

t69\_group\_3  
(TMbR25w39UwW8VqPVnk3FHyauRNjb9cB2dr)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_group\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_group\_2 : \iota \Rightarrow \iota$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_group\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  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  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (m1\_group\_2 X0 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\ & (k4\_group\_3 X0 X2 X1 = k5\_group\_2 X0 X1 (k4\_group\_2 X0 (k2\_group\_1 X0 X1) X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((k13\_group\_2 X0 (k7\_group\_2 X0) X1 = u1\_struct\_0 X0) \wedge (k14\_group\_2 X0 (k7\_group\_2 X0) X1 = u1\_struct\_0 X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 \\ & X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(((v15\_algstr\_0 X1)\wedge \\ & (m1\_group\_2 X1 X0))\wedge((v15\_algstr\_0 X2)\wedge(m1\_group\_2 X2 X0))))\Rightarrow \\ & ((r1\_group\_2 X0 X1 X2)\Leftrightarrow(X1 = X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\ & X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0) X0))))\Rightarrow(\forall X2.\forall X3.(g3\_algstr\_0 X0 X1 = g3\_algstr\_0 \\ & X2 X3)\Rightarrow((X0 = X2)\wedge(X1 = X3))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3\_algstr\_0 X0)\Rightarrow((v1\_funct\_1 (u2\_algstr\_0 X0))\wedge \\ & ((v1\_funct\_2 (u2\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u2\_algstr\_0 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge(l3\_algstr\_0 \\ & X0)))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 \\ & X1)\wedge(l3\_algstr\_0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge \\ & ((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(m1\_group\_2 X1 X0))\Rightarrow(m1\_subset\_1 \\ & (k8\_group\_2 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 \\ & X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow((v15\_algstr\_0 (k7\_group\_2 X0))\wedge(m1\_group\_2 \\ & (k7\_group\_2 X0) X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 \\ & X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge((m1\_group\_2 X1 X0)\wedge \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow((v15\_algstr\_0 (k6\_group\_3 \\ & X0 X1 X2))\wedge(m1\_group\_2 (k6\_group\_3 X0 X1 X2) X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k2\_group\_1 X0 X1) (u1\_struct\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(k8\_group\_2 X0 X1 = u1\_struct\_0 X1)) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(k7\_group\_2 X0 = g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.((v15\_algstr\_0 X3)\wedge(m1\_group\_2 X3 X0))\Rightarrow((X3 = k6\_group\_3 X0 X1 X2)\Leftrightarrow(u1\_struct\_0 X3 = k4\_group\_3 X0 (k8\_group\_2 X0 X1) X2)))))) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k14\_group\_2 X0 X1 X2 = k5\_group\_2 X0 X2 (k8\_group\_2 X0 X1)))) \quad (15)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k13\_group\_2 X0 X1 X2 = k4\_group\_2 X0 X2 (k8\_group\_2 X0 X1)))) \quad (16)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow((v15\_algstr\_0 X0)\Rightarrow(X0 = g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 X0))) \quad (17)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(r1\_group\_2 X0 (k6\_group\_3 X0 (k7\_group\_2 X0) X1) (k7\_group\_2 X0)))$$