

# t15\_fintopo4 (TMRUj- DueGQM71f1bByrfqmuuPaUyaHDyqZW)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_fintopo4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_fintopo3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k1\_fin\_topo : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_fintopo3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge (l1\_orders\_2 X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k5\_numbers) \Rightarrow (\forall X3. ( \\ m1\_subset\_1 X3 k5\_numbers) \Rightarrow ((r1\_xxreal\_0 X2 X3) \Rightarrow (r1\_tarski ( \\ k7\_fintopo3 X0 X1 X2) (k7\_fintopo3 X0 X1 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((l1\_orders\_2 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k1\_fin\_topo X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 k5\_numbers) \Rightarrow ((r2\_fintopo4 X0 X1 X2 \\
& X3) \Leftrightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5. \\
& (m1\_subset\_1 X5 (u1\_struct\_0 X1)) \Rightarrow (((X4 \in u1\_struct\_0 X0) \wedge (X5 = \\
& k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X4)) \Rightarrow (r1\_tarski \\
& (k7\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 (k10\_fintopo3 \\
& X0 k6\_numbers X4) (k10\_fintopo3 X1 X3 X5)))))))))) \Rightarrow
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (v7\_ordinal1 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow \\
& (k10\_fintopo3 X0 X1 X2 = k7\_fintopo3 X0 (k1\_fin\_topo X0 X2) X1))) \Rightarrow
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge (l1\_orders\_2 X1))) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 k5\_numbers) \Rightarrow (\forall X3.(m1\_subset\_1 X3 k5\_numbers) \Rightarrow \\
& (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (((r2\_fintopo4 X0 X1 X4 \\
& X2) \wedge (r1\_xxreal\_0 X2 X3)) \Rightarrow (r2\_fintopo4 X0 X1 X4 X3)))))) \Rightarrow
\end{aligned}$$