

## t59\_funct\_7

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funcop\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_funct\_7 : \iota \Rightarrow \iota$  be given. Let  $k6\_funct\_7 : \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.(( \\ v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow ((k6\_funct\_7 \\ (k7\_finseq\_1 (k9\_finseq\_1 X0) X1) = k9\_xtuple\_0 X0) \wedge (k7\_funct\_7 \\ (k7\_finseq\_1 X1 (k9\_finseq\_1 X0)) = k10\_xtuple\_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funcop\_1 \\ X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ X2)) \Rightarrow (k4\_funct\_7 X0 (k7\_finseq\_1 X1 (k9\_finseq\_1 X2)) = k3\_relat\_1 \\ (k4\_funct\_7 X0 X1) X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow (r1\_tarski \\ (k10\_xtuple\_0 (k3\_relat\_1 X0 X1)) (k10\_xtuple\_0 X1))) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow o.((X0 k1\_xboole\_0) \wedge (\forall X1.((v1\_relat\_1 \\ X1) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funcop\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow \\ ((X0 X1) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow (X0 ( \\ k7\_finseq\_1 X1 (k9\_finseq\_1 X2)))))) \Rightarrow (\forall X1.((v1\_relat\_1 \\ X1) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funcop\_1 X1) \wedge (v1\_finseq\_1 X1)))) \Rightarrow \\ (X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge((v1\_funcop\_1 X1)\wedge(v1\_finseq\_1 X1))))\Rightarrow((v1\_relat\_1 (k4\_funct\_7 X0 X1))\wedge(v1\_funct\_1 (k4\_funct\_7 X0 X1))) \quad (5)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge((v1\_funcop\_1 X1)\wedge(v1\_finseq\_1 X1))))\Rightarrow((X1\neq k1\_xboole\_0)\Rightarrow(r1\_tarski (k10\_xtuple\_0 (k4\_funct\_7 X0 X1)) (k7\_funct\_7 X1)))$$