

l25_bcialg_4

(TMG38SHhnz4ZJeduFM9q3FHe93uwmuPZGip)

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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 $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_bcialg_4 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_bcialg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ 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 $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge ((v2_bcialg_4 X0) \wedge \\ & (l1_bcialg_4 X0))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k1_bcialg_4 \\ & X0 X1 X2 = k1_bcialg_4 X0 X2 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\ & ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \wedge ((m1_subset_1 X2 X0) \wedge \\ & (m1_subset_1 X3 X0))) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_bialg_4 X0) \Rightarrow & ((v1_funct_1 (u1_bialg_4 X0)) \wedge \\ & ((v1_funct_2 (u1_bialg_4 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)) \wedge (m1_subset_1 (u1_bialg_4 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_funct_1 X1) \wedge & ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0))))) \Rightarrow & ((v1_binop_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 \\ & X0) \Rightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k3_binop_1 \\ & X0 X1 X3 X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_bialg_4 X0) \Rightarrow & (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k1_bialg_4 \\ & X0 X1 X2 = k5_binop_1 (u1_struct_0 X0) (u1_bialg_4 X0) X1 X2))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge & ((v3_bialg_1 X0) \wedge ((v4_bialg_1 \\ & X0) \wedge ((v5_bialg_1 X0) \wedge ((v7_bialg_1 X0) \wedge ((v2_bialg_4 X0) \wedge \\ & (l1_bialg_4 X0)))))) \Rightarrow & (v1_binop_1 (u1_bialg_4 X0) (u1_struct_0 \\ & X0)) \end{aligned}$$