t41_qc_lang4 (TMR-WYf1b4R4Tc2323ZwHJ2kA4cNAhrLGN8j)

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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 $m1\_qc\_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_qc\_lang4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_trees\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_qc\_lang4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_trees\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_trees\_1\ X2\ (k9\_xtuple\_0\ (k2\_qc\_lang4\ X0\ X1))) \Rightarrow (\forall X3.(m1\_trees\_1\ X3\ (k9\_xtuple\_0\ (k2\_qc\_lang4\ X0\ X1))) \Rightarrow ((r1\_tarski\ X2\ X3) \Rightarrow (r2\_qc\_lang2\ X0\ (k3\_trees\_2\ (k9\_qc\_lang1\ X0)\ (k2\_qc\_lang4\ X0\ X1)\ X3)\ (k3\_trees\_2\ (k9\_qc\_lang1\ X0)\ (k2\_qc\_lang4\ X0\ X1)\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1\ X0) \wedge ((m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \wedge (m1\_qc\_lang4\ X2\ X0\ X1))) \Rightarrow (\forall X3.(m2\_qc\_lang4\ X3\ X0\ X1\ X2) \Rightarrow (m1\_trees\_1\ X3\ (k9\_xtuple\_0\ (k2\_qc\_lang4\ X0\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_qc\_lang4\ X2\ X0\ X1) \Rightarrow (\forall X3.(m1\_trees\_1\ X3\ (k9\_xtuple\_0\ (k2\_qc\_lang4\ X0\ X1))) \Rightarrow ((m2\_qc\_lang4\ X3\ X0\ X1\ X2) \Leftrightarrow (k3\_trees\_2\ (k9\_qc\_lang1\ X0)\ (k2\_qc\_lang4\ X0\ X1)\ X3 = X2))))) \tag{3}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_qc\_lang4\ X2\ X0\ X1) \Rightarrow (\forall X3.(m1\_qc\_lang4\ X3\ X0\ X1) \Rightarrow ((\exists X4.(m2\_qc\_lang4\ X4\ X0\ X1\ X2) \wedge (\exists X5.(m2\_qc\_lang4\ X5\ X0\ X1\ X3) \wedge (r1\_tarski\ X4\ X5))) \Rightarrow (r2\_qc\_lang2\ X0\ X3\ X2))))))$$