

t16_cqc_lang
(TMYKG2fEVqyddCm2RxyRMacebiZ88nXREm9)

October 27, 2020

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 $v2_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_cqc_lang : \iota \Rightarrow \iota$ be given. Let $v3_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. 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.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 \\ & (k2_qc_lang1 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1 X0) \wedge ((m1_subset_1 \\ & X1 (k9_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k3_qc_lang1 X0)))) \Rightarrow (m1_subset_1 \\ & (k13_cqc_lang X0 X1 X2) (k9_qc_lang1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2. (m2_subset_1 X2 (k2_qc_lang1 X0) (k3_qc_lang1 \\ & X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (k9_qc_lang1 X0)) \Rightarrow ((X3 = k13_cqc_lang \\ & X0 X1 X2) \Leftrightarrow (\exists X4. ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k9_qc_lang1 X0) (k9_qc_lang1 X0)))))) \wedge ((X3 = k3_funct_2 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0) X4 X1) \wedge (\forall X5. (m1_subset_1 X5 (k9_qc_lang1 \\ & X0)) \Rightarrow ((k3_funct_2 (k9_qc_lang1 X0) (k9_qc_lang1 X0) X4 (k5_cqc_lang \\ & X0) = k5_cqc_lang X0) \wedge ((v2_qc_lang1 X5 X0) \Rightarrow (k3_funct_2 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0) X4 X5 = k10_qc_lang1 X0 (k16_qc_lang1 X0 X5) \\ & (k1_cqc_lang X0 (k17_qc_lang1 X0 X5) (k2_cqc_lang X0 (k3_qc_lang3 \\ & X0 k6_numbers) X2)))))) \wedge (((v3_qc_lang1 X5 X0) \Rightarrow (k3_funct_2 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0) X4 X5 = k13_qc_lang1 X0 (k3_funct_2 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0) X4 (k18_qc_lang1 X0 X5)))))) \wedge (((v4_qc_lang1 \\ & X5 X0) \Rightarrow (k3_funct_2 (k9_qc_lang1 X0) (k9_qc_lang1 X0) X4 X5 = k14_qc_lang1 \\ & X0 (k3_funct_2 (k9_qc_lang1 X0) (k9_qc_lang1 X0) X4 (k19_qc_lang1 \\ & X0 X5)) (k3_funct_2 (k9_qc_lang1 X0) (k9_qc_lang1 X0) X4 (k20_qc_lang1 \\ & X0 X5)))))) \wedge ((v5_qc_lang1 X5 X0) \Rightarrow (k3_funct_2 (k9_qc_lang1 X0) (\\ & k9_qc_lang1 X0) X4 X5 = k15_funcop_1 (k9_qc_lang1 X0) (k21_qc_lang1 \\ & X0 X5) X2 X5 (k15_qc_lang1 X0 (k21_qc_lang1 X0 X5) (k3_funct_2 (k9_qc_lang1 \\ & X0) (k9_qc_lang1 X0) X4 (k22_qc_lang1 X0 X5)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m2_subset_1 X1 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (k9_qc_lang1 \\ & X0)) \Rightarrow ((v2_qc_lang1 X2 X0) \Rightarrow (k13_cqc_lang X0 X2 X1 = k10_qc_lang1 \\ & X0 (k16_qc_lang1 X0 X2) (k1_cqc_lang X0 (k17_qc_lang1 X0 X2) (k2_cqc_lang \\ & X0 (k3_qc_lang3 X0 k6_numbers) X1)))))) \end{aligned}$$