

t57\_group\_4  
(TMJWMf24BFTu1HMpmMHwsJqsoCc3WHLZJTZ)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (((m1\_group\_2 X0 X1) \wedge \\ & (m1\_group\_2 X1 X0)) \Rightarrow (g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 \\ & X0) = g3\_algstr\_0 (u1\_struct\_0 X1) (u2\_algstr\_0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (((v15\_algstr\_0 X1) \wedge \\ & (m1\_group\_2 X1 X0)) \wedge ((v15\_algstr\_0 X2) \wedge (m1\_group\_2 X2 X0)))) \Rightarrow \\ & ((r1\_group\_2 X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1\_group\_2 X2 X0) \Rightarrow (\forall X3.(m1\_group\_2 X3 X0) \Rightarrow (m1\_group\_2 \\ & (k8\_group\_4 X0 (k8\_group\_4 X0 X1 X2) X3) (k8\_group\_4 X0 X1 (k8\_group\_4 \\ & X0 X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge (l3\_algstr\_0 \\ & X0))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge (l3\_algstr\_0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 \\ X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge((m1\_group\_2 X1 X0)\wedge \\ (m1\_group\_2 X2 X0))\Rightarrow((v15\_algstr\_0 (k8\_group\_4 X0 X1 X2))\wedge(m1\_group\_2 \\ (k8\_group\_4 X0 X1 X2) X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge \\ ((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(m1\_group\_2 X1 X0)\Rightarrow(m1\_subset\_1 \\ (k8\_group\_2 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2. \\ (m1\_group\_2 X2 X0)\Rightarrow(k8\_group\_4 X0 X1 X2 = k5\_group\_4 X0 (k4\_subset\_1 \\ (u1\_struct\_0 X0) (k8\_group\_2 X0 X1) (k8\_group\_2 X0 X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(k8\_group\_2 \\ X0 X1 = u1\_struct\_0 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)))\Rightarrow(k4\_subset\_1 X0 X1 X2 = \\ k4\_subset\_1 X0 X2 X1) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(v3\_group\_1 \\ X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0)\Rightarrow((v15\_algstr\_0 X0)\Rightarrow(X0 = g3\_algstr\_0 \\ (u1\_struct\_0 X0) (u2\_algstr\_0 X0))) \end{aligned} \quad (11)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2. \\ (m1\_group\_2 X2 X0)\Rightarrow(\forall X3.(m1\_group\_2 X3 X0)\Rightarrow(r1\_group\_2 \\ X0 (k8\_group\_4 X0 (k8\_group\_4 X0 X1 X2) X3) (k8\_group\_4 X0 X1 (k8\_group\_4 \\ X0 X2 X3)))))) \end{aligned}$$