

# t2\_cqc\_the2 (TM- bRrB6V3h7yD8pDuxAswVyvJwHLkPyWuuD)

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Let  $m1\_qc\_lang1 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k3\_cqc\_lang : \iota \Rightarrow \iota$  be given. Let  $v2\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow ((v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ X1\ (k8\_cqc\_lang \\ X0\ X2\ X3))\ X0) \Rightarrow (v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ X2\ (k8\_cqc\_lang\ X0\ X1 \\ X3))\ X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow ((v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ X1\ (k8\_cqc\_lang \\ X0\ X2\ X3))\ X0) \Rightarrow (v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ (k7\_cqc\_lang\ X0\ X1\ X2 \\ X3)\ X0)))))) \end{aligned} \tag{2}$$

## Theorem 1

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1 \\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow ((v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ X1\ (k8\_cqc\_lang \\ X0\ X2\ X3))\ X0) \Rightarrow (v2\_cqc\_the1\ (k8\_cqc\_lang\ X0\ (k7\_cqc\_lang\ X0\ X2\ X1 \\ X3)\ X0)))))) \end{aligned}$$