

l55\_fintopo6 (TM-  
MYFjJqsb7pEdm7EBTyLqNyQCDGCRWTmzM)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v3\_fintopo6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_fintopo6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k1\_funct\_1 \\ X1 \ np\_1 = X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k10\_xtuple\_0 \\ X1 = k1\_tarski X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \tag{4}$$

Assume the following.

$$\forall X0. k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v5\_relat\_1 X1 X0))\Rightarrow (k2\_relset\_1 X0 X1 = k10\_xtuple\_0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k12\_finseq\_1 X0 X1 = k5\_finseq\_1 X1) \quad (8)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow (v2\_fintopo6 (k5\_finseq\_1 X1) X0) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow (l1\_struct\_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0))\wedge(v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (m1\_subset\_1 (k6\_domain\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (m2\_finseq\_1 (k12\_finseq\_1 X0 X1) X0) \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v3\_fintopo6 \\
& X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(X2 \in X1) \wedge ((X3 \in X1) \wedge (\forall X4. \\
& (m2\_finseq\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\neg(v2\_fintopo6 X4 X0) \wedge ((r1\_tarski \\
& (k2\_relset\_1 (u1\_struct\_0 X0) X4) X1) \wedge ((k1\_funct\_1 X4 np\_1 = X2) \wedge \\
& (k1\_funct\_1 X4 (k3\_finseq\_1 X4) = X3))))))))))))) \\
& \tag{16}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow \\
& (X2 = X0)) \\
& \tag{17}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow (v5\_relat\_1 X1 X0) \\
& \tag{18}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (v3\_fintopo6 (k6\_domain\_1 \\
& (u1\_struct\_0 X0) X1) X0))
\end{aligned}$$