

t23\_group\_3 (TM-  
bXxZ4UN4fZdGJiPKFKupGDtsp5UN8CZNK)

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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  $k2\_group\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
 & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
 & X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k6\_algstr\_0 \\
 & X0 (k6\_algstr\_0 X0 X1 X2) (k2\_group\_1 X0 X2) = X1) \wedge ((k6\_algstr\_0 \\
 & X0 (k6\_algstr\_0 X0 X1 (k2\_group\_1 X0 X2)) X2 = X1) \wedge ((k6\_algstr\_0 \\
 & X0 (k6\_algstr\_0 X0 (k2\_group\_1 X0 X2) X2) X1 = X1) \wedge ((k6\_algstr\_0 \\
 & X0 (k6\_algstr\_0 X0 X2 (k2\_group\_1 X0 X2)) X1 = X1) \wedge ((k6\_algstr\_0 \\
 & X0 X1 (k6\_algstr\_0 X0 X2 (k2\_group\_1 X0 X2)) = X1) \wedge ((k6\_algstr\_0 \\
 & X0 X1 (k6\_algstr\_0 X0 (k2\_group\_1 X0 X2) X2) = X1) \wedge ((k6\_algstr\_0 \\
 & X0 (k2\_group\_1 X0 X2) (k6\_algstr\_0 X0 X2 X1) = X1) \wedge (k6\_algstr\_0 X0 \\
 & X2 (k6\_algstr\_0 X0 (k2\_group\_1 X0 X2) X1) = X1)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((l3\_algstr\_0 X0) \wedge ((m1\_subset\_1 \\
 & X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\
 & (k6\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge \\
 & ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 \\
 & X0))) \Rightarrow (m1\_subset\_1 (k2\_group\_1 X0 X1) (u1\_struct\_0 X0))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(l3\_algstr\_0 X0) \Rightarrow ((v3\_group\_1 X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 \\ X0 (k6\_algstr\_0 X0 X1 X2) X3 = k6\_algstr\_0 X0 X1 (k6\_algstr\_0 X0 X2 \\ X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k2\_group\_3 \\ X0 X1 X2 = k6\_algstr\_0 X0 (k6\_algstr\_0 X0 (k2\_group\_1 X0 X2) X1) X2))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k2\_group\_3 X0 (k6\_algstr\_0 \\ X0 X1 X2) X3 = k6\_algstr\_0 X0 (k2\_group\_3 X0 X1 X3) (k2\_group\_3 X0 X2 \\ X3)))))) \end{aligned}$$