

# t84\_group\_2 (TMWGLJkAy- WxY3ofnQPSbuEfNW4kuc1sn5dK)

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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  $k10\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v4\_finsub\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finsub\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k8\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1\_group\_2 X2 X0) \Rightarrow ((u1\_struct\_0 X1 = u1\_struct\_0 X2) \Rightarrow (g3\_algstr\_0 \\ & (u1\_struct\_0 X1) (u2\_algstr\_0 X1) = g3\_algstr\_0 (u1\_struct\_0 X2) \\ & (u2\_algstr\_0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k3\_xboole\_0 (k3\_xboole\_0 X0 X1) X2 = k3\_xboole\_0 X0 (k3\_xboole\_0 X1 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (((v15\_algstr\_0 X1) \wedge \\ & (m1\_group\_2 X1 X0)) \wedge ((v15\_algstr\_0 X2) \wedge (m1\_group\_2 X2 X0)))) \Rightarrow \\ & ((r1\_group\_2 X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v1\_xboole\_0 X0) \wedge (v4\_finsub\_1 \\ & X0)) \wedge ((m1\_subset\_1 X1 X0) \wedge (m1\_subset\_1 X2 X0))) \Rightarrow (k3\_finsub\_1 \\ & X0 X1 X2 = k3\_xboole\_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge((m1\_group\_2 X1 X0)\wedge(m1\_group\_2 X2 X0)))\Rightarrow(k10\_group\_2 X0 X1 X2 = k9\_group\_2 X0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \quad (6)$$

Assume the following.

$$\forall X0.v4\_finsub\_1 (k1\_zfmisc\_1 X0) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge(l3\_algstr\_0 X0)))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow((\neg v2\_struct\_0 X1)\wedge((v2\_group\_1 X1)\wedge(l3\_algstr\_0 X1)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(m1\_group\_2 X1 X0))\Rightarrow(m1\_subset\_1 (k8\_group\_2 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge((m1\_group\_2 X1 X0)\wedge(m1\_group\_2 X2 X0)))\Rightarrow((v15\_algstr\_0 (k10\_group\_2 X0 X1 X2))\wedge(m1\_group\_2 (k10\_group\_2 X0 X1 X2) X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(k8\_group\_2 X0 X1 = u1\_struct\_0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_group\_2 X1 X0)\Rightarrow(\forall X2.(m1\_group\_2 X2 X0)\Rightarrow(\forall X3.((v15\_algstr\_0 X3)\wedge(m1\_group\_2 X3 X0))\Rightarrow((X3 = k9\_group\_2 X0 X1 X2)\Leftrightarrow(u1\_struct\_0 X3 = k3\_finsub\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0) (k8\_group\_2 X0 X1) (k8\_group\_2 X0 X2))))))) \quad (12)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0 X0)\Rightarrow((v15\_algstr\_0 X0)\Rightarrow(X0 = g3\_algstr\_0 (u1\_struct\_0 X0) (u2\_algstr\_0 X0))) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1\_group\_2 X2 X0) \Rightarrow (\forall X3.(m1\_group\_2 X3 X0) \Rightarrow (r1\_group\_2 \\ & X0 (k10\_group\_2 X0 (k10\_group\_2 X0 X1 X2) X3) (k10\_group\_2 X0 X1 ( \\ & k10\_group\_2 X0 X2 X3)))))) \end{aligned}$$