

t28_qc_lang2 (TM-
RQdpNa5mWjwp7vtYRWQKWgFixWrrCrYSM)

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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 $v4_qc_lang2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k5_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

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

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((m1_qc_lang1 X0) \wedge \\ ((m1_subset_1 X1 (k3_qc_lang1 X0)) \wedge ((m1_subset_1 X2 (k3_qc_lang1 \\ X0)) \wedge (m1_subset_1 X3 (k9_qc_lang1 X0)))))) \Rightarrow (m1_subset_1 (k7_qc_lang2 \\ X0 X1 X2 X3) (k9_qc_lang1 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((m1_qc_lang1 X0) \wedge ((m1_subset_1 \\ X1 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k9_qc_lang1 X0)))) \Rightarrow (m1_subset_1 \\ (k5_qc_lang2 X0 X1 X2) (k9_qc_lang1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 \\ (k2_qc_lang1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X3.(m2_subset_1\ X3\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (k9_qc_lang1 \\ X0)) \Rightarrow (k9_qc_lang2\ X0\ X1\ X2\ X3\ X4 = k5_qc_lang2\ X0\ X1\ (k7_qc_lang2 \\ X0\ X2\ X3\ X4)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k9_qc_lang1 \\ X0)) \Rightarrow (k7_qc_lang2\ X0\ X1\ X2\ X3 = k5_qc_lang2\ X0\ X1\ (k5_qc_lang2\ X0 \\ X2\ X3)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow ((v4_qc_lang2\ X1\ X0) \Leftrightarrow (\exists X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \wedge (\exists X3.(m1_subset_1\ X3\ (k9_qc_lang1 \\ X0)) \wedge (X1 = k5_qc_lang2\ X0\ X2\ X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1 \\ X0)) \Rightarrow (v1_xboole_0\ X1)) \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X3.(m2_subset_1\ X3\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X4.(m1_subset_1\ X4\ (k9_qc_lang1 \\ X0)) \Rightarrow ((v4_qc_lang2\ (k7_qc_lang2\ X0\ X1\ X2\ X4)\ X0) \wedge (v4_qc_lang2 \\ (k9_qc_lang2\ X0\ X1\ X2\ X3\ X4)\ X0)))))) \end{aligned}$$