

t47\_qc\_lang3  
(TMb4xRWKcS965uoP7UayWnfwbyeGiY4SiZh)

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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  $k9\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $v2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_qc\_lang3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v3\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k18\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_qc\_lang1 X0)))) \Rightarrow ((v4\_qc\_lang1 X1 X0) \Rightarrow (k4\_qc\_lang3 X0 X2 X1 = \\ k4\_subset\_1 X2 (k4\_qc\_lang3 X0 X2 (k19\_qc\_lang1 X0 X1)) (k4\_qc\_lang3 \\ X0 X2 (k20\_qc\_lang1 X0 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_qc\_lang1 X0)))) \Rightarrow ((v3\_qc\_lang1 X1 X0) \Rightarrow (k4\_qc\_lang3 X0 X2 X1 = \\ k4\_qc\_lang3 X0 X2 (k18\_qc\_lang1 X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) \Rightarrow ((v2\_qc\_lang2 X1 X0) \Rightarrow ((v3\_qc\_lang1 X1 X0) \wedge ((v4\_qc\_lang1 \\ (k18\_qc\_lang1 X0 X1) X0) \wedge (v3\_qc\_lang1 (k20\_qc\_lang1 X0 (k18\_qc\_lang1 \\ X0 X1)) X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1 X0) \wedge (m1\_subset\_1 X1 (k9\_qc\_lang1 X0))) \Rightarrow (m1\_subset\_1 (k20\_qc\_lang1 X0 X1) (k9\_qc\_lang1 X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)))\Rightarrow(m1\_subset\_1\ (k18\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \quad (5)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(k12\_qc\_lang2\ X0\ X1 = k19\_qc\_lang1\ X0\ (k18\_qc\_lang1\ X0\ X1))) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(k11\_qc\_lang2\ X0\ X1 = k18\_qc\_lang1\ X0\ (k20\_qc\_lang1\ X0\ (k18\_qc\_lang1\ X0\ X1)))) \quad (7)$$

**Theorem 1**

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_qc\_lang1\ X0))))\Rightarrow((v2\_qc\_lang2\ X1\ X0)\Rightarrow(k4\_qc\_lang3\ X0\ X2\ X1 = k4\_subset\_1\ X2\ (k4\_qc\_lang3\ X0\ X2\ (k12\_qc\_lang2\ X0\ X1))\ (k4\_qc\_lang3\ X0\ X2\ (k11\_qc\_lang2\ X0\ X1)))))))$$