t9_cqc_the2 (TMP7wX23TdhrY5mtAY4vifouKDKoPJVAMgH)

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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 $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k3\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k24\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow ((X3 \in k24\_qc\_lang1\ X0\ (k14\_qc\_lang1\ X0\ X1\ X2)) \Leftrightarrow ((X3 \in k24\_qc\_lang1\ X0\ X1) \vee (X3 \in k24\_qc\_lang1\ X0\ X2))))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (k24\_qc\_lang1\ X0\ (k3\_qc\_lang2\ X0\ X1\ X2) = k4\_subset\_1\ (k3\_qc\_lang1\ X0)\ (k24\_qc\_lang1\ X0\ X1)\ (k24\_qc\_lang1\ X0\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (k24\_qc\_lang1\ X0\ (k14\_qc\_lang1\ X0\ X1\ X2) = k4\_subset\_1\ (k3\_qc\_lang1\ X0)\ (k24\_qc\_lang1\ X0\ X1)\ (k24\_qc\_lang1\ X0\ X2)))) \tag{3}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow ((X3 \in k24\_qc\_lang1\ X0\ (k3\_qc\_lang2\ X0\ X1\ X2)) \Leftrightarrow ((X3 \in k24\_qc\_lang1\ X0\ X1) \vee (X3 \in k24\_qc\_lang1\ X0\ X2)))))))$$