

t35_cqc_the3 (TM-
MZUCF4qWp9VfVNJV42hApfhAAwNVz865W)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k3_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $r3_cqc_the1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow ((r3_cqc_the1 X0 X1 X2) \Rightarrow (r3_cqc_the1 X0 \\ X1 (k11_cqc_lang X0 X3 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 \\ X0) (k3_qc_lang1 X0)) \Rightarrow (r3_cqc_the1 X0 X1 (k8_cqc_lang X0 (k11_cqc_lang \\ X0 X3 X2) X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (k3_cqc_lang X0))) \Rightarrow (\forall X2.(m2_subset_1 X2 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (\forall X3.(m2_subset_1 X3 (k9_qc_lang1 \\ X0) (k3_cqc_lang X0)) \Rightarrow (((r3_cqc_the1 X0 X1 X2) \wedge (r3_cqc_the1 X0 \\ X1 (k8_cqc_lang X0 X2 X3))) \Rightarrow (r3_cqc_the1 X0 X1 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_cqc_lang X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 (k2_qc_lang1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_cqc_lang X0) (k1_zfmisc_1 (k9_qc_lang1 X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k3_cqc_lang X0)))) \Rightarrow (m2_subset_1 (k11_cqc_lang X0 X1 X2) (k9_qc_lang1 X0) (k3_cqc_lang X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.(m1_qc_lang1 X0) \Rightarrow & (\forall X1.(m2_subset_1 X1 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k3_cqc_lang X0))) \Rightarrow (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow ((r3_cqc_the1 X0 X2 (k11_cqc_lang X0 X3 X1)) \Leftrightarrow (r3_cqc_the1 X0 X2 X1)))))) \end{aligned}$$