

t44_bciideal
(TMF2AHBuR7HzDLCZ1q4EVWD6ovDGe3UYtrR)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_bciideal_1 : \iota \Rightarrow o$ be given. Let $v4_bciideal_1 : \iota \Rightarrow o$ be given. Let $v5_bciideal_1 : \iota \Rightarrow o$ be given. Let $v7_bciideal_1 : \iota \Rightarrow o$ be given. Let $v8_bciideal_1 : \iota \Rightarrow o$ be given. Let $l2_bciideal_1 : \iota \Rightarrow o$ be given. Let $v3_bciideal : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_bciideal_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_bciideal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_bciideal_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_bciideal_3 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bciideal_1 X0) \wedge ((v4_bciideal_1 \\
& X0) \wedge ((v5_bciideal_1 X0) \wedge ((v7_bciideal_1 X0) \wedge ((v8_bciideal_1 X0) \wedge \\
& (l2_bciideal_1 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v3_bciideal_1 X0) \wedge \\
& ((v4_bciideal_1 X0) \wedge ((v5_bciideal_1 X0) \wedge ((v7_bciideal_1 X0) \wedge ((v8_bciideal_1 \\
& X0) \wedge ((v1_bciideal_3 X0) \wedge (l2_bciideal_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_bciideal_1 X0 X1 X2 = X1) \Leftrightarrow (k1_bciideal_1 X0 \\
& X2 (k1_bciideal_1 X0 X2 X1) = k4_struct_0 X0)))))) \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bciideal_1 X0) \wedge ((v4_bciideal_1 \\
& X0) \wedge ((v5_bciideal_1 X0) \wedge ((v7_bciideal_1 X0) \wedge ((v8_bciideal_1 X0) \wedge \\
& (l2_bciideal_1 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v3_bciideal_1 X0) \wedge \\
& ((v4_bciideal_1 X0) \wedge ((v5_bciideal_1 X0) \wedge ((v7_bciideal_1 X0) \wedge ((v8_bciideal_1 \\
& X0) \wedge ((v1_bciideal_3 X0) \wedge (l2_bciideal_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& ((r1_bciideal_1 X0 X2 X3) \Rightarrow (k1_bciideal_1 X0 (k1_bciideal_1 X0 X3 X1) (\\
& k1_bciideal_1 X0 X3 X2) = k1_bciideal_1 X0 X2 X1)))))) \tag{2}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\
& X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v8_bialg_1 X0) \wedge \\
& (l2_bialg_1 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge \\
& ((v4_bialg_1 X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v8_bialg_1 \\
& X0) \wedge ((v1_bialg_3 X0) \wedge (l2_bialg_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_bialg_1 X0 X1 X2 = X1) \Rightarrow (k1_bialg_1 X0 \\
& X2 X1 = X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\
& X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v8_bialg_1 X0) \wedge \\
& (l2_bialg_1 X0)))))) \Rightarrow (((v3_bciideal (k1_tarski (k4_struct_0 \\
& X0)) X0) \wedge (m2_bialg_1 (k1_tarski (k4_struct_0 X0)) X0)) \Leftrightarrow ((\neg v2_struct_0 \\
& X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 X0) \wedge ((v5_bialg_1 X0) \wedge \\
& ((v7_bialg_1 X0) \wedge ((v8_bialg_1 X0) \wedge ((v1_bialg_3 X0) \wedge (l2_bialg_1 \\
& X0)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\
& X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v8_bialg_1 X0) \wedge \\
& (l2_bialg_1 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge \\
& ((v4_bialg_1 X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v8_bialg_1 \\
& X0) \wedge ((v1_bialg_3 X0) \wedge (l2_bialg_1 X0)))))) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_bialg_1 X0 X1 (k1_bialg_1 X0 X2 (k1_bialg_1 \\
& X0 X2 X1)) = k1_bialg_1 X0 X1 X2) \wedge (k1_bialg_1 X0 (k1_bialg_1 X0 \\
& X1 X2) (k1_bialg_1 X0 (k1_bialg_1 X0 X1 X2) X1) = k1_bialg_1 X0 \\
& X1 X2))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\
& X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v8_bcialg_1 X0) \wedge \\
& (l2_bcialg_1 X0)))))) \Rightarrow (((v3_bciideal (k1_tarski (k4_struct_0 \\
& X0)) X0) \wedge (m2_bcialg_1 (k1_tarski (k4_struct_0 X0)) X0)) \Rightarrow ((\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_bcialg_1 X0 X1 X2 = X1) \Leftrightarrow (k1_bcialg_1 X0 \\
& X2 (k1_bcialg_1 X0 X2 X1) = k4_struct_0 X0)))) \wedge ((\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow ((k1_bcialg_1 X0 X1 X2 = X1) \Rightarrow (k1_bcialg_1 X0 X2 X1 = X2)))) \wedge \\
& ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(\\
& m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow ((r1_bcialg_1 X0 X2 X3) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 \\
& X0 X3 X1) (k1_bcialg_1 X0 X3 X2) = k1_bcialg_1 X0 X2 X1)))))) \wedge ((\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_bcialg_1 X0 X1 (k1_bcialg_1 X0 X2 (k1_bcialg_1 \\
& X0 X2 X1)) = k1_bcialg_1 X0 X1 X2) \wedge (k1_bcialg_1 X0 (k1_bcialg_1 X0 \\
& X1 X2) (k1_bcialg_1 X0 (k1_bcialg_1 X0 X1 X2) X1) = k1_bcialg_1 X0 \\
& X1 X2)))) \wedge (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow ((r1_bcialg_1 X0 X1 X3) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 \\
& X0 X3 X2) (k1_bcialg_1 X0 (k1_bcialg_1 X0 X3 X2) (k1_bcialg_1 X0 X3 \\
& X1)) = k1_bcialg_1 X0 (k1_bcialg_1 X0 X3 X2) (k1_bcialg_1 X0 X1 X2))))))))))
\end{aligned}$$