

t32_substut1

(TMZhFRY4U5p6Fj1VthnZh1fGeqvi98vrhPQ)

October 27, 2020

Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k16_substut1 : \iota \Rightarrow \iota$ be given. Let $v7_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k37_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36_substut1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k31_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_cqc_lang : \iota \Rightarrow \iota$ be given. Let $v4_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_substut1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k26_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k27_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k28_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k29_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k16_substut1 X0))) \Rightarrow (m1_subset_1 (k37_substut1 X0 X1) (k9_qc_lang1 X0)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k16_substut1 X0)) \wedge (m1_subset_1 X2 (k9_qc_lang1 X0)))) \Rightarrow (m1_subset_1 (k36_substut1 X0 X1 X2) (k9_qc_lang1 X0)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k16_substut1 X0))) \Rightarrow (m1_subset_1 (k31_substut1 X0 X1) (k16_substut1 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k16_subst1 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1\ X0)) \Rightarrow ((X2 = k37_subst1 \\
& X0\ X1) \Leftrightarrow (\exists X3.((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ (k16_subst1 \\
& X0)\ (k9_qc_lang1\ X0)) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1\ (k2_zfmisc_1 \\
& (k16_subst1\ X0)\ (k9_qc_lang1\ X0)))))) \wedge ((X2 = k3_funct_2\ (k16_subst1 \\
& X0)\ (k9_qc_lang1\ X0)\ X3\ X1) \wedge (\forall X4.(m1_subset_1\ X4\ (k16_subst1 \\
& X0)) \Rightarrow (((v2_subst1\ X4\ X0) \Rightarrow (k3_funct_2\ (k16_subst1\ X0)\ (k9_qc_lang1 \\
& X0)\ X3\ X4 = k5_cqc_lang\ X0)) \wedge (((v4_subst1\ X4\ X0) \Rightarrow (k3_funct_2 \\
& (k16_subst1\ X0)\ (k9_qc_lang1\ X0)\ X3\ X4 = k10_qc_lang1\ X0\ (k16_qc_lang1 \\
& X0\ (k18_subst1\ X0\ X4))\ (k3_subst1\ X0\ (k26_subst1\ X0\ X4))\ (k19_subst1 \\
& X0\ X4)))) \wedge (((v5_subst1\ X4\ X0) \Rightarrow (k3_funct_2\ (k16_subst1\ X0) \\
& (k9_qc_lang1\ X0)\ X3\ X4 = k13_qc_lang1\ X0\ (k3_funct_2\ (k16_subst1 \\
& X0)\ (k9_qc_lang1\ X0)\ X3\ (k27_subst1\ X0\ X4)))) \wedge (((v6_subst1 \\
& X4\ X0) \Rightarrow (k3_funct_2\ (k16_subst1\ X0)\ (k9_qc_lang1\ X0)\ X3\ X4 = k14_qc_lang1 \\
& X0\ (k3_funct_2\ (k16_subst1\ X0)\ (k9_qc_lang1\ X0)\ X3\ (k28_subst1 \\
& X0\ X4))\ (k3_funct_2\ (k16_subst1\ X0)\ (k9_qc_lang1\ X0)\ X3\ (k29_subst1 \\
& X0\ X4)))) \wedge (((v7_subst1\ X4\ X0) \Rightarrow (k3_funct_2\ (k16_subst1\ X0) \\
& (k9_qc_lang1\ X0)\ X3\ X4 = k36_subst1\ X0\ X4\ (k3_funct_2\ (k16_subst1 \\
& X0)\ (k9_qc_lang1\ X0)\ X3\ (k31_subst1\ X0\ X4))))))))))))) \\
& \hspace{15em} (4)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k16_subst1 \\
& X0)) \Rightarrow ((v7_subst1\ X1\ X0) \Rightarrow (k37_subst1\ X0\ X1 = k36_subst1\ X0 \\
& X1\ (k37_subst1\ X0\ (k31_subst1\ X0\ X1))))))
\end{aligned}$$