

t13_goedelcp (TMPt4QHHpgTq9vLe5u9wfJxht5PsugvmNQt)

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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 $k7_cqc_sim1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $k13_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_qc_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1 \\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow (k7_cqc_sim1\ X0\ (k11_cqc_lang\ X0\ X2\ X1) = \\ k2_nat_1\ (k7_cqc_sim1\ X0\ X1)\ np_1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1 \\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow (k7_cqc_sim1\ X0\ (k6_cqc_lang\ X0\ X1) = k7_cqc_sim1 \\ X0\ X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2\ X0\ X1) \Leftrightarrow (m1_subset_1\ X2\ X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1_qc_lang1\ X0) \wedge (m1_subset_1\ X1\ (k3_cqc_lang \\ X0))) \Rightarrow (k6_cqc_lang\ X0\ X1 = k13_qc_lang1\ X0\ X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1\ X0) \wedge ((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0)) \wedge (m1_subset_1\ X2\ (k3_cqc_lang\ X0)))) \Rightarrow (k12_cqc_lang \\ & X0\ X1\ X2 = k5_qc_lang2\ X0\ X1\ X2) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1\ X0) \wedge ((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0)) \wedge (m1_subset_1\ X2\ (k3_cqc_lang\ X0)))) \Rightarrow (k11_cqc_lang \\ & X0\ X1\ X2 = k15_qc_lang1\ X0\ X1\ X2) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. (m1_qc_lang1\ X0) \Rightarrow (\neg v1_xboole_0\ (k3_qc_lang1\ X0)) \quad (7)$$

Assume the following.

$$\forall X0. (m1_qc_lang1\ X0) \Rightarrow (\neg v1_xboole_0\ (k3_cqc_lang\ X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2\ X0\ X1) \Rightarrow (m1_subset_1\ X2\ X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_qc_lang1\ X0) \wedge (m1_subset_1\ X1\ (k3_cqc_lang \\ & X0))) \Rightarrow (m2_subset_1\ (k6_cqc_lang\ X0\ X1)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang \\ & X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1\ X0) \Rightarrow (m1_subset_1\ (k3_qc_lang1\ X0)\ (k1_zfmisc_1 \\ & (k2_qc_lang1\ X0))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1\ X0) \Rightarrow (m1_subset_1\ (k3_cqc_lang\ X0)\ (k1_zfmisc_1 \\ & (k9_qc_lang1\ X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1_qc_lang1\ X0) \wedge ((m1_subset_1 \\ & X1\ (k3_qc_lang1\ X0)) \wedge (m1_subset_1\ X2\ (k3_cqc_lang\ X0)))) \Rightarrow (m2_subset_1 \\ & (k11_cqc_lang\ X0\ X1\ X2)\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k2_qc_lang1\ X0) \\ (k3_qc_lang1\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (k9_qc_lang1\ X0)) \Rightarrow (k5_qc_lang2\ X0\ X1\ X2 = k13_qc_lang1\ X0\ (k15_qc_lang1\ X0\ X1 \\ (k13_qc_lang1\ X0\ X2)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0)) \Rightarrow (v1_xboole_0\ X1)) \quad (15)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(m2_subset_1\ X1\ (k9_qc_lang1\ X0) \\ (k3_cqc_lang\ X0)) \Rightarrow (\forall X2.(m2_subset_1\ X2\ (k2_qc_lang1\ X0) \\ (k3_qc_lang1\ X0)) \Rightarrow (k7_cqc_sim1\ X0\ (k12_cqc_lang\ X0\ X2\ X1) = \\ k2_nat_1\ (k7_cqc_sim1\ X0\ X1)\ np_1))) \end{aligned}$$