

t23_cqc_lang (TMR- mAZqF2aRT1ag8m4wArBxaVdsT3dn3znH)

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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 $k2_qc_lang1 : \iota \Rightarrow \iota$ 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 $v5_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k21_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k15_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((m1_subset_1 \\ & X3 X0) \wedge (m1_subset_1 X4 X0)) \Rightarrow (k15_funcop_1 X0 X1 X2 X3 X4 = k14_funcop_1 \\ & X1 X2 X3 X4) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m2_subset_1 X1 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (k9_qc_lang1 \\ & X0)) \Rightarrow ((v5_qc_lang1 X2 X0) \Rightarrow (k13_cqc_lang X0 X2 X1 = k15_funcop_1 \\ & (k9_qc_lang1 X0) (k21_qc_lang1 X0 X2) X1 X2 (k15_qc_lang1 X0 (k21_qc_lang1 \\ & X0 X2) (k13_cqc_lang X0 (k22_qc_lang1 X0 X2) X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k2_qc_lang1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 (k2_qc_lang1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k9_qc_lang1 X0))) \Rightarrow (m1_subset_1 (k22_qc_lang1 X0 X1) (k9_qc_lang1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k9_qc_lang1 X0))) \Rightarrow (m2_subset_1 (k21_qc_lang1 X0 X1) (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k9_qc_lang1 X0)))) \Rightarrow (m1_subset_1 (k15_qc_lang1 X0 X1 X2) (k9_qc_lang1 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k9_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k3_qc_lang1 X0)))) \Rightarrow (m1_subset_1 (k13_cqc_lang X0 X1 X2) (k9_qc_lang1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((X0 = X1) \Rightarrow (k14_funcop_1 X0 X1 X2 X3 = X2)) \wedge ((X0 \neq X1) \Rightarrow (k14_funcop_1 X0 X1 X2 X3 = X3)) \quad (11)$$

Theorem 1

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((v5_qc_lang1 X2 X0) \Rightarrow ((k21_qc_lang1 X0 X2 = X1) \vee (k13_cqc_lang X0 X2 X1 = k15_qc_lang1 X0 (k21_qc_lang1 X0 X2) (k13_cqc_lang X0 (k22_qc_lang1 X0 X2) X1)))))))$$