

# t82\_group\_2 (TM- LUBNHe8PjS5EmNPNEJGPZbTiM6roTSfoD)

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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  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k8\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v1\_xboole\_0 X0) \wedge (v4\_finsub\_1 X0)) \wedge ((m1\_subset\_1 X1 X0) \wedge (m1\_subset\_1 X2 X0))) \Rightarrow (k3\_finsub\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \quad (1)$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \quad (2)$$

Assume the following.

$$\forall X0. v4\_finsub\_1 (k1\_zfmisc\_1 X0) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge (l3\_algstr\_0 X0))) \Rightarrow (\forall X1. (m1\_group\_2 X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \quad (4)$$

Assume the following.

$$\forall X0. (l3\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge ((m1\_group\_2 X1 X0) \wedge (m1\_group\_2 X2 X0))) \Rightarrow ((v15\_algstr\_0 (k9\_group\_2 X0 X1 X2)) \wedge (m1\_group\_2 (k9\_group\_2 X0 X1 X2) X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge \\ & ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (m1\_group\_2 X1 X0)) \Rightarrow (m1\_subset\_1 \\ & (k8\_group\_2 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (7)$$

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.

$$\begin{aligned} & \forall X0. (l1\_struct\_0 X0) \Rightarrow (\forall X1. (r1\_struct\_0 X0 X1) \Leftrightarrow \\ & (X1 \in u1\_struct\_0 X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1. (m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ & (m1\_group\_2 X2 X0) \Rightarrow (\forall X3. ((v15\_algstr\_0 X3) \wedge (m1\_group\_2 \\ & X3 X0)) \Rightarrow ((X3 = k9\_group\_2 X0 X1 X2) \Leftrightarrow (u1\_struct\_0 X3 = k3\_finsub\_1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0) (k8\_group\_2 X0 X1) (k8\_group\_2 \\ & X0 X2)))))) \end{aligned} \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge \\ & (v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1))) \Rightarrow (\forall X2. (m1\_group\_2 \\ & X2 X1) \Rightarrow (\forall X3. (m1\_group\_2 X3 X1) \Rightarrow ((r1\_struct\_0 (k9\_group\_2 \\ & X1 X2 X3) X0) \Leftrightarrow ((r1\_struct\_0 X2 X0) \wedge (r1\_struct\_0 X3 X0)))))) \end{aligned}$$