

t47_valuat_1

(TMb7FZQ75VJjQceLgo48Mzwn87FqcxwmAdn)

October 27, 2020

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 $k9_qc_lang1 : \iota \Rightarrow \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_cqc_lang : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k24_qc_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_margrel1 : \iota$ be given. Let $k8_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_valuat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_margrel1 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X2.(m2_subset_1 X2 (k2_qc_lang1 \\ & X0) (k3_qc_lang1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k9_qc_lang1 \\ & X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg X1 \in k24_qc_lang1 X0 X3) \wedge (X1 \in k24_qc_lang1 \\ & X0 (k13_cqc_lang X0 X3 X2))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\ & \forall X2.(m2_subset_1 X2 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow \\ & (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow \\ & (\forall X4.(m2_subset_1 X4 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow \\ & (\forall X5.(m2_subset_1 X5 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow \\ & (\forall X6.(m1_valuat_1 X6 X0 X1) \Rightarrow (\forall X7.(m1_subset_1 X7 \\ & (k9_qc_lang1 X0)) \Rightarrow (((X4 = k13_cqc_lang X0 X7 X2) \wedge (X5 = k13_cqc_lang \\ & X0 X7 X3)) \Rightarrow ((X2 = X3) \vee (\forall X8.(m2_funct_2 X8 (k3_qc_lang1 X0) \\ & X1 (k2_valuat_1 X0 X1)) \Rightarrow ((k3_funct_2 (k3_qc_lang1 X0) X1 X8 X2 = \\ & k3_funct_2 (k3_qc_lang1 X0) X1 X8 X3) \Rightarrow (k3_funct_2 (k2_valuat_1 \\ & X0 X1) k6_margrel1 (k8_valuat_1 X0 X1 X6 X4) X8 = k3_funct_2 (k2_valuat_1 \\ & X0 X1) k6_margrel1 (k8_valuat_1 X0 X1 X6 X5) X8))))))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\
& \quad \forall X2.(m2_subset_1 X2 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow \\
& \quad (\forall X3.(m2_subset_1 X3 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow \\
& \quad (\forall X4.(m1_valuat_1 X4 X0 X1) \Rightarrow ((\neg X2 \in k24_qc_lang1 X0 X3) \Rightarrow \\
& \quad (\forall X5.(m2_funct_2 X5 (k3_qc_lang1 X0) X1 (k2_valuat_1 X0 \\
& \quad X1)) \Rightarrow (\forall X6.(m2_funct_2 X6 (k3_qc_lang1 X0) X1 (k2_valuat_1 \\
& \quad X0 X1)) \Rightarrow ((\forall X7.(m2_subset_1 X7 (k2_qc_lang1 X0) (k3_qc_lang1 \\
& \quad X0)) \Rightarrow ((X2 \neq X7) \Rightarrow (k3_funct_2 (k3_qc_lang1 X0) X1 X6 X7 = k3_funct_2 \\
& \quad (k3_qc_lang1 X0) X1 X5 X7))) \Rightarrow (k3_funct_2 (k2_valuat_1 X0 X1) k6_margrel1 \\
& \quad (k8_valuat_1 X0 X1 X4 X3) X5 = k3_funct_2 (k2_valuat_1 X0 X1) k6_margrel1 \\
& \quad (k8_valuat_1 X0 X1 X4 X3) X6))))))))) \\
& \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\
& \quad \forall X2.(m2_subset_1 X2 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow \\
& \quad (\forall X3.(m2_subset_1 X3 (k2_qc_lang1 X0) (k3_qc_lang1 X0)) \Rightarrow \\
& \quad (\forall X4.(m2_funct_2 X4 (k3_qc_lang1 X0) X1 (k2_valuat_1 X0 \\
& \quad X1)) \Rightarrow (\forall X5.(m2_funct_2 X5 (k3_qc_lang1 X0) X1 (k2_valuat_1 \\
& \quad X0 X1)) \Rightarrow (\exists X6.(m2_funct_2 X6 (k3_qc_lang1 X0) X1 (k2_valuat_1 \\
& \quad X0 X1)) \wedge ((\forall X7.(m2_subset_1 X7 (k2_qc_lang1 X0) (k3_qc_lang1 \\
& \quad X0)) \Rightarrow ((X7 \neq X2) \Rightarrow (k3_funct_2 (k3_qc_lang1 X0) X1 X6 X7 = k3_funct_2 \\
& \quad (k3_qc_lang1 X0) X1 X4 X7))) \wedge (k3_funct_2 (k3_qc_lang1 X0) X1 X6 \\
& \quad X2 = k3_funct_2 (k3_qc_lang1 X0) X1 X5 X3))))))))) \\
& \tag{4}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\
& \quad \forall X2.(m1_valuat_1 X2 X0 X1) \Rightarrow (\forall X3.(m2_subset_1 X3 \\
& \quad (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow ((r2_valuat_1 X0 X1 X2 X3) \Leftrightarrow \\
& \quad (\forall X4.(m2_funct_2 X4 (k3_qc_lang1 X0) X1 (k2_valuat_1 X0 \\
& \quad X1)) \Rightarrow (r1_valuat_1 X0 X1 X3 X2 X4)))))) \\
& \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_qc_lang1 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\\
& \quad \forall X2.(m2_subset_1 X2 (k9_qc_lang1 X0) (k3_cqc_lang X0)) \Rightarrow \\
& \quad (\forall X3.(m1_valuat_1 X3 X0 X1) \Rightarrow (\forall X4.(m2_funct_2 X4 \\
& \quad (k3_qc_lang1 X0) X1 (k2_valuat_1 X0 X1)) \Rightarrow ((r1_valuat_1 X0 X1 X2 \\
& \quad X3 X4) \Leftrightarrow (k3_funct_2 (k2_valuat_1 X0 X1) k6_margrel1 (k8_valuat_1 \\
& \quad X0 X1 X3 X2) X4 = k8_margrel1)))))) \\
& \tag{6}
\end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_qc_lang1\ X0) \Rightarrow (\forall X1.(\neg v1_xboole_0\ X1) \Rightarrow (\\ & \forall X2.(m2_subset_1\ X2\ (k2_qc_lang1\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow \\ & (\forall X3.(m2_subset_1\ X3\ (k2_qc_lang1\ X0)\ (k3_qc_lang1\ X0)) \Rightarrow \\ & (\forall X4.(m2_subset_1\ X4\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow \\ & (\forall X5.(m2_subset_1\ X5\ (k9_qc_lang1\ X0)\ (k3_cqc_lang\ X0)) \Rightarrow \\ & (\forall X6.(m1_valuat_1\ X6\ X0\ X1) \Rightarrow (\forall X7.(m1_subset_1\ X7 \\ & (k9_qc_lang1\ X0)) \Rightarrow (((X4 = k13_cqc_lang\ X0\ X7\ X2) \wedge ((X5 = k13_cqc_lang \\ & X0\ X7\ X3) \wedge (r2_valuat_1\ X0\ X1\ X6\ X4))) \Rightarrow ((X2 \in k24_qc_lang1\ X0\ X7) \vee \\ & (r2_valuat_1\ X0\ X1\ X6\ X5)))))))))) \end{aligned}$$