

t34_bcialg_2 (TMHuAaAcAvQJZxdPbFahfpH- SZBPpC7DFf3b)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v5_bcialg_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_bcialg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k1_bcialg_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $l1_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_bcialg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 k5_numbers) \Rightarrow (k2_bcialg_1 X0 (k1_bcialg_2 X0 (k4_struct_0 X0) \\ & X1 X2) = k1_bcialg_2 X0 (k4_struct_0 X0) (k2_bcialg_1 X0 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 k5_numbers) \Rightarrow (k2_bcialg_1 X0 (k2_bcialg_1 X0 (k1_bcialg_2 X0 \\ & (k4_struct_0 X0) X1 X2)) = k1_bcialg_2 X0 (k4_struct_0 X0) X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (3)$$

Assume the following.

$$\forall X0. (l2_bcialg_1 X0) \Rightarrow ((l1_bcialg_1 X0) \wedge (l2_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l2_struct_0 X0) \Rightarrow (m1_subset_1 (k4_struct_0 X0) (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge \\ & ((v4_bcialg_1 X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 \\ & X0)))))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v1_xboole_0 \\ & (k2_bcialg_2 X0 X1)) \wedge (m1_subset_1 (k2_bcialg_2 X0 X1) k5_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l2_bcialg_1 X0)) \wedge \\ & (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k2_bcialg_1 \\ & X0 X1) (u1_struct_0 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v5_bcialg_2 \\ & X1 X0) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 k5_numbers)) \Rightarrow \\ & ((X2 = k2_bcialg_2 X0 X1) \Leftrightarrow ((k1_bcialg_2 X0 (k4_struct_0 X0) X1 X2 = \\ & k4_struct_0 X0) \wedge (\forall X3. (m1_subset_1 X3 k5_numbers) \Rightarrow ((k1_bcialg_2 \\ & X0 (k4_struct_0 X0) X1 X3 = k4_struct_0 X0) \Rightarrow ((X3 = k6_numbers) \vee (\\ & r1_xxreal_0 X2 X3)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v5_bcialg_2 \\ & X1 X0) \Leftrightarrow (\exists X2. ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 k5_numbers)) \wedge \\ & (k1_bcialg_2 X0 (k4_struct_0 X0) X1 X2 = k4_struct_0 X0)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_bcialg_1 X0)) \Rightarrow ((v5_bcialg_1 \\ & X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k1_bcialg_1 \\ & X0 X1 X1 = k4_struct_0 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_bcialg_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k2_bcialg_1 X0 X1 = k1_bcialg_1 \\ & X0 (k4_struct_0 X0) X1)) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v5_bcialg_2 \\ & X1 X0) \Rightarrow (k2_bcialg_2 X0 X1 = k2_bcialg_2 X0 (k2_bcialg_1 X0 X1)))) \end{aligned}$$