

t36_qc_lang2 (TMTNrjbbDHJCbGGmHHqbC- cPHF8eRyDjubkH)

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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 $v4_qc_lang2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow (k18_qc_lang1 X0 (k5_qc_lang2 X0 X1 X2) = k15_qc_lang1 X0 X1 \\ (k13_qc_lang1 X0 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k9_qc_lang1 X0))) \Rightarrow (m1_subset_1 (k18_qc_lang1 X0 X1) (k9_qc_lang1 X0)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k9_qc_lang1 X0))) \Rightarrow (m1_subset_1 (k13_qc_lang1 X0 X1) (k9_qc_lang1 X0)) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow (k5_qc_lang2 X0 X1 X2 = k13_qc_lang1 X0 (k15_qc_lang1 X0 X1 \\ (k13_qc_lang1 X0 X2)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow ((v5_qc_lang1 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow ((X2 = k22_qc_lang1 X0 X1) \Leftrightarrow (\exists X3.(m2_subset_1 X3 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \wedge (X1 = k15_qc_lang1 X0 X3 X2)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow ((v5_qc_lang1\ X1\ X0) \Leftrightarrow (\exists X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \wedge (\exists X3.(m1_subset_1\ X3\ (k9_qc_lang1 \\ X0)) \wedge (X1 = k15_qc_lang1\ X0\ X2\ X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow ((v3_qc_lang1\ X1\ X0) \Leftrightarrow (\exists X2.(m1_subset_1\ X2\ (k9_qc_lang1 \\ X0)) \wedge (X1 = k13_qc_lang1\ X0\ X2)))))) \end{aligned} \quad (7)$$

Assume the following.

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

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\ X0)) \Rightarrow ((v4_qc_lang2\ X1\ X0) \Rightarrow ((v3_qc_lang1\ X1\ X0) \wedge ((v5_qc_lang1 \\ (k18_qc_lang1\ X0\ X1)\ X0) \wedge (v3_qc_lang1\ (k22_qc_lang1\ X0\ (k18_qc_lang1 \\ X0\ X1))\ X0)))))) \end{aligned}$$