

t2_qc_lang4

(TMKBV1spfzjiPnxDaC5hRaiQGNyThhMrZ9A)

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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 $r2_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k11_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\neg(r3_qc_lang2 \\ & X0 X1 X2) \wedge (r1_xxreal_0 (k3_finseq_1 (k11_qc_lang1 X0 X2)) (k3_finseq_1 \\ & (k11_qc_lang1 X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((r2_qc_lang2 \\ & X0 X1 X2) \Rightarrow (r1_xxreal_0 (k3_finseq_1 (k11_qc_lang1 X0 X1)) (k3_finseq_1 \\ & (k11_qc_lang1 X0 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((r3_qc_lang2 \\ & X0 X1 X2) \Leftrightarrow ((r2_qc_lang2 X0 X1 X2) \wedge (X1 \neq X2)))))) \end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (((r2_qc_lang2 \\ & X0 X1 X2) \wedge (k3_finseq_1 (k11_qc_lang1 X0 X1) = k3_finseq_1 (k11_qc_lang1 \\ & X0 X2))) \Rightarrow (X1 = X2)))))) \end{aligned}$$