

t41\_qc\_lang2 (TM-  
dud3CgsYfTAKCy2HhCRV2M6YxJEmgCEBD)

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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  $r1\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $v2\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v5\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k15\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (& ((\neg v2\_qc\_lang1 (k12\_qc\_lang1 X0) \\ X0) \wedge ((\neg v3\_qc\_lang1 (k12\_qc\_lang1 X0) X0) \wedge ((\neg v4\_qc\_lang1 (k12\_qc\_lang1 \\ X0) X0) \wedge ((\neg v5\_qc\_lang1 (k12\_qc\_lang1 X0) X0) \wedge (\forall X1.(m1\_subset\_1 \\ X1 (k9\_qc\_lang1 X0)) \Rightarrow ((\neg (v2\_qc\_lang1 X1 X0) \wedge (v3\_qc\_lang1 X1 X0)) \wedge \\ ((\neg (v2\_qc\_lang1 X1 X0) \wedge (v4\_qc\_lang1 X1 X0)) \wedge ((\neg (v2\_qc\_lang1 \\ X1 X0) \wedge (v5\_qc\_lang1 X1 X0)) \wedge ((\neg (v3\_qc\_lang1 X1 X0) \wedge (v4\_qc\_lang1 \\ X1 X0)) \wedge ((\neg (v3\_qc\_lang1 X1 X0) \wedge (v5\_qc\_lang1 X1 X0)) \wedge (\neg (v4\_qc\_lang1 \\ X1 X0) \wedge (v5\_qc\_lang1 X1 X0)))))))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0) \Rightarrow (m1\_subset\_1 (k12\_qc\_lang1 X0) (k9\_qc\_lang1 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (& (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0)) \Rightarrow ((v5\_qc\_lang1 X1 X0) \Leftrightarrow (\exists X2.(m2\_subset\_1 X2 (k2\_qc\_lang1 \\ X0) (k3\_qc\_lang1 X0)) \wedge (\exists X3.(m1\_subset\_1 X3 (k9\_qc\_lang1 \\ X0)) \wedge (X1 = k15\_qc\_lang1 X0 X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (& (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0)) \Rightarrow ((v4\_qc\_lang1 X1 X0) \Leftrightarrow (\exists X2.(m1\_subset\_1 X2 (k9\_qc\_lang1 \\ X0)) \wedge (\exists X3.(m1\_subset\_1 X3 (k9\_qc\_lang1 X0)) \wedge (X1 = k14\_qc\_lang1 \\ X0 X2 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\
& \quad X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((r1\_qc\_lang2 \\
& \quad X0\ X1\ X2) \Leftrightarrow (\neg(X2 \neq k13\_qc\_lang1\ X0\ X1) \wedge ((\forall X3.(m1\_subset\_1 \\
& \quad X3\ (k9\_qc\_lang1\ X0)) \Rightarrow ((X2 \neq k14\_qc\_lang1\ X0\ X1\ X3) \wedge (X2 \neq k14\_qc\_lang1 \\
& \quad X0\ X3\ X1))) \wedge (\forall X3.(m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1 \\
& \quad X0)) \Rightarrow (X2 \neq k15\_qc\_lang1\ X0\ X3\ X1))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\
& \quad X0)) \Rightarrow ((v3\_qc\_lang1\ X1\ X0) \Leftrightarrow (\exists X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1 \\
& \quad X0)) \wedge (X1 = k13\_qc\_lang1\ X0\ X2))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\
& \quad X0)) \Rightarrow (\neg r1\_qc\_lang2\ X0\ X1\ (k12\_qc\_lang1\ X0)))
\end{aligned}$$