

# t11\_cqc\_the1 (TMSE- QcHZG98PWkbuK8FsAGzaNmEbeBj1kxm)

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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  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k1\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k21\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k3\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $v1\_cqc\_the1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_cqc\_lang : \iota \Rightarrow \iota$  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  $k11\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k24\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (2)$$

Assume the following.

$$\forall X0. (m1\_qc\_lang1 X0) \Rightarrow (\neg v1\_xboole\_0 (k3\_cqc\_lang X0)) \quad (3)$$

Assume the following.

$$\forall X0. \exists X1. m1\_subset\_1 X1 X0 \quad (4)$$

Assume the following.

$$\forall X0. (m1\_qc\_lang1 X0) \Rightarrow (\neg v1\_xboole\_0 (k9\_qc\_lang1 X0)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1\_qc\_lang1 X0) \wedge ((m1\_subset\_1 X1 (k3\_cqc\_lang X0)) \wedge (m1\_subset\_1 X2 (k3\_cqc\_lang X0)))) \Rightarrow (m2\_subset\_1 (k8\_cqc\_lang X0 X1 X2) (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0) \Rightarrow (m1\_subset\_1 (k3\_cqc\_lang X0) (k1\_zfmisc\_1 (k9\_qc\_lang1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1 X0) \wedge (m1\_subset\_1 X1 (k9\_qc\_lang1 X0))) \Rightarrow (m2\_subset\_1 (k21\_qc\_lang1 X0 X1) (k2\_qc\_lang1 X0) (k3\_qc\_lang1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k3\_cqc\_lang X0)))) \Rightarrow (m1\_subset\_1 (k1\_cqc\_the1 X0 X1) (k1\_zfmisc\_1 (k3\_cqc\_lang X0))) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k3\_cqc\_lang X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k3\_cqc\_lang X0))) \Rightarrow ((X2 = k1\_cqc\_the1 X0 X1) \Leftrightarrow (\forall X3.(m2\_subset\_1 X3 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \Rightarrow ((X3 \in X2) \Leftrightarrow (\forall X4.(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k3\_cqc\_lang X0))) \Rightarrow (((v1\_cqc\_the1 X4 X0) \wedge (r1\_tarski X1 X4)) \Rightarrow (X3 \in X4)))))))))) \quad (10) \end{aligned}$$

Assume the following.

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

**Theorem 1**

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