

t48_bcialg_2

(TMcRMjshLXBW4sq3GfTEz8ooeyAmGtiTt7X)

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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 $m2_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m4_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_bcialg_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_bcialg_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m5_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v12_bcialg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m3_bcialg_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow & (1) \\ ((v12_bcialg_1 (u1_struct_0 X0) X0) \wedge (m2_bcialg_1 (u1_struct_0 \\ X0) X0)) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow & (2) \\ (\forall X1. (m2_bcialg_1 X1 X0) \Rightarrow (\forall X2. (m2_bcialg_1 X2 X0) \Rightarrow \\ (\forall X3. (m5_bcialg_2 X3 X0 X1) \Rightarrow (\forall X4. (m5_bcialg_2 X4 \\ X0 X2) \Rightarrow ((k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) X3 (k4_struct_0 \\ X0) = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) X4 (k4_struct_0 \\ X0)) \Rightarrow (X3 = X4)))))) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ & X1) \Rightarrow ((v12_bcialg_1 X1 X0) \Leftrightarrow (X1 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0) X2 (k4_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ & X1) \Rightarrow (r1_tarski (k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) \\ & X2 (k4_struct_0 X0)) X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ & X1) \Rightarrow (m1_bcialg_2 X2 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.((v1_partfun1 X1 (u1_struct_0 X0)) \wedge ((v3_relat_2 \\ & X1) \wedge ((v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0))))))) \Rightarrow ((m1_bcialg_2 X1 X0) \Leftrightarrow \\ & ((m3_bcialg_2 X1 X0) \wedge (m2_bcialg_2 X1 X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge \\ & ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 \\ & X0)))))) \wedge (m2_bcialg_1 X1 X0)) \Rightarrow (\forall X2.(m5_bcialg_2 X2 X0 \\ & X1) \Leftrightarrow (m4_bcialg_2 X2 X0 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge \\ & ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 \\ & X0)))))) \wedge (m2_bcialg_1 X1 X0)) \Rightarrow (\exists X2.m4_bcialg_2 X2 X0 X1) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge \\ & ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 \\ & X0)))))) \wedge (m2_bcialg_1 X1 X0)) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ & X1) \Rightarrow (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ (\forall X1.(m1_bcialg_2 X1 X0) \Rightarrow ((v1_partfun1 X1 (u1_struct_0 \\ X0)) \wedge ((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1) \Leftrightarrow ((r1_tarski X0 X1) \wedge (r1_tarski X1 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge \\ ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 \\ X0)))))) \wedge (m2_bcialg_1 X1 X0)) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ X1) \Rightarrow ((v1_partfun1 X2 (u1_struct_0 X0)) \wedge ((v3_relat_2 X2) \wedge (v8_relat_2 \\ X2)))))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ (\forall X1.(m2_bcialg_1 X1 X0) \Rightarrow (\forall X2.(m4_bcialg_2 X2 X0 \\ X1) \Rightarrow (\forall X3.(m1_bcialg_2 X3 X0) \Rightarrow ((\forall X4.(m2_bcialg_2 \\ X4 X0) \Rightarrow (m5_bcialg_2 X4 X0 X1)) \Rightarrow (X3 = X2)))))) \end{aligned}$$