

t98_qc_lang2 (TML- NwsEod463kTJX4WxCpHSRA7DcRatTrgf)

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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 $k15_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((r1_qc_lang2 \\ X0 X1 X2) \Rightarrow (r2_qc_lang2 X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(X2 = k15_qc_lang2 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow \\ (\exists X4.(m1_subset_1 X4 (k9_qc_lang1 X0)) \wedge ((X4 = X3) \wedge (r2_qc_lang2 \\ X0 X4 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((r3_qc_lang2 \\ X0 X1 X2) \Leftrightarrow ((r2_qc_lang2 X0 X1 X2) \wedge (X1 \neq X2)))))) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3. \\ (m1_subset_1 X3 (k9_qc_lang1 X0)) \Rightarrow ((X2 \in k15_qc_lang2 X0 X3) \Rightarrow (\\ ((\neg r1_qc_lang2 X0 X1 X2) \wedge ((\neg r3_qc_lang2 X0 X1 X2) \wedge (\neg r2_qc_lang2 \\ X0 X1 X2))) \vee (X1 \in k15_qc_lang2 X0 X3)))))) \end{aligned}$$