

## t146\_finseq\_3

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_funct\_6 : \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 X2))) \Rightarrow ((X2 = k10\_finseq\_1 X0 X1) \Leftrightarrow ((k3\_finseq\_1 X2 = np\_2) \wedge ((k1\_funct\_1 X2 np\_1 = X0) \wedge (k1\_funct\_1 X2 np\_2 = X1)))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (k4\_tarski X0 X1 = k4\_tarski X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \quad (2)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((k9\_xtuple\_0 (k7\_funct\_6 (k10\_finseq\_1 X0 X1)) = k4\_card\_3 (k10\_finseq\_1 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1))) \wedge ((k10\_xtuple\_0 (k7\_funct\_6 (k10\_finseq\_1 X0 X1)) = k4\_card\_3 (k10\_finseq\_1 (k10\_xtuple\_0 X0) (k10\_xtuple\_0 X1))) \wedge (\forall X2. \forall X3. ((X2 \in k9\_xtuple\_0 X0) \wedge (X3 \in k9\_xtuple\_0 X1)) \Rightarrow (k1\_funct\_1 (k7\_funct\_6 (k10\_finseq\_1 X0 X1)) (k10\_finseq\_1 X2 X3) = k10\_finseq\_1 (k1\_funct\_1 X0 X2) (k1\_funct\_1 X1 X3)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k10\_finseq\_1 X0 X1)) \wedge (v1\_funct\_1 (k10\_finseq\_1 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. v1\_finseq\_1 (k10\_finseq\_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\wedge((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)))\Rightarrow((v1\_relat\_1 (k15\_funct\_3 X0 X1))\wedge(v1\_funct\_1 (k15\_funct\_3 X0 X1))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\Rightarrow(\forall X1.((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge(v1\_funct\_1 X2))\Rightarrow((X2 = k15\_funct\_3 X0 X1)\Leftrightarrow((k9\_xtuple\_0 X2 = k2\_zfmisc\_1 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1))\wedge(\forall X3.\forall X4.((X3 \in k9\_xtuple\_0 X0)\wedge(X4 \in k9\_xtuple\_0 X1))\Rightarrow(k1\_binop\_1 X2 X3 X4 = k4\_tarski (k1\_funct\_1 X0 X3) (k1\_funct\_1 X1 X4))))))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2)\wedge(v1\_funct\_1 X2))\Rightarrow(\forall X3.((v1\_relat\_1 X3)\wedge(v1\_funct\_1 X3))\Rightarrow(((X0 \in k9\_xtuple\_0 X2)\wedge(X1 \in k9\_xtuple\_0 X3))\Rightarrow(\forall X4.\forall X5.(k1\_binop\_1 (k15\_funct\_3 X2 X3) X0 X1 = k4\_tarski X4 X5)\Leftrightarrow(k1\_funct\_1 (k7\_funct\_6 (k10\_finseq\_1 X2 X3)) (k10\_finseq\_1 X0 X1) = k10\_finseq\_1 X4 X5)))) \end{aligned}$$