

t24_cqc_the2 (TMRk- mjE5WhFccuNW2xJfNJmDQXUhTYqB7LJ)

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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 $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_cqc_lang : \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k24_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_cqc_the1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow ((v2_cqc_the1 (k8_cqc_lang X0 X1 X2) X0) \Rightarrow \\ & ((X3 \in k24_qc_lang1 X0 X1) \vee (v2_cqc_the1 (k8_cqc_lang X0 X1 (k11_cqc_lang \\ & X0 X3 X2)) X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (((v2_cqc_the1 (k8_cqc_lang X0 X1 X2) X0) \wedge \\ & (v2_cqc_the1 (k8_cqc_lang X0 X2 X1) X0)) \Leftrightarrow (v2_cqc_the1 (k10_cqc_lang \\ & X0 X1 X2) X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (v2_cqc_the1 (k10_cqc_lang X0 X1 X1) X0)) \tag{3}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow ((\neg X2 \in k24_qc_lang1 X0 X1) \Rightarrow (v2_cqc_the1 \\ & (k8_cqc_lang X0 X1 (k11_cqc_lang X0 X2 X1)) X0)))) \end{aligned}$$