

l70_bcialg_6

(TMZam1W6r6FXkEu2rKCcHo7hEDKoEXh189m)

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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 $m1_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v12_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m5_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_bcialg_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m4_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_tarski : \iota \Rightarrow \iota$ be given. Let $k9_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (v3_bcialg_1 X0) \wedge ((v4_bcialg_1 X0) \wedge (v5_bcialg_1 X0) \wedge (v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))) \wedge (m2_bcialg_1 X1 X0)) \Rightarrow (\forall X2. (m5_bcialg_2 X2 X0 X1) \Leftrightarrow (m4_bcialg_2 X2 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0. \exists X1. m1_subset_1 X1 X0 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 X0) \wedge ((v5_bialg_1 X0) \wedge \\ & ((v7_bialg_1 X0) \wedge (l2_bialg_1 X0)))))) \wedge ((m1_bialg_1 X1 X0) \wedge \\ & ((v12_bialg_1 X2 X0) \wedge (m2_bialg_1 X2 X0)) \wedge (m4_bialg_2 X3 X0 \\ & X2))) \Rightarrow ((\neg v1_xboole_0 (k7_bialg_6 X0 X1 X2 X3)) \wedge (m1_subset_1 \\ & (k7_bialg_6 X0 X1 X2 X3) (k1_zfmisc_1 (u1_struct_0 X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (X1 = k3_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\ & (\exists X3. (X2 \in X3) \wedge (X3 \in X0))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\ & X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge (l2_bialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_bialg_1 X1 X0) \Rightarrow (\forall X2. ((v12_bialg_1 X2 \\ & X0) \wedge (m2_bialg_1 X2 X0)) \Rightarrow (\forall X3. (m5_bialg_2 X3 X0 X2) \Rightarrow (\\ & k7_bialg_6 X0 X1 X2 X3 = k3_tarski (ReplSep (toset (\lambda X4 : \iota. \\ & m1_subset_1 X4 (u1_struct_0 X1))) (\lambda X4 : \iota. k6_eqrel_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0) X3 X4 \in u1_struct_0 (k9_bialg_2 X0 X3)) (\lambda X4 : \\ & \iota. k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) X3 X4)))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\ & X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge (l2_bialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_bialg_1 X1 X0) \Rightarrow (\forall X2. ((v12_bialg_1 X2 \\ & X0) \wedge (m2_bialg_1 X2 X0)) \Rightarrow (\forall X3. (m5_bialg_2 X3 X0 X2) \Rightarrow (\\ & \forall X4. (m2_subset_1 X4 (u1_struct_0 X0) (k7_bialg_6 X0 X1 \\ & X2 X3)) \Rightarrow (\exists X5. (m1_subset_1 X5 (u1_struct_0 X1)) \wedge (X4 \in k6_eqrel_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0) X3 X5)))))) \end{aligned}$$