

t18_cqc_the3
(TMJRWYqv94qziSuZLxdJdramDj7nz4Qeet1)

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Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_cqc_lang : \iota \Rightarrow \iota$ be given. Let $r4_cqc_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_cqc_the3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r3_cqc_the1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow ((r2_cqc_the3 X0 X1 X2) \wedge (r2_cqc_the3 X0 X2 \\ X3)) \Rightarrow (r2_cqc_the3 X0 X1 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0))) \Rightarrow ((X1 \in X2) \Rightarrow (r3_cqc_the1 X0 X2 X1)))) \quad (3)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0))) \Rightarrow ((r2_cqc_the3 X0 X2 (k6_domain_1 (k3_cqc_lang X0) X1)) \Leftrightarrow (r3_cqc_the1 X0 X2 X1)))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (k3_cqc_lang X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0)))))) \Rightarrow ((r4_cqc_the3 X0 X1 X2) \Rightarrow (r4_cqc_the3 X0 X2 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\neg v1_xboole_0 (k3_cqc_lang X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow(m1_subset_1 (k6_domain_1 X0 X1) (k1_zfmisc_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(m1_subset_1 (k3_cqc_lang X0) (k1_zfmisc_1 (k9_qc_lang1 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow((r4_cqc_the3 X0 X1 X2)\Leftrightarrow(\forall X3.(m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow((r3_cqc_the1 X0 X1 X3)\Leftrightarrow(r3_cqc_the1 X0 X2 X3)))))) \quad (10)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow((r2_cqc_the3 X0 X1 X2)\Leftrightarrow(\forall X3.(m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0))\Rightarrow((X3 \in X2)\Rightarrow(r3_cqc_the1 X0 X1 X3)))))) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (12)$$

Theorem 1

$$\forall X0.(m1_qc_lang1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0)))\Rightarrow((r4_cqc_the3 X0 X1 X2)\Leftrightarrow((r2_cqc_the3 X0 X1 X2)\wedge(r2_cqc_the3 X0 X2 X1))))))$$