

t44_qc_lang3 (TMXUMRXQrMNroeJTKPfhd- BXGWMMy7LZwYrya)

October 27, 2020

Let $m1_qc_lang1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k9_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_qc_lang1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v2_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_qc_lang3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_qc_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k22_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_qc_lang1 X0) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_qc_lang1 X0)))) \Rightarrow ((k4_qc_lang3 \\ & X0 X1 (k12_qc_lang1 X0) = k1_xboole_0) \wedge ((\forall X2. (m1_subset_1 \\ & X2 (k9_qc_lang1 X0)) \Rightarrow ((v2_qc_lang1 X2 X0) \Rightarrow (k4_qc_lang3 X0 X1 X2 = \\ & k1_qc_lang3 X0 (k17_qc_lang1 X0 X2) X1)))) \wedge ((\forall X2. (m1_subset_1 \\ & X2 (k9_qc_lang1 X0)) \Rightarrow ((v3_qc_lang1 X2 X0) \Rightarrow (k4_qc_lang3 X0 X1 X2 = \\ & k4_qc_lang3 X0 X1 (k18_qc_lang1 X0 X2)))) \wedge ((\forall X2. (m1_subset_1 \\ & X2 (k9_qc_lang1 X0)) \Rightarrow ((v4_qc_lang1 X2 X0) \Rightarrow (k4_qc_lang3 X0 X1 X2 = \\ & k4_subset_1 X1 (k4_qc_lang3 X0 X1 (k19_qc_lang1 X0 X2)) (k4_qc_lang3 \\ & X0 X1 (k20_qc_lang1 X0 X2)))) \wedge ((\forall X2. (m1_subset_1 X2 (k9_qc_lang1 \\ & X0)) \Rightarrow ((v5_qc_lang1 X2 X0) \Rightarrow (k4_qc_lang3 X0 X1 X2 = k4_qc_lang3 X0 \\ & X1 (k22_qc_lang1 X0 X2)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (m1_qc_lang1 X0) \Rightarrow (\neg v1_xboole_0 (k3_qc_lang1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (m1_subset_1 (k3_qc_lang1 X0) (k1_zfmisc_1 (k2_qc_lang1 X0))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_qc_lang1 X0) \wedge ((m1_subset_1 X1 (k3_qc_lang1 X0)) \wedge (m1_subset_1 X2 (k9_qc_lang1 X0)))) \Rightarrow (m1_subset_1 (k15_qc_lang1 X0 X1 X2) (k9_qc_lang1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 X0)) \Rightarrow ((v5_qc_lang1 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow ((X2 = k22_qc_lang1 X0 X1) \Leftrightarrow (\exists X3.(m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \wedge (X1 = k15_qc_lang1 X0 X3 X2)))))) \quad (6)$$

Assume the following.

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k9_qc_lang1 X0)) \Rightarrow ((v5_qc_lang1 X1 X0) \Leftrightarrow (\exists X2.(m2_subset_1 X2 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \wedge (\exists X3.(m1_subset_1 X3 (k9_qc_lang1 X0)) \wedge (X1 = k15_qc_lang1 X0 X2 X3)))))) \quad (7)$$

Assume the following.

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

Theorem 1

$$\forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k9_qc_lang1 X0)) \Rightarrow (\forall X3.((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_qc_lang1 X0)))) \Rightarrow (k4_qc_lang3 X0 X3 (k15_qc_lang1 X0 X1 X2) = k4_qc_lang3 X0 X3 X2))))))$$