

## t30\_qc\_lang2

(TMQmeVnpNM2F7ReLF2AB9RpshWef9FkRyW8)

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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  $k9\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k12\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_qc\_lang2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k20\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k9\_qc\_lang1 X0)) \Rightarrow ((k19\_qc\_lang1 \\ X0 (k14\_qc\_lang1 X0 X1 X2) = X1) \wedge (k20\_qc\_lang1 X0 (k14\_qc\_lang1 \\ X0 X1 X2) = X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 X0)) \Rightarrow (k18\_qc\_lang1 X0 (k13\_qc\_lang1 X0 X1) = X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_qc\_lang1 X0) \wedge ((m1\_subset\_1 X1 (k9\_qc\_lang1 X0)) \wedge (m1\_subset\_1 X2 (k9\_qc\_lang1 X0)))) \Rightarrow (m1\_subset\_1 (k14\_qc\_lang1 X0 X1 X2) (k9\_qc\_lang1 X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1 X0) \wedge (m1\_subset\_1 X1 (k9\_qc\_lang1 X0))) \Rightarrow (m1\_subset\_1 (k13\_qc\_lang1 X0 X1) (k9\_qc\_lang1 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k9\_qc\_lang1 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k9\_qc\_lang1 X0)) \Rightarrow (k2\_qc\_lang2 \\ X0 X1 X2 = k13\_qc\_lang1 X0 (k14\_qc\_lang1 X0 X1 (k13\_qc\_lang1 X0 X2)))))) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (k12\_qc\_lang2\ X0\ X1 = k19\_qc\_lang1\ X0\ (k18\_qc\_lang1\ X0\ X1))) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (k11\_qc\_lang2\ X0\ X1 = k18\_qc\_lang1\ X0\ (k20\_qc\_lang1\ X0\ (k18\_qc\_lang1\ X0\ X1)))) \quad (7)$$

**Theorem 1**

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k9\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)) \Rightarrow ((k12\_qc\_lang2\ X0\ (k2\_qc\_lang2\ X0\ X1\ X2) = X1) \wedge ((k11\_qc\_lang2\ X0\ (k2\_qc\_lang2\ X0\ X1\ X2) = X2) \wedge (k18\_qc\_lang1\ X0\ (k2\_qc\_lang2\ X0\ X1\ X2) = k14\_qc\_lang1\ X0\ X1\ (k13\_qc\_lang1\ X0\ X2)))))))$$