

t8_cqc_the2
(TMVf21iXpWG1S9HNcfwiHYrHJXEeNjEnbHV)

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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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k24_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3. \\ (m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow ((X3 \in k24_qc_lang1 \\ X0 (k2_qc_lang2 X0 X1 X2)) \Leftrightarrow ((X3 \in k24_qc_lang1 X0 X1) \vee (X3 \in k24_qc_lang1 \\ X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (k24_qc_lang1 \\ X0 (k2_qc_lang2 X0 X1 X2) = k4_subset_1 (k3_qc_lang1 X0) (k24_qc_lang1 \\ X0 X1) (k24_qc_lang1 X0 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (k24_qc_lang1 \\ X0 (k14_qc_lang1 X0 X1 X2) = k4_subset_1 (k3_qc_lang1 X0) (k24_qc_lang1 \\ X0 X1) (k24_qc_lang1 X0 X2)))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3. \\ (m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow ((X3 \in k24_qc_lang1 \\ X0 (k14_qc_lang1 X0 X1 X2)) \Leftrightarrow ((X3 \in k24_qc_lang1 X0 X1) \vee (X3 \in k24_qc_lang1 \\ X0 X2)))))) \end{aligned}$$