

t39_cqc_the2

(TMVueGqaUmxT8HyfsKWbp84CyMcUJF9kuPu)

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 $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_cqc_lang : \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $v2_cqc_the1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow ((v2_cqc_the1 (k11_cqc_lang X0 X3 (k8_cqc_lang \\ X0 X1 X2)) X0) \Rightarrow (v2_cqc_the1 (k8_cqc_lang X0 (k11_cqc_lang X0 X3 \\ X1) (k11_cqc_lang X0 X3 X2)) X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow ((v2_cqc_the1 X1 X0) \Rightarrow (v2_cqc_the1 (k11_cqc_lang \\ X0 X2 X1) X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow & (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X3.(m2_subset_1\ X3\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0)) \Rightarrow (((v2_cqc_the1\ (k8_cqc_lang\ X0\ X1\ X2)\ X0) \wedge \\ & (v2_cqc_the1\ (k8_cqc_lang\ X0\ X3\ X2)\ X0)) \Rightarrow (v2_cqc_the1\ (k8_cqc_lang \\ & X0\ (k9_qc_lang\ X0\ X1\ X3)\ X2)\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow & (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0)) \Rightarrow ((v2_cqc_the1\ (k8_cqc_lang\ X0\ X1\ (k9_cqc_lang \\ & X0\ X1\ X2))\ X0) \wedge (v2_cqc_the1\ (k8_cqc_lang\ X0\ X1\ (k9_cqc_lang\ X0\ X2 \\ & X1))\ X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (\neg v1_xboole_0\ (k3_qc_lang1\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (\neg v1_xboole_0\ (k3_cqc_lang\ X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0) \wedge & ((m1_subset_1 \\ & X1\ (k3_cqc_lang\ X0)) \wedge (m1_subset_1\ X2\ (k3_cqc_lang\ X0)))) \Rightarrow (m2_subset_1 \\ & (k9_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0) \wedge & ((m1_subset_1 \\ & X1\ (k3_cqc_lang\ X0)) \wedge (m1_subset_1\ X2\ (k3_cqc_lang\ X0)))) \Rightarrow (m2_subset_1 \\ & (k8_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (m1_subset_1\ (k3_qc_lang1\ X0)\ (k1_zfmisc_1 \\ (k2_qc_lang1\ X0))) \quad (10)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (m1_subset_1\ (k3_cqc_lang\ X0)\ (k1_zfmisc_1 \\ (k9_qc_lang1\ X0))) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1 X0) \wedge ((m1_subset_1 \\ & X1 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k3_cqc_lang X0)))) \Rightarrow (m2_subset_1 \\ & (k11_cqc_lang X0 X1 X2) (k9_qc_lang1 X0) (k3_cqc_lang X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_xboole_0 X1)) \end{aligned} \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. (m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2. (m2_subset_1 X2 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3. (m2_subset_1 X3 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (v2_cqc_the1 (k8_cqc_lang X0 (k9_cqc_lang \\ & X0 (k11_cqc_lang X0 X3 X1) (k11_cqc_lang X0 X3 X2)) (k11_cqc_lang \\ & X0 X3 (k9_cqc_lang X0 X1 X2))) X0)))) \end{aligned}$$