

t24_bcialg_4

(TMR12St8C8zRuUULzHmiEY2hLdPpm8VQvjw)

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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 $v2_bcialg_4 : \iota \Rightarrow o$ be given. Let $l1_bcialg_4 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_bcialg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k1_bcialg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k5_bcialg_4 : \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v2_bcialg_4 X0) \wedge \\ & (l1_bcialg_4 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (k6_bcialg_4 X0 X1 np_2 = k1_bcialg_4 X0 X1 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$k2_xcmplx_0 \ np_2 \ np_1 = np_3 \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 \ X0 \ k5_numbers)\wedge(v7_ordinal1 \ X1))\Rightarrow(k2_nat_1 \ X0 \ X1 = k2_xcmplx_0 \ X0 \ X1) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 \ X0)\wedge((v3_bcialg_1 \ X0)\wedge((v4_bcialg_1 \\ & \ X0)\wedge((v5_bcialg_1 \ X0)\wedge((v7_bcialg_1 \ X0)\wedge((v2_bcialg_4 \ X0)\wedge \\ & (l1_bcialg_4 \ X0))))))\Rightarrow((v1_funct_1 \ (k5_bcialg_4 \ X0))\wedge((v1_funct_2 \\ & (k5_bcialg_4 \ X0) \ (k2_zfmisc_1 \ (u1_struct_0 \ X0) \ k5_numbers) \ (u1_struct_0 \\ & \ X0))\wedge(m1_subset_1 \ (k5_bcialg_4 \ X0) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & \ (k2_zfmisc_1 \ (u1_struct_0 \ X0) \ k5_numbers) \ (u1_struct_0 \ X0)))))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 \ X0)\wedge((v3_bcialg_1 \ X0)\wedge((v4_bcialg_1 \\ & \ X0)\wedge((v5_bcialg_1 \ X0)\wedge((v7_bcialg_1 \ X0)\wedge((v2_bcialg_4 \ X0)\wedge \\ & (l1_bcialg_4 \ X0))))))\Rightarrow(\forall X1.(m1_subset_1 \ X1 \ (u1_struct_0 \\ & \ X0))\Rightarrow(\forall X2.(m1_subset_1 \ X2 \ k5_numbers)\Rightarrow(k6_bcialg_4 \ X0 \\ & \ X1 \ X2 = k2_binop_1 \ (u1_struct_0 \ X0) \ k5_numbers \ (u1_struct_0 \ X0) \\ & \ (k5_bcialg_4 \ X0) \ X1 \ X2))) \quad (9) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 \ X0)\wedge((v3_bcialg_1 \ X0)\wedge((v4_bcialg_1 \\ & \ X0)\wedge((v5_bcialg_1 \ X0)\wedge((v7_bcialg_1 \ X0)\wedge((v2_bcialg_4 \ X0)\wedge \\ & (l1_bcialg_4 \ X0))))))\Rightarrow(\forall X1.((v1_funct_1 \ X1)\wedge((v1_funct_2 \\ & \ X1 \ (k2_zfmisc_1 \ (u1_struct_0 \ X0) \ k5_numbers) \ (u1_struct_0 \ X0))\wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ (u1_struct_0 \\ & \ X0) \ k5_numbers) \ (u1_struct_0 \ X0))))))\Rightarrow((X1 = k5_bcialg_4 \ X0)\Leftrightarrow \\ & \ (vX2.(m1_subset_1 \ X2 \ (u1_struct_0 \ X0))\Rightarrow((k2_binop_1 \ (\\ & \ u1_struct_0 \ X0) \ k5_numbers \ (u1_struct_0 \ X0) \ X1 \ X2 \ k6_numbers = k4_struct_0 \\ & \ X0)\wedge(\forall X3.(m1_subset_1 \ X3 \ k5_numbers)\Rightarrow(k2_binop_1 \ (u1_struct_0 \\ & \ X0) \ k5_numbers \ (u1_struct_0 \ X0) \ X1 \ X2 \ (k2_nat_1 \ X3 \ np_1) = k1_bcialg_4 \\ & \ X0 \ (k2_binop_1 \ (u1_struct_0 \ X0) \ k5_numbers \ (u1_struct_0 \ X0) \ X1 \\ & \ X2 \ X3) \ X2)))))) \quad (10) \end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k4_ordinal1)\Rightarrow(v7_ordinal1 \ X0) \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\ &X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v2_bialg_4 X0) \wedge \\ &(l1_bialg_4 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ &X0)) \Rightarrow (k6_bialg_4 X0 X1 \text{ np_3} = k1_bialg_4 X0 (k1_bialg_4 X0 X1 \\ &X1) X1)) \end{aligned}$$