

l133_bcialg_1

(TMPBp9p8xyZhA3JN5Cw5i1xGenS8oTRnioK)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_bcialg_1 : \iota \Rightarrow o$ be given. Let $v4_bcialg_1 : \iota \Rightarrow o$ be given. Let $v5_bcialg_1 : \iota \Rightarrow o$ be given. Let $v7_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_bcialg_1 : \iota \Rightarrow o$ be given. Let $v19_bcialg_1 : \iota \Rightarrow o$ be given. Let $v16_bcialg_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_bcialg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 X0 X1 X2) X3 = k1_bcialg_1 X0 (\\ & k1_bcialg_1 X0 X1 X3) X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & ((v19_bcialg_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 \\ & X0 X1 X2) (k1_bcialg_1 X0 X3 X2) = k1_bcialg_1 X0 X1 X3)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(l2_bcialg_1 X0) \Rightarrow ((l1_bcialg_1 X0) \wedge (l2_struct_0 X0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l1_bcialg_1 X0) \wedge ((m1_subset_1 \\ & X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 \\ & (k1_bcialg_1 X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\
& X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\
& ((v16_bcialg_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 \\
& X0 X1 X2) X3 = k1_bcialg_1 X0 (k1_bcialg_1 X0 (k1_bcialg_1 X0 X1 X3) \\
& X3) (k1_bcialg_1 X0 X2 X3))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\
& X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\
& (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge ((\\
& v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v19_bcialg_1 X0) \wedge (l2_bcialg_1 \\
& X0)))))) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\
& X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v16_bcialg_1 X0) \wedge \\
& (l2_bcialg_1 X0))))))))))
\end{aligned}$$