

t11_substut1
(TMX6ScGNfc2FHf1wZpA6TbVkAz9pCM4JHDY)

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 $v4_substut1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_substut1 : \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k8_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k17_substut1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k10_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_substut1 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 k5_numbers) \Rightarrow (\forall X3.(m2_subset_1 \\ X3 (k6_qc_lang1 X0) (k8_qc_lang1 X0 X2)) \Rightarrow (\forall X4.((v3_card_1 \\ X4 X2) \wedge (m2_finseq_1 X4 (k2_qc_lang1 X0))) \Rightarrow (k17_substut1 X0 X3 \\ X4 X1 = k1_domain_1 (k9_qc_lang1 X0) (k1_substut1 X0) (k10_qc_lang1 \\ X0 X3 X4) X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\ (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k16_substut1 \\ X0))) \Rightarrow (k18_substut1 X0 X1 = k1_xtuple_0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.k1_xtuple_0 (k4_tarski X0 X1) = X0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(m1_qc_lang1 X1))\Rightarrow(\neg v1_xboole_0 (k8_qc_lang1 X1 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\neg v1_xboole_0 (k6_qc_lang1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\neg v1_xboole_0 (k1_subst1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\neg v1_xboole_0 (k9_qc_lang1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0)\wedge(m1_subset_1 X1 k5_numbers))\Rightarrow(m1_subset_1 (k8_qc_lang1 X0 X1) (k1_zfmisc_1 (k6_qc_lang1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1 X0)\wedge(m1_subset_1 X1 (k16_subst1 X0)))\Rightarrow(m1_subset_1 (k18_subst1 X0 X1) (k9_qc_lang1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0)\wedge((m1_subset_1 X1 (k6_qc_lang1 X0))\wedge(m1_finseq_1 X2 (k2_qc_lang1 X0))))\Rightarrow(m1_subset_1 (k10_qc_lang1 X0 X1 X2) (k9_qc_lang1 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k16_subst1 X0))\Rightarrow((v4_subst1 X1 X0)\Leftrightarrow(\exists X2.(m1_subset_1 X2 k5_numbers)\wedge(\exists X3.(m2_subset_1 X3 (k6_qc_lang1 X0) (k8_qc_lang1 X0 X2))\wedge(\exists X4.((v3_card_1 X4 X2)\wedge(m2_finseq_1 X4 (k2_qc_lang1 X0))\wedge(\exists X5.(m1_subset_1 X5 (k1_subst1 X0))\wedge(X1 = k17_subst1 X0 X3 X4 X5)))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k9_qc_lang1 \\
& X0)) \Rightarrow ((v2_qc_lang1\ X1\ X0) \Leftrightarrow (\exists X2.(m1_subset_1\ X2\ k5_numbers) \wedge \\
& (\exists X3.(m2_subset_1\ X3\ (k6_qc_lang1\ X0)\ (k8_qc_lang1\ X0\ X2)) \wedge \\
& (\exists X4.((v3_card_1\ X4\ X2) \wedge (m2_finseq_1\ X4\ (k2_qc_lang1\ X0))) \wedge \\
& (X1 = k10_qc_lang1\ X0\ X3\ X4))))))
\end{aligned} \tag{15}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k16_subst1 \\
& X0)) \Rightarrow ((v4_subst1\ X1\ X0) \Rightarrow (v2_qc_lang1\ (k18_subst1\ X0\ X1)\ X0)))
\end{aligned}$$