

t11\_valuat\_1

(TMHkZnFz6pcWbuaWNh8BKj2eiFhv4i7xqVQ)

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Let  $m1\_qc\_lang1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole_0 : \iota \Rightarrow o$  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  $k3\_cqc\_lang : \iota \Rightarrow \iota$  be given. Let  $m1\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $k8\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_cqc\_lang : \iota \Rightarrow \iota$  be given. Let  $k1\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Let  $m1\_subset_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_qc\_lang1 : \iota \Rightarrow \iota$  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  $k2\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k6\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k8\_qc\_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given.

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k9\_qc\_lang1 \\
& \quad X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3. \\
& (m1\_valuat\_1\ X3\ X0\ X2) \Rightarrow ((r2\_funct\_2\ (k2\_valuat\_1\ X0\ X2)\ k6\_margrel1 \\
& \quad (k8\_valuat\_1\ X0\ X2\ X3\ (k5\_cqc\_lang\ X0))\ (k1\_margrel1\ k6\_margrel1 \\
& \quad (k2\_valuat\_1\ X0\ X2)\ k8\_margrel1)) \wedge ((\forall X4.(m1\_subset\_1 \\
& \quad X4\ k5\_numbers) \Rightarrow (\forall X5.((v5\_relat\_1\ X5\ (k3\_qc\_lang1\ X0)) \wedge \\
& \quad ((v3\_card\_1\ X5\ X4) \wedge (m2\_finseq\_1\ X5\ (k2\_qc\_lang1\ X0)))) \Rightarrow (\forall X6. \\
& \quad (m2\_subset\_1\ X6\ (k6\_qc\_lang1\ X0)\ (k8\_qc\_lang1\ X0\ X4)) \Rightarrow (r2\_funct\_2 \\
& \quad (k2\_valuat\_1\ X0\ X2)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X2\ X3\ (k4\_cqc\_lang \\
& \quad X4\ X0\ X6\ X5))\ (k5\_valuat\_1\ X0\ X2\ X4\ X5\ (k7\_valuat\_1\ X0\ X2\ X4\ X3\ X6)))))) \wedge \\
& \quad ((\forall X4.(m2\_subset\_1\ X4\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow \\
& \quad (r2\_funct\_2\ (k2\_valuat\_1\ X0\ X2)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X2 \\
& \quad X3\ (k6\_cqc\_lang\ X0\ X4))\ (k15\_margrel1\ (k2\_valuat\_1\ X0\ X2)\ (k8\_valuat\_1 \\
& \quad X0\ X2\ X3\ X4)))) \wedge ((\forall X4.(m2\_subset\_1\ X4\ (k9\_qc\_lang1\ X0)\ ( \\
& \quad k3\_cqc\_lang\ X0)) \Rightarrow (r2\_funct\_2\ (k2\_valuat\_1\ X0\ X2)\ k6\_margrel1 \\
& \quad (k8\_valuat\_1\ X0\ X2\ X3\ (k7\_cqc\_lang\ X0\ X1\ X4))\ (k16\_margrel1\ (k2\_valuat\_1 \\
& \quad X0\ X2)\ (k8\_valuat\_1\ X0\ X2\ X3\ X1)\ (k8\_valuat\_1\ X0\ X2\ X3\ X4)))) \wedge (\forall X4. \\
& \quad (m2\_subset\_1\ X4\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (r2\_funct\_2 \\
& \quad (k2\_valuat\_1\ X0\ X2)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X2\ X3\ (k11\_cqc\_lang \\
& \quad X0\ X4\ X1))\ (k3\_valuat\_1\ X0\ X2\ X4\ (k8\_valuat\_1\ X0\ X2\ X3\ X1))))))))) \\
& \hspace{15em} (1)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow ( \\
& \quad \forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow \\
& \quad (\forall X3.(m2\_subset\_1\ X3\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow \\
& \quad (\forall X4.(m1\_valuat\_1\ X4\ X0\ X1) \Rightarrow (r2\_funct\_2\ (k2\_valuat\_1\ X0 \\
& \quad X1)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X1\ X4\ (k7\_cqc\_lang\ X0\ X2\ X3))\ (k16\_margrel1 \\
& \quad (k2\_valuat\_1\ X0\ X1)\ (k8\_valuat\_1\ X0\ X1\ X4\ X2)\ (k8\_valuat\_1\ X0\ X1\ X4 \\
& \quad X3))))))
\end{aligned}$$