

t51_semi_af1 (TMVFi-
JUAQ1TUgm64Yy889xP6Ezu4eemKZQY)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_semi_af1 : \iota \Rightarrow o$ be given. Let $l1_analoaf : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_semi_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_semi_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_semi_af1 X0) \wedge (l1_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\
& \quad X6 (u1_struct_0 X0)) \Rightarrow (((r2_semi_af1 X0 X4 X5 X1 X2) \wedge (r2_semi_af1 \\
& \quad X0 X4 X5 X3 X6)) \Rightarrow ((r1_semi_af1 X0 X1 X2 X3) \vee (r2_semi_af1 X0 X1 X2 X3 \\
& \quad X6))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_semi_af1 X0) \wedge (l1_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad ((r2_semi_af1 X0 X1 X2 X3 X4) \Rightarrow ((\neg r1_semi_af1 X0 X1 X2 X3) \wedge ((\neg r1_semi_af1 \\
& \quad X0 X2 X1 X4) \wedge ((\neg r1_semi_af1 X0 X3 X4 X1) \wedge (\neg r1_semi_af1 X0 X4 X3 X2))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_semi_af1 X0) \wedge (l1_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (((r1_semi_af1 X0 X1 X2 X4) \wedge (r1_semi_af1 X0 X1 X3 X4)) \Rightarrow ((r1_semi_af1 \\
& \quad X0 X1 X2 X3) \vee (X1 = X4))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_semi_af1 X0) \wedge (l1_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow ((r1_semi_af1 X0 X1 X2 X3) \Rightarrow ((r1_semi_af1 X0 \\
& \quad X1 X3 X2) \wedge ((r1_semi_af1 X0 X2 X1 X3) \wedge ((r1_semi_af1 X0 X2 X3 X1) \wedge (\\
& \quad (r1_semi_af1 X0 X3 X1 X2) \wedge (r1_semi_af1 X0 X3 X2 X1)))))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_semi_af1 X0) \wedge (l1_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\
& \quad X6 (u1_struct_0 X0)) \Rightarrow (((r1_semi_af1 X0 X1 X2 X3) \wedge ((r2_semi_af1 \\
& \quad X0 X1 X4 X2 X5) \wedge (r2_semi_af1 X0 X1 X4 X3 X6))) \Rightarrow ((X2 = X3) \vee (r2_semi_af1 \\
& \quad X0 X2 X5 X3 X6)))))))))
\end{aligned}$$