

# l51\_fintopo6 (TMVFPz- ZWHwM1yVAkxUtvzZ9DSLJY5rag4UR)

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  $v2\_fintopo6 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fin\_topo : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k10\_xtuple\_0 X1 = k1\_tarski X0))) \quad (1)$$

Assume the following.

$$r1\_xxreal\_0 np\_1 np\_1 \quad (2)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k12\_finseq\_1 X0 X1 = k5\_finseq\_1 X1) \quad (4)$$

Assume the following.

$$\forall X0. v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (5)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0))\wedge(v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow(m2\_finseq\_1 (k12\_finseq\_1 X0 X1) X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\Rightarrow(\forall X1. \\ & (m2\_finseq\_1 X1 (u1\_struct\_0 X0))\Rightarrow((v2\_fintopo6 X1 X0)\Leftrightarrow((r1\_xxreal\_0 \\ & \quad np\_1 (k3\_finseq\_1 X1))\wedge(\forall X2.(v7\_ordinal1 X2)\Rightarrow(\forall X3. \\ & \quad (m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(((r1\_xxreal\_0 np\_1 X2)\wedge( \\ & \quad X3 = k1\_funct\_1 X1 X2))\Rightarrow((r1\_xxreal\_0 (k3\_finseq\_1 X1) X2)\vee(k1\_funct\_1 \\ & \quad X1 (k1\_nat\_1 X2 np\_1) \in k1\_fin\_topo X0 X3)))))))))) \end{aligned} \quad (10)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(v2\_fintopo6 (k12\_finseq\_1 (u1\_struct\_0 X0) X1) X0))$$