

t72_qc_lang2
(TMZaDZnttR63okmVZhkUFje9rUzBvenKhEY)

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Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ 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 $r2_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k13_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k9_qc_lang1 X0)) \Rightarrow ((\neg(\neg(r3_qc_lang2 X0 X1 X2)) \wedge \\ & (r2_qc_lang2 X0 X2 X3)) \wedge (\neg(r2_qc_lang2 X0 X1 X2)) \wedge (r3_qc_lang2 \\ & X0 X2 X3)) \wedge (\neg(r2_qc_lang2 X0 X1 X2)) \wedge (r1_qc_lang2 X0 X2 X3)) \wedge ((\\ & \neg(r1_qc_lang2 X0 X1 X2)) \wedge (r2_qc_lang2 X0 X2 X3)) \wedge (\neg(r3_qc_lang2 \\ & X0 X1 X2)) \wedge (r1_qc_lang2 X0 X2 X3)) \wedge (\neg(r1_qc_lang2 X0 X1 X2)) \wedge (r3_qc_lang2 \\ & X0 X2 X3)))))) \Rightarrow (r3_qc_lang2 X0 X1 X3))) \end{aligned} \quad (1)$$

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.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 (k2_qc_lang1 X0))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0))\wedge(m1_subset_1\ X2\ (k9_qc_lang1\ X0))))\Rightarrow(m1_subset_1 \\ & (k15_qc_lang1\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ & X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1\ X0))\Rightarrow((r1_qc_lang2 \\ & X0\ X1\ X2)\Leftrightarrow(\neg(X2\neq k13_qc_lang1\ X0\ X1)\wedge((\forall X3.(m1_subset_1 \\ & X3\ (k9_qc_lang1\ X0))\Rightarrow((X2\neq k14_qc_lang1\ X0\ X1\ X3)\wedge(X2\neq k14_qc_lang1 \\ & X0\ X3\ X1))))\wedge(\forall X3.(m2_subset_1\ X3\ (k2_qc_lang1\ X0)\ (k3_qc_lang1 \\ & X0))\Rightarrow(X2\neq k15_qc_lang1\ X0\ X3\ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(v1_xboole_0\ X1)) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ & X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1\ X0))\Rightarrow(\forall X3. \\ & (m2_subset_1\ X3\ (k2_qc_lang1\ X0)\ (k3_qc_lang1\ X0))\Rightarrow((r2_qc_lang2 \\ & X0\ (k15_qc_lang1\ X0\ X3\ X1)\ X2)\Rightarrow(r3_qc_lang2\ X0\ X1\ X2)))) \end{aligned}$$