

## t37\_goedelcp

(TMH2Uc8gXrKufhTXWeTW6Mhg4XfMXyf9LBD)

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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  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_qc\_lang1 : \iota \Rightarrow \iota$  be given. Let  $k2\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r7\_calcul\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r6\_calcul\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_cqc\_lang : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 (k2\_xboole\_0 X0 X1) \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_qc\_lang1 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & \quad (k3\_cqc\_lang X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & \quad (k3\_cqc\_lang X0))) \Rightarrow (\forall X3. (\neg v1\_xboole\_0 X3) \Rightarrow (\forall X4. \\ & \quad (m1\_valuat\_1 X4 X0 X3) \Rightarrow (\forall X5. (m2\_funct\_2 X5 (k3\_qc\_lang1 \\ & \quad X0) X3 (k2\_valuat\_1 X0 X3)) \Rightarrow (((r6\_calcul\_1 X0 X1 X3 X4 X5) \wedge (r1\_tarski \\ & \quad X2 X1)) \Rightarrow (r6\_calcul\_1 X0 X2 X3 X4 X5))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_qc\_lang1 X0) \Rightarrow (\forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow ( \\ & \quad \forall X2. (m2\_funct\_2 X2 (k3\_qc\_lang1 X0) X1 (k2\_valuat\_1 X0 X1)) \Rightarrow \\ & \quad (\forall X3. (m2\_subset\_1 X3 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \Rightarrow \\ & \quad (\forall X4. (m1\_valuat\_1 X4 X0 X1) \Rightarrow ((r1\_valuat\_1 X0 X1 (k6\_cqc\_lang \\ & \quad X0 X3) X4 X2) \Leftrightarrow (\neg r1\_valuat\_1 X0 X1 X3 X4 X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & \quad (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & \quad X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = k2\_xboole\_0 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(\neg v1\_xboole\_0 (k3\_cqc\_lang X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (m1\_subset\_1 (k6\_domain\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1 X0)\wedge(m1\_subset\_1 X1 (k3\_cqc\_lang X0)))\Rightarrow(m2\_subset\_1 (k6\_cqc\_lang X0 X1) (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(m1\_subset\_1 (k4\_subset\_1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1 X0)\Rightarrow(m1\_subset\_1 (k3\_cqc\_lang X0) (k1\_zfmisc\_1 (k9\_qc\_lang1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow (X2 = X0)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_qc\_lang1 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k3\_cqc\_lang X0)))\Rightarrow(\forall X2.(m2\_subset\_1 X2 (k9\_qc\_lang1 X0) (k3\_cqc\_lang X0))\Rightarrow((r7\_calcul\_1 X0 X1 X2)\Leftrightarrow(\forall X3.(\neg v1\_xboole\_0 X3)\Rightarrow(\forall X4.(m1\_valuat\_1 X4 X0 X3)\Rightarrow(\forall X5.(m2\_funct\_2 X5 (k3\_qc\_lang1 X0) X3 (k2\_valuat\_1 X0 X3))\Rightarrow((r6\_calcul\_1 X0 X1 X3 X4 X5)\Rightarrow(r1\_valuat\_1 X0 X3 X2 X4 X5)))))))) \quad (13) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\
& \quad (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3. \\
& \quad (m1\_valuat\_1\ X3\ X0\ X2) \Rightarrow (\forall X4.(m2\_funct\_2\ X4\ (k3\_qc\_lang1 \\
& \quad X0)\ X2\ (k2\_valuat\_1\ X0\ X2)) \Rightarrow ((r6\_calcul\_1\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow (\forall X5. \\
& \quad (m2\_subset\_1\ X5\ (k9\_qc\_lang1\ X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow ((X5 \in X1) \Rightarrow \\
& \quad (r1\_valuat\_1\ X0\ X2\ X5\ X3\ X4)))))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \tag{15}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (v1\_xboole\_0\ X1)) \tag{16}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\
& \quad (k3\_cqc\_lang\ X0))) \Rightarrow (\forall X2.(m2\_subset\_1\ X2\ (k9\_qc\_lang1 \\
& \quad X0)\ (k3\_cqc\_lang\ X0)) \Rightarrow (\forall X3.(\neg v1\_xboole\_0\ X3) \Rightarrow (\forall X4. \\
& \quad (m1\_valuat\_1\ X4\ X0\ X3) \Rightarrow (\forall X5.(m2\_funct\_2\ X5\ (k3\_qc\_lang1 \\
& \quad X0)\ X3\ (k2\_valuat\_1\ X0\ X3)) \Rightarrow (\neg(r7\_calcul\_1\ X0\ X1\ X2) \wedge (r6\_calcul\_1 \\
& \quad X0\ (k4\_subset\_1\ (k3\_cqc\_lang\ X0)\ X1\ (k6\_domain\_1\ (k3\_cqc\_lang \\
& \quad X0)\ (k6\_cqc\_lang\ X0\ X2)))\ X3\ X4\ X5)))))))))
\end{aligned}$$