

## t23\_group\_7

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_group\_7 : \iota \Rightarrow o$  be given. Let  $v2\_group\_7 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1\_relat\_1 X3) \wedge \\ & ((v1\_funct\_1 X3) \wedge (v1\_finseq\_1 X3))) \Rightarrow ((X3 = k11\_finseq\_1 X0 X1 \\ & X2) \Leftrightarrow ((k3\_finseq\_1 X3 = np\_3) \wedge ((k1\_funct\_1 X3 np\_1 = X0) \wedge ((k1\_funct\_1 \\ & X3 np\_2 = X1) \wedge (k1\_funct\_1 X3 np\_3 = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l3\_algstr\_0 X1)) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\ & X2) \wedge (l3\_algstr\_0 X2)) \Rightarrow ((v1\_relat\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge \\ & ((v4\_relat\_1 (k11\_finseq\_1 X0 X1 X2) (k1\_enumset1 np\_1 np\_2 np\_3)) \wedge \\ & ((v1\_funct\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge ((v1\_partfun1 (k11\_finseq\_1 \\ & X0 X1 X2) (k1\_enumset1 np\_1 np\_2 np\_3)) \wedge (v1\_group\_7 (k11\_finseq\_1 \\ & X0 X1 X2)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$k2\_finseq\_1 np\_3 = k1\_enumset1 np\_1 np\_2 np\_3 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k10\_xtuple\_0 (k11\_finseq\_1 X0 X1 X2) = k1\_enumset1 X0 X1 X2 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1\_relat\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge (v1\_funct\_1 (k11\_finseq\_1 X0 X1 X2)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l3\_algstr\_0 X1)) \wedge ((\neg v2\_struct\_0 X2) \wedge (l3\_algstr\_0 X2)))) \Rightarrow ((v1\_partfun1 (k11\_finseq\_1 X0 X1 X2) \\ & (k1\_enumset1 np\_1 np\_2 np\_3)) \wedge (v1\_group\_7 (k11\_finseq\_1 X0 X1 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v1\_finseq\_1 (k11\_finseq\_1 X0 X1 X2) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 X0) \wedge (v1\_group\_7 X1)))) \Rightarrow ((v2\_group\_7 X1 X0) \Leftrightarrow (\forall X2. \neg (X2 \in X0) \wedge (\forall X3. ((\neg v2\_struct\_0 X3) \wedge ((v2\_group\_1 X3) \wedge (l3\_algstr\_0 X3)))) \Rightarrow (X3 \neq k1\_funct\_1 X1 X2))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(X3 = k1\_enumset1 X0 X1 X2) \Leftrightarrow (\forall X4.(X4 \in X3) \Leftrightarrow (\neg (X4 \neq X0) \wedge ((X4 \neq X1) \wedge (X4 \neq X2)))) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge (l3\_algstr\_0 X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge (l3\_algstr\_0 X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v2\_group\_1 X2) \wedge (l3\_algstr\_0 X2)))) \Rightarrow ((v1\_relat\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge ((v4\_relat\_1 (k11\_finseq\_1 X0 X1 X2) (k1\_enumset1 np\_1 np\_2 np\_3)) \wedge ((v1\_funct\_1 (k11\_finseq\_1 X0 X1 X2)) \wedge ((v1\_partfun1 (k11\_finseq\_1 X0 X1 X2) (k1\_enumset1 np\_1 np\_2 np\_3)) \wedge ((v1\_group\_7 (k11\_finseq\_1 X0 X1 X2)) \wedge (v2\_group\_7 (k11\_finseq\_1 X0 X1 X2) (k1\_enumset1 np\_1 np\_2 np\_3)))))))))) \end{aligned}$$