

# t35\_sublemma (TMWop- KXS4uD6RwEz46ypSMPFANQmhDb4SEx)

October 27, 2020

Let  $m1\_qc\_lang1 : \iota \Rightarrow o$  be given. Let  $v1\_sublemma : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_subst1 : \iota \Rightarrow \iota$  be given. Let  $k3\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_subst1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k24\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k23\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k22\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_subst1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k2\_zfmisc\_1 \\ (k16\_subst1 X0) (k3\_qc\_lang1 X0))) \Rightarrow (\forall X2.(m1\_subst1 \\ X2 X0 X1) \Rightarrow ((v3\_subst1 X1 X0) \Rightarrow ((k18\_subst1 X0 (k24\_subst1 \\ X0 X1 X2) = k15\_qc\_lang1 X0 (k23\_subst1 X0 X1) (k18\_subst1 X0 \\ (k22\_subst1 X0 X1))) \wedge (k19\_subst1 X0 (k24\_subst1 X0 X1 X2) = \\ X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k2\_zfmisc\_1 \\ (k16\_subst1 X0) (k3\_qc\_lang1 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (k2\_zfmisc\_1 (k16\_subst1 X0) (k3\_qc\_lang1 X0))) \Rightarrow (\forall X3. \\ (m1\_subst1 X3 X0 X1) \Rightarrow (\forall X4.(m1\_subst1 X4 X0 X2) \Rightarrow (((v3\_subst1 \\ X1 X0) \wedge ((v3\_subst1 X2 X0) \wedge (k24\_subst1 X0 X1 X3 = k24\_subst1 \\ X0 X2 X4))) \Rightarrow (X1 = X2)))))) \end{aligned} \tag{2}$$

## Theorem 1

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.((v1\_sublemma X1 X0) \wedge \\ (m1\_subset\_1 X1 (k2\_zfmisc\_1 (k16\_subst1 X0) (k3\_qc\_lang1 X0)))) \Rightarrow \\ (\forall X2.(m1\_subst1 X2 X0 X1) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ (k2\_zfmisc\_1 (k16\_subst1 X0) (k3\_qc\_lang1 X0))) \Rightarrow (\forall X4. \\ (m1\_subst1 X4 X0 X3) \Rightarrow (((v3\_subst1 X1 X0) \wedge ((v3\_subst1 X3 \\ X0) \wedge (k24\_subst1 X0 X1 X2 = k24\_subst1 X0 X3 X4))) \Rightarrow ((k23\_subst1 \\ X0 X1 = k23\_subst1 X0 X3) \wedge (X2 = X4)))))) \end{aligned}$$