

# t50\_qc\_lang2 (TM- cZY3AEtrHHd7KhKvtzYKJgSyEdVf8xAsT)

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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  $v5\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k22\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k21\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\ & X0)) \Rightarrow ((v5\_qc\_lang1\ X1\ X0) \Rightarrow (X1 = k15\_qc\_lang1\ X0\ (k21\_qc\_lang1\ X0\ X1)\ (k22\_qc\_lang1\ X0\ X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X3. \\ & (m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow ((r1\_qc\_lang2\ X0\ X1\ (k15\_qc\_lang1\ X0\ X3\ X2)) \Leftrightarrow (X1 = X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))) \Rightarrow (m1\_subset\_1\ (k22\_qc\_lang1\ X0\ X1)\ (k9\_qc\_lang1\ X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_qc\_lang1\ X0) \wedge (m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\ & X0))) \Rightarrow (m2\_subset\_1\ (k21\_qc\_lang1\ X0\ X1)\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1 \\ & X0)) \end{aligned} \quad (4)$$

## Theorem 1

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1 \\ & X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((v5\_qc\_lang1\ X1\ X0) \Rightarrow ((r1\_qc\_lang2\ X0\ X2\ X1) \Leftrightarrow (X2 = k22\_qc\_lang1\ X0\ X1)))))) \end{aligned}$$