

t7_substut2 (TMTKTAZFuP- PNd3YhkZBcU3WURcwtJ9ZtmeA)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_substut1 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k7_substut1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k35_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_substut2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_substut1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k34_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k33_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarSKI : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 \\ X0)) \Rightarrow ((k21_qc_lang1 X0 (k15_qc_lang1 X0 X1 X2) = X1) \wedge (k22_qc_lang1 \\ X0 (k15_qc_lang1 X0 X1 X2) = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_qc_lang1 X0) \wedge (m1_subset_1 X1 (k2_zfmisc_1 \\ (k9_qc_lang1 X0) (k1_substut1 X0)))) \Rightarrow (k34_substut1 X0 X1 = k2_xtuple_0 \\ X1) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1_qc_lang1\ X0)\wedge(m1_subset_1\ X1\ (k2_zfmisc_1\ (k9_qc_lang1\ X0)\ (k1_subst1\ X0))))\Rightarrow(k33_subst1\ X0\ X1 = k1_xtuple_0\ X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1\ X1\ (k3_cqc_lang\ X0))\wedge(m1_subset_1\ X2\ (k1_subst1\ X0))))\Rightarrow(k1_subst2\ X0\ X1\ X2 = k4_tarski\ X1\ X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1\ X1\ (k3_qc_lang1\ X0))\wedge(m1_subset_1\ X2\ (k3_cqc_lang\ X0))))\Rightarrow(k11_cqc_lang\ X0\ X1\ X2 = k15_qc_lang1\ X0\ X1\ X2) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k2_xtuple_0\ (k4_tarski\ X0\ X1) = X1 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k1_xtuple_0\ (k4_tarski\ X0\ X1) = X0 \quad (8)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(\neg v1_xboole_0\ (k3_qc_lang1\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(\neg v1_xboole_0\ (k3_cqc_lang\ X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0\ X0)\wedge((\neg v1_xboole_0\ X1)\wedge(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))))\Rightarrow(\forall X2.(m2_subset_1\ X2\ X0\ X1)\Rightarrow(m1_subset_1\ X2\ X0)) \quad (11)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(m1_subset_1\ (k3_qc_lang1\ X0)\ (k1_zfmisc_1\ (k2_qc_lang1\ X0))) \quad (12)$$

Assume the following.

$$\forall X0.(m1_qc_lang1\ X0)\Rightarrow(m1_subset_1\ (k3_cqc_lang\ X0)\ (k1_zfmisc_1\ (k9_qc_lang1\ X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1 \\ & X1\ (k3_cqc_lang\ X0))\wedge(m1_subset_1\ X2\ (k1_subst1\ X0))))\Rightarrow(m1_subset_1 \\ & (k1_subst2\ X0\ X1\ X2)\ (k2_zfmisc_1\ (k9_qc_lang1\ X0)\ (k1_subst1 \\ & X0))) \end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_qc_lang1\ X0)\wedge((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0))\wedge(m1_subset_1\ X2\ (k3_cqc_lang\ X0))))\Rightarrow(m2_subset_1 \\ & (k11_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k2_zfmisc_1 \\ & (k9_qc_lang1\ X0)\ (k1_subst1\ X0)))\Rightarrow(((k21_qc_lang1\ X0\ (k33_subst1 \\ & X0\ X1)\ \in\ k10_xtuple_0\ (k7_subst1\ X0\ (k21_qc_lang1\ X0\ (k33_subst1 \\ & X0\ X1))\ (k33_subst1\ X0\ X1)\ (k34_subst1\ X0\ X1)))\Rightarrow(k35_subst1 \\ & X0\ X1 = k2_qc_lang3\ X0\ (k13_subst1\ X0\ (k7_subst1\ X0\ (k21_qc_lang1 \\ & X0\ (k33_subst1\ X0\ X1))\ (k33_subst1\ X0\ X1)\ (k34_subst1\ X0\ X1)) \\ & (k22_qc_lang1\ X0\ (k33_subst1\ X0\ X1))))\wedge((\neg k21_qc_lang1\ X0 \\ & (k33_subst1\ X0\ X1)\ \in\ k10_xtuple_0\ (k7_subst1\ X0\ (k21_qc_lang1 \\ & X0\ (k33_subst1\ X0\ X1))\ (k33_subst1\ X0\ X1)\ (k34_subst1\ X0\ X1)))\Rightarrow \\ & (k35_subst1\ X0\ X1 = k21_qc_lang1\ X0\ (k33_subst1\ X0\ X1)))))) \end{aligned} \tag{16}$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(v1_xboole_0\ X1)) \tag{17}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0)\Rightarrow(\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ & X0)\ (k3_cqc_lang\ X0))\Rightarrow(\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ & X0)\ (k3_qc_lang1\ X0))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (k1_subst1 \\ & X0))\Rightarrow((X2\ \in\ k10_xtuple_0\ (k7_subst1\ X0\ X2\ (k11_cqc_lang\ X0\ X2 \\ & X1\ X3))\Rightarrow(k35_subst1\ X0\ (k1_subst2\ X0\ (k11_cqc_lang\ X0\ X2\ X1) \\ & X3) = k2_qc_lang3\ X0\ (k13_subst1\ X0\ (k7_subst1\ X0\ X2\ (k11_cqc_lang \\ & X0\ X2\ X1)\ X3)\ X1)))))) \end{aligned}$$