

t31_cqc_the2 (TMK DyYfd- BLqQPm2SEMgJFwXTRvSKCmXvbMJ)

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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 $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $v2_cqc_the1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (((v2_cqc_the1 X1 X0) \wedge (v2_cqc_the1 (k8_cqc_lang \\ X0 X1 X2) X0)) \Rightarrow (v2_cqc_the1 X2 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (v2_cqc_the1 (k8_cqc_lang X0 (k11_cqc_lang \\ X0 X3 (k8_cqc_lang X0 X1 X2)) (k8_cqc_lang X0 (k11_cqc_lang X0 X3 \\ X1) (k11_cqc_lang X0 X3 X2)))) X0)))) \end{aligned} \quad (2)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_cqc_lang X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1\ X1\ (k3_cqc_lang\ X0))\wedge(m1_subset_1\ X2\ (k3_cqc_lang\ X0))))\Rightarrow(m2_subset_1\ (k8_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(m1_subset_1\ (k3_qc_lang1\ X0)\ (k1_zfmisc.1\ (k2_qc_lang1\ X0))) \quad (7)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(m1_subset_1\ (k3_cqc_lang\ X0)\ (k1_zfmisc.1\ (k9_qc_lang1\ X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1\ X1\ (k3_qc_lang1\ X0))\wedge(m1_subset_1\ X2\ (k3_cqc_lang\ X0))))\Rightarrow(m2_subset_1\ (k11_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v1_xboole.0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc.1\ X0))\Rightarrow(v1_xboole.0\ X1)) \quad (10)$$

Theorem 1

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0))\Rightarrow(\forall X2.(m2_subset_1\ X2\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0))\Rightarrow(\forall X3.(m2_subset_1\ X3\ (k2_qc_lang1\ X0)\ (k3_qc_lang1\ X0))\Rightarrow((v2_cqc_the1\ (k11_cqc_lang\ X0\ X3\ (k8_cqc_lang\ X0\ X1\ X2))\ X0)\Rightarrow(v2_cqc_the1\ (k8_cqc_lang\ X0\ (k11_cqc_lang\ X0\ X3\ X1)\ (k11_cqc_lang\ X0\ X3\ X2))\ X0))))))$$