

t36_qc_lang4
(TMYmsJfjTtiTtAko1jzNCZ1jJKGoZvF4RKL)

October 27, 2020

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 $m1_qc_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_qc_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_qc_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_qc_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_trees_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_qc_lang4 X2 X0 X1) \Rightarrow (\forall X3.(m2_qc_lang4 \\ X3 X0 X1 X2) \Rightarrow (X3 \in k4_qc_lang4 X0 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (k3_qc_lang4 \\ X0 X1 X2 = ReplSep (toset (\lambda X3 : \iota.m1_trees_1 X3 (k9_xtuple_0 \\ (k2_qc_lang4 X0 X1)))) (\lambda X3 : \iota.k3_trees_2 (k9_qc_lang1 X0) \\ (k2_qc_lang4 X0 X1) X3 = X2) (\lambda X3 : \iota.X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k9_qc_lang1 \\ X0))) \Rightarrow (\forall X2.(m1_qc_lang4 X2 X0 X1) \Rightarrow (m1_subset_1 X2 (k9_qc_lang1 \\ X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_qc_lang4 X2 X0 X1) \Rightarrow (k4_qc_lang4 X0 X1 X2 = \\ k3_qc_lang4 X0 X1 X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_qc_lang4\ X2\ X0\ X1) \Rightarrow (\forall X3.(m1_trees_1 \\ X3\ (k9_xtuple_0\ (k2_qc_lang4\ X0\ X1)) \Rightarrow ((m2_qc_lang4\ X3\ X0\ X1\ X2) \Leftrightarrow \\ (k3_trees_2\ (k9_qc_lang1\ X0)\ (k2_qc_lang4\ X0\ X1)\ X3 = X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski\ X0\ X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski\ X0\ X1) \wedge (r1_tarski\ X1\ X0)) \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_qc_lang4\ X2\ X0\ X1) \Rightarrow (k4_qc_lang4\ X0\ X1\ X2 = \\ ReplSep\ (toset\ (\lambda X3 : \iota.m2_qc_lang4\ X3\ X0\ X1\ X2))\ (\lambda X3 : \iota. \\ X3 = X3)\ (\lambda X3 : \iota.X3)))) \end{aligned}$$