

t31_cqc_sim1

(TMFD4mcoa6BX75uAx3q4tseKurdh5KCxb3d)

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Let $m1_qc_lang1 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_setwiseo : \iota \Rightarrow \iota$ be given. Let $k11_cqc_sim1 : \iota \Rightarrow \iota$ be given. Let $k7_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k30_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k28_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_cqc_lang X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_cqc_lang X0) (k1_zfmisc_1 \\ & (k9_qc_lang1 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_qc_lang1\ X0)\wedge(m1_subset_1\ X1\ (k3_cqc_lang \\ X0)))\Rightarrow(m1_subset_1\ (k15_cqc_sim1\ X0\ X1)\ (k1_zfmisc_1\ (k4_zfmisc_1 \\ (k3_cqc_lang\ X0)\ (k1_qc_lang1\ X0)\ (k5_finsub_1\ (k3_qc_lang1\ X0)) \\ (k9_funct_2\ (k3_qc_lang1\ X0)\ (k3_qc_lang1\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ X0)\ (k3_cqc_lang\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (k4_zfmisc_1\ (k3_cqc_lang\ X0)\ (k1_qc_lang1\ X0)\ (k5_finsub_1\ (\\ k3_qc_lang1\ X0))\ (k9_funct_2\ (k3_qc_lang1\ X0)\ (k3_qc_lang1\ X0))))))\Rightarrow \\ ((X2 = k15_cqc_sim1\ X0\ X1)\Leftrightarrow((r1_cqc_sim1\ X0\ X1\ X2)\wedge(\forall X3. \\ (m1_subset_1\ X3\ (k1_zfmisc_1\ (k4_zfmisc_1\ (k3_cqc_lang\ X0)\ (k1_qc_lang1 \\ X0)\ (k5_finsub_1\ (k3_qc_lang1\ X0))\ (k9_funct_2\ (k3_qc_lang1\ X0) \\ (k3_qc_lang1\ X0))))))\Rightarrow((r1_cqc_sim1\ X0\ X1\ X3)\Rightarrow(r1_tarski\ X2\ X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\
& \quad X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& \quad (k4_zfmisc_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 (\\
& \quad k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)))))) \Rightarrow \\
& ((r1_cqc_sim1 X0 X1 X2) \Leftrightarrow ((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 \\
& \quad X0) (k5_finsub_1 (k3_qc_lang1 X0) (k1_funct_2 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0)) X1 (k13_cqc_sim1 X0 X1) (k1_setwiseo (k3_qc_lang1 \\
& \quad X0) (k11_cqc_sim1 (k3_qc_lang1 X0) \in X2) \wedge ((\forall X3.(m2_subset_1 \\
& \quad X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X4.(m1_subset_1 \\
& \quad X4 (k1_qc_lang1 X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (k5_finsub_1 \\
& \quad (k3_qc_lang1 X0)) \Rightarrow (\forall X6.(m2_funct_2 X6 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0))) \Rightarrow \\
& \quad ((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 \\
& \quad (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)) \\
& \quad (k6_cqc_lang X0 X3) X4 X5 X6 \in X2) \Rightarrow (k5_domain_1 (k3_cqc_lang X0) \\
& \quad (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0) (k9_funct_2 (\\
& \quad k3_qc_lang1 X0) (k3_qc_lang1 X0)) X3 X4 X5 X6 \in X2)))))) \wedge ((\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 (m1_subset_1 X5 (k1_qc_lang1 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
& \quad (k5_finsub_1 (k3_qc_lang1 X0)) \Rightarrow (\forall X7.(m2_funct_2 X7 (\\
& \quad k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0))) \Rightarrow ((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 \\
& \quad X0) (k5_finsub_1 (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0)) (k7_cqc_lang X0 X3 X4) X5 X6 X7 \in X2) \Rightarrow ((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)) X3 X5 X6 X7 \in X2) \wedge \\
& \quad (k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 (\\
& \quad k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)) \\
& \quad X4 (k30_qc_lang1 X0 X5 (k7_cqc_sim1 X0 X3)) X6 X7 \in X2)))))) \wedge (\forall X3. \\
& \quad (m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X4. \\
& \quad (m2_subset_1 X4 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X5. \\
& \quad (m1_subset_1 X5 (k1_qc_lang1 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 \\
& \quad (k5_finsub_1 (k3_qc_lang1 X0)) \Rightarrow (\forall X7.(m2_funct_2 X7 (\\
& \quad k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0))) \Rightarrow ((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 \\
& \quad X0) (k5_finsub_1 (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) \\
& \quad (k3_qc_lang1 X0)) (k11_cqc_lang X0 X4 X3) X5 X6 X7 \in X2) \Rightarrow (k6_xtuple_0 \\
& \quad X3 (k28_qc_lang1 X0 X5) (k2_xboole_0 X6 (k6_domain_1 (k3_qc_lang1 \\
& \quad X0) X4) (k1_funct_4 X7 (k16_funcop_1 X4 (k2_qc_lang3 X0 X5))) \in \\
& \quad X2)))))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_qc_lang1 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (k5_finsub_1 (k3_qc_lang1 X0))) \Rightarrow \\ & (\forall X5.(m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0))) \Rightarrow ((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)) (k6_cqc_lang X0 X2) X3 X4 X5 \in k15_cqc_sim1 X0 X1) \Rightarrow (k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X2 X3 X4 X5 \in k15_cqc_sim1 X0 X1))))))))) \end{aligned}$$