

t25_substut2 (TMXzxYbr- mJSHGqF2JK3nVAYASmUwjNUdYrx)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_substut1 : \iota \Rightarrow \iota$ be given. Let $k7_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k39_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_substut2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_cqc_lang : \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ 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 $k4_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_substut1 \\ & X0)) \Rightarrow (k7_cqc_sim1 X0 (k5_cqc_lang X0) = k7_cqc_sim1 X0 (k39_substut1 \\ & X0 (k2_substut2 X0 (k5_cqc_lang X0) X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow ((\forall X3.(m1_subset_1 X3 (k1_substut1 \\ & X0)) \Rightarrow (k7_cqc_sim1 X0 X1 = k7_cqc_sim1 X0 (k39_substut1 X0 (k2_substut2 \\ & X0 X1 X3)))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_substut1 X0)) \Rightarrow (k7_cqc_sim1 \\ & X0 (k11_cqc_lang X0 X2 X1) = k7_cqc_sim1 X0 (k39_substut1 X0 (k2_substut2 \\ & X0 (k11_cqc_lang X0 X2 X1) X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\
& \quad X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k9_qc_lang1 \\
& \quad X0)\ (k3_cqc_lang\ X0)) \Rightarrow (((\forall X3.(m1_subset_1\ X3\ (k1_subst1 \\
& \quad X0)) \Rightarrow (k7_cqc_sim1\ X0\ X1 = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2 \\
& \quad X0\ X1\ X3)))) \wedge (\forall X3.(m1_subset_1\ X3\ (k1_subst1\ X0)) \Rightarrow (k7_cqc_sim1 \\
& \quad X0\ X2 = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2\ X0\ X2\ X3)))))) \Rightarrow \\
& \quad (\forall X3.(m1_subset_1\ X3\ (k1_subst1\ X0)) \Rightarrow (k7_cqc_sim1\ X0 \\
& \quad (k7_cqc_lang\ X0\ X1\ X2) = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2 \\
& \quad X0\ (k7_cqc_lang\ X0\ X1\ X2)\ X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\
& \quad X0)\ (k3_cqc_lang\ X0)) \Rightarrow ((\forall X2.(m1_subset_1\ X2\ (k1_subst1 \\
& \quad X0)) \Rightarrow (k7_cqc_sim1\ X0\ X1 = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2 \\
& \quad X0\ X1\ X2)))) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_subst1\ X0)) \Rightarrow (k7_cqc_sim1 \\
& \quad X0\ (k6_cqc_lang\ X0\ X1) = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2 \\
& \quad X0\ (k6_cqc_lang\ X0\ X1)\ X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ k5_numbers) \Rightarrow \\
& \quad (\forall X2.(m2_subset_1\ X2\ (k6_qc_lang1\ X0)\ (k8_qc_lang1\ X0\ X1)) \Rightarrow \\
& \quad \quad (\forall X3.((v5_relat_1\ X3\ (k3_qc_lang1\ X0)) \wedge ((v3_card_1\ X3 \\
& \quad \quad X1) \wedge (m2_finseq_1\ X3\ (k2_qc_lang1\ X0)))) \Rightarrow (\forall X4.(m1_subset_1 \\
& \quad X4\ (k1_subst1\ X0)) \Rightarrow (k7_cqc_sim1\ X0\ (k4_cqc_lang\ X1\ X0\ X2\ X3) = \\
& \quad \quad k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2\ X0\ (k4_cqc_lang\ X1 \\
& \quad \quad X0\ X2\ X3)\ X4))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0 : \iota \Rightarrow o. \forall X1. (\forall X2. (m2_subset_1\ X2\ (\\
& \quad k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (\forall X3. (m2_subset_1\ X3 \\
& \quad \quad (k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (\forall X4. (m2_subset_1 \\
& \quad \quad X4\ (k2_qc_lang1\ X1)\ (k3_qc_lang1\ X1)) \Rightarrow (\forall X5. (m1_subset_1 \\
& \quad \quad X5\ k5_numbers) \Rightarrow (\forall X6. ((v5_relat_1\ X6\ (k3_qc_lang1\ X1)) \wedge \\
& \quad \quad ((v3_card_1\ X6\ X5) \wedge (m2_finseq_1\ X6\ (k2_qc_lang1\ X1)))) \Rightarrow (\forall X7. \\
& \quad (m2_subset_1\ X7\ (k6_qc_lang1\ X1)\ (k8_qc_lang1\ X1\ X5)) \Rightarrow ((X0\ (k5_cqc_lang \\
& \quad X1)) \wedge ((X0\ (k4_cqc_lang\ X5\ X1\ X7\ X6)) \wedge (((X0\ X2) \Rightarrow (X0\ (k6_cqc_lang \\
& \quad X1\ X2)))) \wedge (((X0\ X2) \wedge (X0\ X3)) \Rightarrow (X0\ (k7_cqc_lang\ X1\ X2\ X3)))) \wedge ((X0 \\
& \quad X2) \Rightarrow (X0\ (k11_cqc_lang\ X1\ X4\ X2)))))) \Rightarrow (\forall X2. (m2_subset_1 \\
& \quad X2\ (k9_qc_lang1\ X1)\ (k3_cqc_lang\ X1)) \Rightarrow (X0\ X2))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k1_subst1 \\ X0)) \Rightarrow (k7_cqc_sim1\ X0\ X1 = k7_cqc_sim1\ X0\ (k39_subst1\ X0\ (k2_subst2 \\ X0\ X1\ X2)))))) \end{aligned}$$