

t15\_cqc\_the1  
(TMMSt9tJJDuRR6cDTBY6Si4Xeq5AU5CoGbe)

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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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_cqc\_lang : \iota \Rightarrow \iota$  be given. Let  $v1\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k8\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_cqc\_lang : \iota \Rightarrow \iota$  be given. Let  $k2\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k3\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k13\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k24\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k3\_cqc\_lang X0))) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X4.(m2\_subset\_1 X4 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (k8\_cqc\_lang X0 (k8\_cqc\_lang X0 X2 X3) (k8\_cqc\_lang \\ & \quad X0 (k6\_cqc\_lang X0 (k7\_cqc\_lang X0 X3 X4)) (k6\_cqc\_lang X0 (k7\_cqc\_lang \\ & \quad X0 X2 X4))) \in k1\_cqc\_the1 X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k3\_cqc\_lang X0))) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (k8\_cqc\_lang X0 X2 (k8\_cqc\_lang X0 (k6\_cqc\_lang \\ & \quad X0 X2) X3) \in k1\_cqc\_the1 X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k3\_cqc\_lang X0))) \Rightarrow (\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 \\ & \quad X0) (k3\_cqc\_lang X0)) \Rightarrow (k8\_cqc\_lang X0 (k8\_cqc\_lang X0 (k6\_cqc\_lang \\ & \quad X0 X2) X2) X2 \in k1\_cqc\_the1 X0 X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (k5\_cqc\_lang\ X0 \in k1\_cqc\_the1\ X0\ X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (\forall X4.(m2\_subset\_1\ X4\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (((k13\_cqc\_lang\ X0\ X2\ X3 \in k3\_cqc\_lang\ X0) \wedge (k13\_cqc\_lang\ X0\ X2\ X4 \in k3\_cqc\_lang\ X0) \wedge (k13\_cqc\_lang\ X0\ X2\ X3 \in k1\_cqc\_the1\ X0\ X1)) \Rightarrow ((X3 \in k24\_qc\_lang1\ X0\ X2) \vee (k13\_cqc\_lang\ X0\ X2\ X4 \in k1\_cqc\_the1\ X0\ X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X4.(m2\_subset\_1\ X4\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow ((k8\_cqc\_lang\ X0\ X2\ X3 \in k1\_cqc\_the1\ X0\ X1) \Rightarrow ((X4 \in k24\_qc\_lang1\ X0\ X2) \vee (k8\_cqc\_lang\ X0\ X2\ (k11\_cqc\_lang\ X0\ X4\ X3) \in k1\_cqc\_the1\ X0\ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (k8\_cqc\_lang\ X0\ (k11\_cqc\_lang\ X0\ X3\ X2)\ X2 \in k1\_cqc\_the1\ X0\ X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (((X2 \in k1\_cqc\_the1\ X0\ X1) \wedge (k8\_cqc\_lang\ X0\ X2\ X3 \in k1\_cqc\_the1\ X0\ X1)) \Rightarrow (X3 \in k1\_cqc\_the1\ X0\ X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc.1\ (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (k8\_cqc\_lang\ X0\ (k7\_cqc\_lang\ X0\ X2\ X3)\ (k7\_cqc\_lang\ X0\ X3\ X2) \in k1\_cqc\_the1\ X0\ X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k3\_cqc\_lang\ X0))))\Rightarrow(m1\_subset\_1\ (k1\_cqc\_the1\ X0\ X1)\ (k1\_zfmisc\_1 \\ (k3\_cqc\_lang\ X0))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k3\_cqc\_lang\ X0)))\Rightarrow((v1\_cqc\_the1\ X1\ X0)\Leftrightarrow((k5\_cqc\_lang\ X0\ \in\ X1)\wedge \\ (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow \\ (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow \\ (\forall X4.(m2\_subset\_1\ X4\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow \\ (\forall X5.(m1\_subset\_1\ X5\ (k9\_qc\_lang1\ X0))\Rightarrow(\forall X6.(m2\_subset\_1 \\ X6\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow(\forall X7.(m2\_subset\_1 \\ X7\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow((k8\_cqc\_lang\ X0\ (k8\_cqc\_lang \\ X0\ (k6\_cqc\_lang\ X0\ X2)\ X2)\ X2\ \in\ X1)\wedge((k8\_cqc\_lang\ X0\ X2\ (k8\_cqc\_lang \\ X0\ (k6\_cqc\_lang\ X0\ X2)\ X3)\ \in\ X1)\wedge((k8\_cqc\_lang\ X0\ (k8\_cqc\_lang\ X0 \\ X2\ X3)\ (k8\_cqc\_lang\ X0\ (k6\_cqc\_lang\ X0\ (k7\_cqc\_lang\ X0\ X3\ X4))\ (k6\_cqc\_lang \\ X0\ (k7\_cqc\_lang\ X0\ X2\ X4)))\ \in\ X1)\wedge((k8\_cqc\_lang\ X0\ (k7\_cqc\_lang \\ X0\ X2\ X3)\ (k7\_cqc\_lang\ X0\ X3\ X2)\ \in\ X1)\wedge(((X2\ \in\ X1)\wedge(k8\_cqc\_lang\ X0 \\ X2\ X3\ \in\ X1))\Rightarrow(X3\ \in\ X1))\wedge((k8\_cqc\_lang\ X0\ (k11\_cqc\_lang\ X0\ X6\ X2)\ X2\ \in \\ X1)\wedge(((k8\_cqc\_lang\ X0\ X2\ X3\ \in\ X1)\Rightarrow((X6\ \in\ k24\_qc\_lang1\ X0\ X2)\vee(k8\_cqc\_lang \\ X0\ X2\ (k11\_cqc\_lang\ X0\ X6\ X3)\ \in\ X1))))\wedge(((k13\_cqc\_lang\ X0\ X5\ X6\ \in\ k3\_cqc\_lang \\ X0)\wedge((k13\_cqc\_lang\ X0\ X5\ X7\ \in\ k3\_cqc\_lang\ X0)\wedge(k13\_cqc\_lang\ X0 \\ X5\ X6\ \in\ X1)))\Rightarrow((X6\ \in\ k24\_qc\_lang1\ X0\ X5)\vee(k13\_cqc\_lang\ X0\ X5\ X7\ \in\ X1)))))))))))))) \end{aligned} \tag{11}$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k3\_cqc\_lang\ X0)))\Rightarrow(v1\_cqc\_the1\ (k1\_cqc\_the1\ X0\ X1)\ X0)) \end{aligned}$$