

t27_qc_lang2
(TMGF5rgmrNeT84xvBnwGXLeehruWYEGxfMA)

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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 $k8_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow ((k21_qc_lang1 X0 (k15_qc_lang1 X0 X1 X2) = X1) \wedge (k22_qc_lang1 \\ X0 (k15_qc_lang1 X0 X1 X2) = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((m1_qc_lang1 X0) \wedge \\ ((m1_subset_1 X1 (k3_qc_lang1 X0)) \wedge ((m1_subset_1 X2 (k3_qc_lang1 \\ X0)) \wedge (m1_subset_1 X3 (k9_qc_lang1 X0)))))) \Rightarrow (m1_subset_1 (k6_qc_lang2 \\ X0 X1 X2 X3) (k9_qc_lang1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 \\ (k2_qc_lang1 X0))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1\ X0) \wedge ((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0)) \wedge (m1_subset_1\ X2\ (k9_qc_lang1\ X0)))) \Rightarrow (m1_subset_1 \\ & (k15_qc_lang1\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1\ X0) \Rightarrow (\forall X1. (m2_subset_1\ X1\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2. (m2_subset_1\ X2\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X3. (m2_subset_1\ X3\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X4. (m1_subset_1\ X4\ (k9_qc_lang1 \\ & X0)) \Rightarrow (k8_qc_lang2\ X0\ X1\ X2\ X3\ X4 = k15_qc_lang1\ X0\ X1\ (k6_qc_lang2 \\ & X0\ X2\ X3\ X4)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1\ X0) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (k9_qc_lang1 \\ & X0)) \Rightarrow ((v5_qc_lang1\ X1\ X0) \Leftrightarrow (\exists X2. (m2_subset_1\ X2\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \wedge (\exists X3. (m1_subset_1\ X3\ (k9_qc_lang1 \\ & X0)) \wedge (X1 = k15_qc_lang1\ X0\ X2\ X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xboole_0\ X0) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (k1_zfmisc_1 \\ & X0)) \Rightarrow (v1_xboole_0\ X1)) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_qc_lang1\ X0) \Rightarrow (\forall X1. (m2_subset_1\ X1\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2. (m2_subset_1\ X2\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X3. (m2_subset_1\ X3\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X4. (m1_subset_1\ X4\ (k9_qc_lang1 \\ & X0)) \Rightarrow ((v5_qc_lang1\ (k8_qc_lang2\ X0\ X1\ X2\ X3\ X4)\ X0) \wedge ((k21_qc_lang1 \\ & X0\ (k8_qc_lang2\ X0\ X1\ X2\ X3\ X4) = X1) \wedge (k22_qc_lang1\ X0\ (k8_qc_lang2 \\ & X0\ X1\ X2\ X3\ X4) = k6_qc_lang2\ X0\ X2\ X3\ X4)))))) \end{aligned}$$