t34_qc_lang2 (TML4L5mzx6E3mMTKv93r8v59q6eX3dAWgjW)

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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 $v2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((k19\_qc\_lang1\ X0\ (k14\_qc\_lang1\ X0\ X1\ X2) = X1) \wedge (k20\_qc\_lang1\ X0\ (k14\_qc\_lang1\ X0\ X1\ X2) = X2))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (k18\_qc\_lang1\ X0\ (k13\_qc\_lang1\ X0\ X1) = X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1\ X0) \wedge ((m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \wedge (m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)))) \Rightarrow (m1\_subset\_1\ (k14\_qc\_lang1\ X0\ X1\ X2)\ (k9\_qc\_lang1\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m1\_subset\_1\ (k13\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (k2\_qc\_lang2\ X0\ X1\ X2 = k13\_qc\_lang1\ X0\ (k14\_qc\_lang1\ X0\ X1\ (k13\_qc\_lang1\ X0\ X2))))) \tag{5}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v4\_qc\_lang1\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\wedge(\exists X3.(m1\_subset\_1\ X3\ (k9\_qc\_lang1\ X0))\wedge(X1 = k14\_qc\_lang1\ X0\ X2\ X3))))) \tag{6}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v3\_qc\_lang1\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\wedge(X1 = k13\_qc\_lang1\ X0\ X2)))) \tag{7}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v2\_qc\_lang2\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\wedge(\exists X3.(m1\_subset\_1\ X3\ (k9\_qc\_lang1\ X0))\wedge(X1 = k2\_qc\_lang2\ X0\ X2\ X3))))) \tag{8}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v2\_qc\_lang2\ X1\ X0)\Rightarrow((v3\_qc\_lang1\ X1\ X0)\wedge((v4\_qc\_lang1\ (k18\_qc\_lang1\ X0\ X1)\ X0)\wedge(v3\_qc\_lang1\ (k20\_qc\_lang1\ X0\ (k18\_qc\_lang1\ X0\ X1))\ X0)))))$$