t74_qc_lang2 (TMRHAGWL-ynxhS23YJEYK7GzxwbVBMF713rY)

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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 $r3\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k3\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (k3\_qc\_lang2\ X0\ X1\ X2 = k2\_qc\_lang2\ X0\ (k13\_qc\_lang1\ X0\ X1)\ X2))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((r3\_qc\_lang2\ X0\ (k14\_qc\_lang1\ X0\ X1\ (k13\_qc\_lang1\ X0\ X2))\ (k2\_qc\_lang2\ X0\ X1\ X2)) \wedge ((r3\_qc\_lang2\ X0\ X1\ (k2\_qc\_lang2\ X0\ X1\ X2)) \wedge ((r3\_qc\_lang2\ X0\ (k13\_qc\_lang1\ X0\ X2)\ (k2\_qc\_lang2\ X0\ X1\ X2)) \wedge (r3\_qc\_lang2\ X0\ X2\ (k2\_qc\_lang2\ X0\ X1\ X2))))))) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((r2\_qc\_lang2\ X0\ (k13\_qc\_lang1\ X0\ X1)\ X2) \Rightarrow (r3\_qc\_lang2\ X0\ X1\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1\ X0) \wedge ((m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \wedge (m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)))) \Rightarrow (m1\_subset\_1\ (k2\_qc\_lang2\ X0\ X1\ X2)\ (k9\_qc\_lang1\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m1\_subset\_1\ (k13\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\Rightarrow((r3\_qc\_lang2\ X0\ X1\ X2)\Leftrightarrow((r2\_qc\_lang2\ X0\ X1\ X2)\wedge(X1\neq X2))))) \tag{6}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0))\Rightarrow((r3\_qc\_lang2\ X0\ (k14\_qc\_lang1\ X0\ (k13\_qc\_lang1\ X0\ X1)\ (k13\_qc\_lang1\ X0\ X2))\ (k3\_qc\_lang2\ X0\ X1\ X2))\wedge((r3\_qc\_lang2\ X0\ (k13\_qc\_lang1\ X0\ X1)\ (k3\_qc\_lang2\ X0\ X1\ X2))\wedge((r3\_qc\_lang2\ X0\ (k13\_qc\_lang1\ X0\ X2)\ (k3\_qc\_lang2\ X0\ X1\ X2))\wedge((r3\_qc\_lang2\ X0\ X1\ (k3\_qc\_lang2\ X0\ X1\ X2))\wedge(r3\_qc\_lang2\ X0\ X2\ (k3\_qc\_lang2\ X0\ X1\ X2))))))))$$