

t47_sublemma

(TMPPEey8CVXYscZVPdt7jp8YHAGkTp7bWyS)

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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 $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k24_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_subst1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k6_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k8_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k5_cqc_lang : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow ((r1_tarski (k24_qc_lang1 X0 X1) (k9_subst1 \\ X0 X1)) \Rightarrow (r1_tarski (k24_qc_lang1 X0 (k11_cqc_lang X0 X2 X1)) (k9_subst1 \\ X0 (k11_cqc_lang X0 X2 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (((r1_tarski (k24_qc_lang1 X0 X1) (k9_subst1 \\ X0 X1)) \wedge (r1_tarski (k24_qc_lang1 X0 X2) (k9_subst1 X0 X2))) \Rightarrow \\ (r1_tarski (k24_qc_lang1 X0 (k7_cqc_lang X0 X1 X2)) (k9_subst1 \\ X0 (k7_cqc_lang X0 X1 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow ((r1_tarski (k24_qc_lang1 X0 X1) (k9_subst1 \\ X0 X1)) \Rightarrow (r1_tarski (k24_qc_lang1 X0 (k6_cqc_lang X0 X1)) (k9_subst1 \\ X0 (k6_cqc_lang X0 X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow & (\forall X1.(m1_subset_1\ X1\ k5_numbers) \Rightarrow \\ & (\forall X2.(m2_subset_1\ X2\ (k6_qc_lang1\ X0)\ (k8_qc_lang1\ X0\ X1)) \Rightarrow \\ & (\forall X3.((v5_relat_1\ X3\ (k3_qc_lang1\ X0)) \wedge ((v3_card_1\ X3 \\ & X1) \wedge (m2_finseq_1\ X3\ (k2_qc_lang1\ X0)))) \Rightarrow (k24_qc_lang1\ X0\ (k4_cqc_lang \\ & X1\ X0\ X2\ X3) = k9_subst1\ X0\ (k4_cqc_lang\ X1\ X0\ X2\ X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (k24_qc_lang1\ X0\ (k12_qc_lang1\ X0) = k1_xboole_0) \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (k9_subst1\ X0\ (k5_cqc_lang\ X0) = k1_xboole_0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow o. \forall X1. (\forall X2. (m2_subset_1\ X2\ (\\ k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (\forall X3. (m2_subset_1\ X3 \\ (k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (\forall X4. (m2_subset_1 \\ X4\ (k2_qc_lang1\ X1)\ (k3_qc_lang1\ X1)) \Rightarrow (\forall X5. (m1_subset_1 \\ X5\ k5_numbers) \Rightarrow (\forall X6. ((v5_relat_1\ X6\ (k3_qc_lang1\ X1)) \wedge \\ ((v3_card_1\ X6\ X5) \wedge (m2_finseq_1\ X6\ (k2_qc_lang1\ X1)))) \Rightarrow (\forall X7. \\ (m2_subset_1\ X7\ (k6_qc_lang1\ X1)\ (k8_qc_lang1\ X1\ X5)) \Rightarrow ((X0\ (k5_cqc_lang \\ X1)) \wedge ((X0\ (k4_cqc_lang\ X5\ X1\ X7\ X6)) \wedge (((X0\ X2) \Rightarrow (X0\ (k6_cqc_lang \\ X1\ X2))) \wedge (((X0\ X2) \wedge (X0\ X3)) \Rightarrow (X0\ (k7_cqc_lang\ X1\ X2\ X3))) \wedge ((X0 \\ X2) \Rightarrow (X0\ (k11_cqc_lang\ X1\ X4\ X2)))))))))) \Rightarrow (\forall X2. (m2_subset_1 \\ X2\ (k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (X0\ X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. r1_tarski\ X0\ X0 \quad (8)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (k5_cqc_lang\ X0 = k12_qc_lang1\ X0) \quad (9)$$

Theorem 1

$$\forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow (r1_tarski\ (k24_qc_lang1\ X0\ X1)\ (k9_subst1\ X0\ X1)))$$