

t40_cqc_sim1 (TMdDr-
NUm9pns1bRjZT4quHXoWECiEXXPdHF)

October 27, 2020

Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_cqc_lang : \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k5_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_qc_lang1 \\
& \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_qc_lang1 X0)) \Rightarrow (\forall X3. \\
& \quad (m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X4. \\
& \quad (m2_subset_1 X4 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X5. \\
& \quad (m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (\\
& \quad \quad k3_qc_lang1 X0) (k3_qc_lang1 X0))) \Rightarrow (\forall X6.(m1_subset_1 \\
& \quad X6 (k5_finsub_1 (k3_qc_lang1 X0))) \Rightarrow (((k5_domain_1 (k3_cqc_lang \\
& \quad X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 \\
& \quad (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X3 X1 X6 X5 \in k15_cqc_sim1 X0 X4) \wedge \\
& \quad (k2_qc_lang3 X0 X2 \in k8_setwiseo (k3_qc_lang1 X0) (k3_qc_lang1 \\
& \quad \quad X0) X5 X6)) \Rightarrow (r2_qc_lang1 X0 X2 X1)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_qc_lang1 \\
& \quad X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_qc_lang1 X0)) \Rightarrow ((r2_qc_lang1 \\
& \quad \quad X0 X1 X2) \Leftrightarrow ((r1_qc_lang1 X0 X1 X2) \wedge (X1 \neq X2))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_qc_lang1 \\ & \quad X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k9_qc_lang1\ X0)\ (k3_cqc_lang \\ & \quad X0)) \Rightarrow (\forall X3.(m2_subset_1\ X3\ (k9_qc_lang1\ X0)\ (k3_cqc_lang \\ & \quad X0)) \Rightarrow (\forall X4.(m2_funct_2\ X4\ (k3_qc_lang1\ X0)\ (k3_qc_lang1 \\ & \quad X0)\ (k9_funct_2\ (k3_qc_lang1\ X0)\ (k3_qc_lang1\ X0))) \Rightarrow (\forall X5. \\ & \quad (m1_subset_1\ X5\ (k5_finsub_1\ (k3_qc_lang1\ X0))) \Rightarrow (\neg(k5_domain_1 \\ & \quad (k3_cqc_lang\ X0)\ (k1_qc_lang1\ X0)\ (k5_finsub_1\ (k3_qc_lang1\ X0)) \\ & \quad (k9_funct_2\ (k3_qc_lang1\ X0)\ (k3_qc_lang1\ X0))\ X2\ X1\ X5\ X4 \in k15_cqc_sim1 \\ & \quad X0\ X3) \wedge (k2_qc_lang3\ X0\ X1 \in k8_setwiseo\ (k3_qc_lang1\ X0)\ (k3_qc_lang1 \\ & \quad X0)\ X4\ X5)))))) \end{aligned}$$