

t27_bcialg_3

(TMHWM9b4Xsqupd2qb5Gj7YHGYyrEJadewks)

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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 $v8_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_bcialg_1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_bcialg_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_bcialg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_bcialg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $l1_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) \Rightarrow ((m2_bcialg_1 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (((X2 \in X1) \wedge (r1_bcialg_1 X0 X3 X2)) \Rightarrow (X3 \in X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v8_bcialg_1 X0) \wedge \\ & (l2_bcialg_1 X0)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2.((\neg v2_struct_0 \\ & X2) \wedge ((v3_bcialg_1 X2) \wedge ((v4_bcialg_1 X2) \wedge ((v5_bcialg_1 X2) \wedge \\ & ((v7_bcialg_1 X2) \wedge ((v8_bcialg_1 X2) \wedge (l2_bcialg_1 X2)))))) \Rightarrow \\ & (m1_bcialg_3 X1 X2) \Rightarrow (m2_bcialg_1 X1 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l2_bcialg_1 X0)) \Rightarrow & (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge \\ & ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Leftrightarrow ((v7_bcialg_1 X0) \wedge \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k1_bcialg_1 X0 (k1_bcialg_1 X0 (k1_bcialg_1 X0 X1 X2) (k1_bcialg_1 X0 X1 X3)) (k1_bcialg_1 X0 X3 X2) = k4_struct_0 X0) \wedge (k1_bcialg_1 X0 X1 (k4_struct_0 X0) = X1))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow & (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v8_bcialg_1 X0) \wedge (l2_bcialg_1 X0))))))) \Rightarrow & (\forall X1.(m1_bcialg_3 X1 X0) \Rightarrow ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l2_bcialg_1 X0) \Rightarrow ((l1_bcialg_1 X0) \wedge (l2_struct_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((l1_bcialg_1 X0) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow & (m1_subset_1 (k1_bcialg_1 X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l2_bcialg_1 X0)) \Rightarrow & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_bcialg_1 X0 X1 X2) \Leftrightarrow (k1_bcialg_1 X0 X1 X2 = k4_struct_0 X0)))) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v8_bcialg_1 X0) \wedge (l2_bcialg_1 X0))))))) \Rightarrow & (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((m1_bcialg_3 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k1_bcialg_1 X0 X2 (k1_bcialg_1 X0 X2 X3) \in X1) \Rightarrow (k1_bcialg_1 X0 (k1_bcialg_1 X0 X3 (k1_bcialg_1 X0 X3 X2)) (k1_bcialg_1 X0 X2 X3) \in X1)))))) \end{aligned}$$