

t21_cqc_lang
(TMGBw5RBM8ahmqA72DG91hvrnzDcT1rqj6v)

October 27, 2020

Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k13_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v4_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((k19_qc_lang1 \\ X0 (k14_qc_lang1 X0 X1 X2) = X1) \wedge (k20_qc_lang1 X0 (k14_qc_lang1 \\ X0 X1 X2) = X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow ((v4_qc_lang1 X2 X0) \Rightarrow (k13_cqc_lang X0 X2 X1 = k14_qc_lang1 \\ X0 (k13_cqc_lang X0 (k19_qc_lang1 X0 X2) X1) (k13_cqc_lang X0 (k20_qc_lang1 \\ X0 X2) X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 \\ X1 (k9_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k9_qc_lang1 X0)))) \Rightarrow (m1_subset_1 \\ (k14_qc_lang1 X0 X1 X2) (k9_qc_lang1 X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow ((v4_qc_lang1 X1 X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \wedge (\exists X3.(m1_subset_1 X3 (k9_qc_lang1 X0)) \wedge (X1 = k14_qc_lang1 \\ X0 X2 X3)))))) \end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k2_qc_lang1 \\ & \quad X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1 \\ & \quad X0)) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k9_qc_lang1\ X0)) \Rightarrow (k13_cqc_lang \\ & \quad X0\ (k14_qc_lang1\ X0\ X2\ X3)\ X1 = k14_qc_lang1\ X0\ (k13_cqc_lang\ X0\ X2 \\ & \quad X1)\ (k13_cqc_lang\ X0\ X3\ X1)))) \end{aligned}$$