

t17_substut2 (TMaqRihmAwR- cDiNLHKDvK1zmKVq6mzrYMqr)

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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 $k6_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_substut2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (k7_cqc_sim1 X0 (k6_cqc_lang X0 X1) = k7_cqc_sim1 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (2)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (3)$$

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$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_cqc_lang X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k3_cqc_lang X0)) \wedge ((m1_subset_1 X2 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X3 (k3_qc_lang1 X0)))))) \Rightarrow (m2_subset_1 (k4_substut2 X0 X1 X2 X3) (k9_qc_lang1 X0) (k3_cqc_lang X0)) \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 (k2_qc_lang1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_cqc_lang X0) (k1_zfmisc_1 (k9_qc_lang1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 \\ & X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow ((k6_cqc_lang X0 (k4_subst2 X0 X1 X2 X3) = \\ & k6_cqc_lang X0 (k4_subst2 X0 X1 X2 X3)) \wedge ((k7_cqc_sim1 X0 X1 = k7_cqc_sim1 \\ & X0 (k4_subst2 X0 X1 X2 X3)) \Rightarrow (k7_cqc_sim1 X0 (k6_cqc_lang X0 X1) = \\ & k7_cqc_sim1 X0 (k6_cqc_lang X0 (k4_subst2 X0 X1 X2 X3)))))))) \end{aligned}$$