t29_valuat_1 (TMZS4Mgy5sefsamhysFVzqU6P23TYQY7jmY)

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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 $k2\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k3\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_qc\_lang1 : \iota \Rightarrow \iota$ 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 $r1\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_margrel1 : \iota$ be given. Let $k8\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_margrel1 : \iota$ be given. Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (\forall X3.(m2\_funct\_2\ X3\ (k3\_qc\_lang1\ X0)\ X1\ (k2\_valuat\_1\ X0\ X1)) \Rightarrow (\forall X4.(m2\_subset\_1\ X4\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X5.(m1\_valuat\_1\ X5\ X0\ X1) \Rightarrow ((r1\_valuat\_1\ X0\ X1\ (k11\_cqc\_lang\ X0\ X2\ X4)\ X5\ X3) \Leftrightarrow (\forall X6.(m2\_funct\_2\ X6\ (k3\_qc\_lang1\ X0)\ X1\ (k2\_valuat\_1\ X0\ X1)) \Rightarrow ((\forall X7.(m2\_subset\_1\ X7\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow ((X2 \neq X7) \Rightarrow (k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X1\ X6\ X7 = k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X1\ X3\ X7))) \Rightarrow (k3\_funct\_2\ (k2\_valuat\_1\ X0\ X1)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X1\ X5\ X4)\ X6 = k8\_margrel1)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(m1\_valuat\_1\ X3\ X0\ X1) \Rightarrow (\forall X4.(m2\_funct\_2\ X4\ (k3\_qc\_lang1\ X0)\ X1\ (k2\_valuat\_1\ X0\ X1)) \Rightarrow ((r1\_valuat\_1\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow (k3\_funct\_2\ (k2\_valuat\_1\ X0\ X1)\ k6\_margrel1\ (k8\_valuat\_1\ X0\ X1\ X3\ X2)\ X4 = k8\_margrel1)))))) \tag{2}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow(\forall X3.(m2\_funct\_2\ X3\ (k3\_qc\_lang1\ X0)\ X1\ (k2\_valuat\_1\ X0\ X1))\Rightarrow(\forall X4.(m2\_subset\_1\ X4\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0))\Rightarrow(\forall X5.(m1\_valuat\_1\ X5\ X0\ X1)\Rightarrow((r1\_valuat\_1\ X0\ X1\ (k11\_cqc\_lang\ X0\ X2\ X4)\ X5\ X3)\Leftrightarrow(\forall X6.(m2\_funct\_2\ X6\ (k3\_qc\_lang1\ X0)\ X1\ (k2\_valuat\_1\ X0\ X1))\Rightarrow((\forall X7.(m2\_subset\_1\ X7\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow((X2\neq X7)\Rightarrow(k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X1\ X6\ X7 = k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X1\ X3\ X7)))\Rightarrow(r1\_valuat\_1\ X0\ X1\ X4\ X5\ X6)))))))))$$