((v3_qc_lang1 \\ & \quad X1 X0) \Rightarrow ((r1_qc_lang2 X0 X2 X1) \Leftrightarrow (X2 = k18_qc_lang1 X0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ k5_numbers) \Rightarrow \\ (\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1\ X0)) \Rightarrow (\forall X3.(m1_trees_1 \\ X3\ (k9_xtuple_0\ (k2_qc_lang4\ X0\ X2))) \Rightarrow (\forall X4.(m1_trees_1 \\ X4\ (k9_xtuple_0\ (k2_qc_lang4\ X0\ X2))) \Rightarrow (((X3 = k8_finseq_1\ k5_numbers \\ X4\ (k12_finseq_1\ k5_numbers\ X1)) \wedge (v3_qc_lang1\ (k3_trees_2\ (k9_qc_lang1 \\ X0)\ (k2_qc_lang4\ X0\ X2)\ X4)\ X0)) \Rightarrow ((k3_trees_2\ (k9_qc_lang1\ X0) \\ (k2_qc_lang4\ X0\ X2)\ X3 = k18_qc_lang1\ X0\ (k3_trees_2\ (k9_qc_lang1 \\ X0)\ (k2_qc_lang4\ X0\ X2)\ X4)) \wedge (X1 = k6_numbers)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1\ X0\ X1) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0\ X0) \wedge (v1_trees_1\ X0)) \Rightarrow (\forall X1. \\ (m1_trees_1\ X1\ X0) \Leftrightarrow (m1_subset_1\ X1\ X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0) \wedge (((v1_relat_1 \\ X1) \wedge ((v5_relat_1\ X1\ X0) \wedge ((v1_funct_1\ X1) \wedge (v3_trees_2\ X1)))) \wedge \\ (m1_subset_1\ X2\ (k9_xtuple_0\ X1)))) \Rightarrow (k3_trees_2\ X0\ X1\ X2 = k1_funct_1 \\ X1\ X2) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v3_trees_2\ X0))) \Rightarrow \\ ((\neg v1_xboole_0\ (k9_xtuple_0\ X0)) \wedge (v1_trees_1\ (k9_xtuple_0\ X0))) \quad (7)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (\neg v1_xboole_0\ (k9_qc_lang1\ X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0\ X0) \wedge (((v1_relat_1 \\ X1) \wedge ((v5_relat_1\ X1\ X0) \wedge ((v1_funct_1\ X1) \wedge (v3_trees_2\ X1)))) \wedge \\ (m1_subset_1\ X2\ (k9_xtuple_0\ X1)))) \Rightarrow (m1_subset_1\ (k3_trees_2 \\ X0\ X1\ X2)\ X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_qc_lang1\ X0) \wedge (m1_subset_1\ X1\ (k9_qc_lang1 \\ X0))) \Rightarrow ((v1_relat_1\ (k2_qc_lang4\ X0\ X1)) \wedge ((v5_relat_1\ (k2_qc_lang4 \\ X0\ X1)\ (k9_qc_lang1\ X0)) \wedge ((v1_funct_1\ (k2_qc_lang4\ X0\ X1)) \wedge ((\\ v1_finset_1\ (k2_qc_lang4\ X0\ X1)) \wedge (v3_trees_2\ (k2_qc_lang4\ X0 \\ X1)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1\ X0)\wedge(m1_subset_1\ X1\ (k9_qc_lang1\ X0)))\Rightarrow(m1_subset_1\ (k18_qc_lang1\ X0\ X1)\ (k9_qc_lang1\ X0)) \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1\ X0))\Rightarrow(\forall X2.(m1_trees_1\ X2\ (k9_xtuple_0\ (k2_qc_lang4\ X0\ X1)))\Rightarrow((v3_qc_lang1\ (k3_trees_2\ (k9_qc_lang1\ X0)\ (k2_qc_lang4\ X0\ X1)\ X2)\ X0)\Rightarrow((k8_finseq_1\ k5_numbers\ X2\ (k12_finseq_1\ k5_numbers\ k6_numbers)\ \in\ k9_xtuple_0\ (k2_qc_lang4\ X0\ X1))\wedge(k1_funct_1\ (k2_qc_lang4\ X0\ X1)\ (k8_finseq_1\ k5_numbers\ X2\ (k12_finseq_1\ k5_numbers\ k6_numbers)) = k18_qc_lang1\ X0\ (k3_trees_2\ (k9_qc_lang1\ X0)\ (k2_qc_lang4\ X0\ X1)\ X2)))))) \end{aligned}$$