

## t71\_group\_4

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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  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_group\_4 : \iota \Rightarrow \iota$  be given. Let  $k1\_group\_3 : \iota \Rightarrow \iota$  be given. Let  $u1\_lattices : \iota \Rightarrow \iota$  be given. Let  $k10\_group\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $g3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_group\_4 : \iota \Rightarrow \iota$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $u2\_lattices : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1\_xboole\_0 X1) \wedge (\neg v1\_xboole\_0 X3) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X0 X1) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 X2 X3) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 X3)))))) \Rightarrow ((r1\_funct\_2 X0 X1 X2 X3 X4 X5) \Leftrightarrow (X4 = X5)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (\forall X3. \forall X4. \forall X5. \\ & (g3\_lattices X0 X1 X2 = g3\_lattices X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\neg v1\_xboole\_0 (k1\_group\_3 X0)) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow ((v1\_funct\_1 (k9\_group\_4 X0)) \wedge ((v1\_funct\_2 \\ (k9\_group\_4 X0) (k2\_zfmisc\_1 (k1\_group\_3 X0) (k1\_group\_3 X0)) \\ (k1\_group\_3 X0)) \wedge (m1\_subset\_1 (k9\_group\_4 X0) (k1\_zfmisc\_1 ( \\ k2\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_group\_3 X0) (k1\_group\_3 X0)) (k1\_group\_3 \\ X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow ((\neg v2\_struct\_0 (k11\_group\_4 X0)) \wedge ( \\ (v3\_lattices (k11\_group\_4 X0)) \wedge ((v10\_lattices (k11\_group\_4 \\ X0)) \wedge (l3\_lattices (k11\_group\_4 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow ((v1\_funct\_1 (k10\_group\_4 X0)) \wedge ((v1\_funct\_2 \\ (k10\_group\_4 X0) (k2\_zfmisc\_1 (k1\_group\_3 X0) (k1\_group\_3 X0)) \\ (k1\_group\_3 X0)) \wedge (m1\_subset\_1 (k10\_group\_4 X0) (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_group\_3 X0) (k1\_group\_3 X0)) (k1\_group\_3 \\ X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (k11\_group\_4 X0 = g3\_lattices (k1\_group\_3 \\ X0) (k9\_group\_4 X0) (k10\_group\_4 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_lattices X0) \Rightarrow ((v3\_lattices X0) \Rightarrow (X0 = g3\_lattices \\ (u1\_struct\_0 X0) (u2\_lattices X0) (u1\_lattices X0))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (r1\_funct\_2 (k2\_zfmisc\_1 (u1\_struct\_0 \\ (k11\_group\_4 X0) (u1\_struct\_0 (k11\_group\_4 X0))) (u1\_struct\_0 \\ (k11\_group\_4 X0)) (k2\_zfmisc\_1 (k1\_group\_3 X0) (k1\_group\_3 X0)) \\ (k1\_group\_3 X0) (u1\_lattices (k11\_group\_4 X0)) (k10\_group\_4 X0)) \end{aligned}$$