

t51\_procal\_1  
(TMU78g1jXbic4zGwJr1Z7u6ZrHGxJ3K7rDC)

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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  $k8\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_cqc\_the1 : \iota \Rightarrow \iota$  be given. Let  $k7\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m2\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (((X1 \in k4\_cqc\_the1 X0) \wedge (k8\_cqc\_lang X0 \\ X1 X2 \in k4\_cqc\_the1 X0)) \Rightarrow (X2 \in k4\_cqc\_the1 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m2\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (((k8\_cqc\_lang X0 X1 X2 \in k4\_cqc\_the1 X0) \wedge \\ (k8\_cqc\_lang X0 X2 X3 \in k4\_cqc\_the1 X0)) \Rightarrow (k8\_cqc\_lang X0 X1 X3 \in k4\_cqc\_the1 \\ X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m2\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (k8\_cqc\_lang X0 (k8\_cqc\_lang X0 X1 (k8\_cqc\_lang \\ X0 X2 X3)) (k8\_cqc\_lang X0 (k7\_cqc\_lang X0 X1 X2) X3) \in k4\_cqc\_the1 \\ X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m2\_subset\_1 X1 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ X0) (k3\_cqc\_lang X0)) \Rightarrow (k8\_cqc\_lang X0 X1 (k8\_cqc\_lang X0 X2 (k7\_cqc\_lang \\ X0 X1 X2)) \in k4\_cqc\_the1 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(\neg v1\_xboole\_0 (k3\_cqc\_lang X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(\neg v1\_xboole\_0 (k9\_qc\_lang1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1 X0)\wedge((m1\_subset\_1 X1 (k3\_cqc\_lang X0))\wedge(m1\_subset\_1 X2 (k3\_cqc\_lang X0))))\Rightarrow(m2\_subset\_1 (k8\_cqc\_lang X0 X1 X2) (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1 X0)\wedge((m1\_subset\_1 X1 (k3\_cqc\_lang X0))\wedge(m1\_subset\_1 X2 (k3\_cqc\_lang X0))))\Rightarrow(m2\_subset\_1 (k7\_cqc\_lang X0 X1 X2) (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \quad (9)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(m1\_subset\_1 (k3\_cqc\_lang X0) (k1\_zfmisc\_1 (k9\_qc\_lang1 X0))) \quad (10)$$

**Theorem 1**

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(\forall X1.(m2\_subset\_1 X1 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0))\Rightarrow(\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0))\Rightarrow(\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0))\Rightarrow((k8\_cqc\_lang X0 X1 X2 \in k4\_cqc\_the1 X0)\Rightarrow(k8\_cqc\_lang X0 (k7\_cqc\_lang X0 X1 X3) (k7\_cqc\_lang X0 X2 X3) \in k4\_cqc\_the1 X0))))))$$