

t17\_cqc\_lang  
(TMM9YK7Yt3hbmwKs1LSay83w2oZn1mSfK82)

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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  $k5\_numbers : \iota$  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. Let  $k6\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k8\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_qc\_lang3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k9\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $v2\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k16\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m2\_subset\_1 X1 (k2\_qc\_lang1 \\ & X0) (k3\_qc\_lang1 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k9\_qc\_lang1 \\ & X0)) \Rightarrow ((v2\_qc\_lang1 X2 X0) \Rightarrow (k13\_cqc\_lang X0 X2 X1 = k10\_qc\_lang1 \\ & X0 (k16\_qc\_lang1 X0 X2) (k1\_cqc\_lang X0 (k17\_qc\_lang1 X0 X2) (k2\_cqc\_lang \\ & X0 (k3\_qc\_lang3 X0 k6\_numbers) X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers) \wedge (m1\_qc\_lang1 X1)) \Rightarrow (\neg v1\_xboole\_0 (k8\_qc\_lang1 X1 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Rightarrow (m1\_subset\_1 X2 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow (m1\_subset\_1\ (k8\_qc\_lang1\ X0\ X1)\ (k1\_zfmisc\_1\ (k6\_qc\_lang1\ X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1\ X0)\wedge((m1\_subset\_1\ X1\ (k6\_qc\_lang1\ X0))\wedge(m1\_finseq\_1\ X2\ (k2\_qc\_lang1\ X0))))\Rightarrow(m1\_subset\_1\ (k10\_qc\_lang1\ X0\ X1\ X2)\ (k9\_qc\_lang1\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v2\_qc\_lang1\ X1\ X0)\Rightarrow(\forall X2.(m2\_finseq\_1\ X2\ (k2\_qc\_lang1\ X0))\Rightarrow((X2 = k17\_qc\_lang1\ X0\ X1)\Leftrightarrow(\exists X3.(m1\_subset\_1\ X3\ k5\_numbers)\wedge(\exists X4.(m2\_subset\_1\ X4\ (k6\_qc\_lang1\ X0)\ (k8\_qc\_lang1\ X0\ X3))\wedge(\exists X5.((v3\_card\_1\ X5\ X3)\wedge(m2\_finseq\_1\ X5\ (k2\_qc\_lang1\ X0))\wedge((X2 = X5)\wedge(X1 = k10\_qc\_lang1\ X0\ X4\ X5)))))))))) \quad (7)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v2\_qc\_lang1\ X1\ X0)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k6\_qc\_lang1\ X0))\Rightarrow((X2 = k16\_qc\_lang1\ X0\ X1)\Leftrightarrow(\exists X3.(m1\_subset\_1\ X3\ k5\_numbers)\wedge(\exists X4.((v3\_card\_1\ X4\ X3)\wedge(m2\_finseq\_1\ X4\ (k2\_qc\_lang1\ X0))\wedge(\exists X5.(m2\_subset\_1\ X5\ (k6\_qc\_lang1\ X0)\ (k8\_qc\_lang1\ X0\ X3))\wedge((X2 = X5)\wedge(X1 = k10\_qc\_lang1\ X0\ X5\ X4)))))))))) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0))\Rightarrow((v2\_qc\_lang1\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ k5\_numbers)\wedge(\exists X3.(m2\_subset\_1\ X3\ (k6\_qc\_lang1\ X0)\ (k8\_qc\_lang1\ X0\ X2))\wedge(\exists X4.((v3\_card\_1\ X4\ X2)\wedge(m2\_finseq\_1\ X4\ (k2\_qc\_lang1\ X0))\wedge(X1 = k10\_qc\_lang1\ X0\ X3\ X4)))))) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \quad (10)$$

### Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ k5\_numbers)\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow(\forall X3.(m2\_subset\_1\ X3\ (k6\_qc\_lang1\ X0)\ (k8\_qc\_lang1\ X0\ X1))\Rightarrow(\forall X4.((v3\_card\_1\ X4\ X1)\wedge(m2\_finseq\_1\ X4\ (k2\_qc\_lang1\ X0))\Rightarrow(k13\_cqc\_lang\ X0\ (k10\_qc\_lang1\ X0\ X3\ X4)\ X2 = k10\_qc\_lang1\ X0\ X3\ (k1\_cqc\_lang\ X0\ X4\ (k2\_cqc\_lang\ X0\ (k3\_qc\_lang3\ X0\ k6\_numbers)\ X2)))))) \quad (10)$$