

t42_cqc_sim1
(TMSgiHsiRZNRshVMWBGcdjeu7pJixT2EhaU)

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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 $k1_qc_lang1 : \iota \Rightarrow \iota$ 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 $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_qc_lang1 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_qc_lang1 X0)) \Rightarrow (\forall X3. \\ & (m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X4. \\ & (m2_subset_1 X4 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X5. \\ & (m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (\\ & k3_qc_lang1 X0) (k3_qc_lang1 X0))) \Rightarrow (\forall X6. (m1_subset_1 \\ & X6 (k5_finsub_1 (k3_qc_lang1 X0))) \Rightarrow (((k5_domain_1 (k3_cqc_lang \\ & X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 \\ & (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X3 X1 X6 X5 \in k15_cqc_sim1 X0 X4) \wedge \\ & (k2_qc_lang3 X0 X2 \in k7_relat_1 X5 (k24_qc_lang1 X0 X4))) \Rightarrow (r2_qc_lang1 \\ & X0 X2 X1))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1))\Leftrightarrow(r1_tarski X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_qc_lang1 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_qc_lang1 X0))\Rightarrow(\forall X3. \\ (m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow(\forall X4. \\ (m2_subset_1 X4 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow(\forall X5. \\ (m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (\\ k3_qc_lang1 X0) (k3_qc_lang1 X0)))\Rightarrow(\forall X6.(m1_subset_1 \\ X6 (k5_finsub_1 (k3_qc_lang1 X0))\Rightarrow(((k5_domain_1 (k3_cqc_lang \\ X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 \\ (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X3 X1 X6 X5 \in k15_cqc_sim1 X0 X4)\wedge \\ (k2_qc_lang3 X0 X2 \in k8_setwiseo (k3_qc_lang1 X0) (k3_qc_lang1 \\ X0) X5 X6))\Rightarrow(r2_qc_lang1 X0 X2 X1))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow(\forall X2.(m2_subset_1 X2 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow(\forall X3.(m1_subset_1 X3 (k1_qc_lang1 X0))\Rightarrow(\forall X4.(m1_subset_1 X4 (k5_finsub_1 (k3_qc_lang1 X0))\Rightarrow(\forall X5.(m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0))\Rightarrow(((k5_domain_1 (k3_cqc_lang X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X2 X3 X4 X5 \in k15_cqc_sim1 X0 X1)\Rightarrow(r1_tarski (k24_qc_lang1 X0 X2) (k2_xboole_0 (k24_qc_lang1 X0 X1) X4)))))))))) \end{aligned} \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_relat_1 X2)\Rightarrow((r1_tarski X0 X1)\Rightarrow(r1_tarski (k7_relat_1 X2 X0) (k7_relat_1 X2 X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_relat_1 X2)\Rightarrow(k7_relat_1 X2 (k2_xboole_0 X0 X1) = k2_xboole_0 (k7_relat_1 X2 X0) (k7_relat_1 X2 X1)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 \\ & X3 (k5_finsub_1 X0)))) \Rightarrow (k8_setwiseo X0 X1 X2 X3 = k7_relat_1 X2 \\ & X3) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3. (m2_funct_2 X3 X0 X1 X2) \Rightarrow ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (m1_funct_2 (k9_funct_2 X0 X1) X0 X1) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k2_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_qc_lang1 \\ & X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_qc_lang1 X0)) \Rightarrow (\forall X3. \\ & (m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X4. \\ & (m2_subset_1 X4 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X5. \\ & (m2_funct_2 X5 (k3_qc_lang1 X0) (k3_qc_lang1 X0) (k9_funct_2 (\\ & k3_qc_lang1 X0) (k3_qc_lang1 X0))) \Rightarrow (\forall X6. (m1_subset_1 \\ & X6 (k5_finsub_1 (k3_qc_lang1 X0))) \Rightarrow (((k5_domain_1 (k3_cqc_lang \\ & X0) (k1_qc_lang1 X0) (k5_finsub_1 (k3_qc_lang1 X0)) (k9_funct_2 \\ & (k3_qc_lang1 X0) (k3_qc_lang1 X0)) X3 X1 X6 X5 \in k15_cqc_sim1 X0 X4) \wedge \\ & (k2_qc_lang3 X0 X2 \in k7_relat_1 X5 (k24_qc_lang1 X0 X3))) \Rightarrow (r2_qc_lang1 \\ & X0 X2 X1)))))) \end{aligned}$$