

t7\_fintopo6  
(TMV8cZmSHoBG8CQfcNyWP3QckfPBywz3mks)

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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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_fin\_topo : \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_fintopo4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_fin\_topo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_fin\_topo : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (((v1\_fin\_topo \\ & X0) \wedge (r1\_xboole\_0 (k9\_fin\_topo X0 X1) X2)) \Rightarrow (r1\_xboole\_0 X1 (k9\_fin\_topo \\ & X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (l1\_struct\_0 X0) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (k1\_struct\_0 X0 = k1\_xboole\_0) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((r1\_fintopo4 \\ & X0 X1 X2) \Leftrightarrow ((r1\_xboole\_0 (k9\_fin\_topo X0 X1) X2) \wedge (r1\_xboole\_0 X1 \\ & (k9\_fin\_topo X0 X2)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v4\_fin\_topo \\
& X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0))) \Rightarrow (\neg(X1 = k4\_subset\_1 (u1\_struct\_0 X0) X2 X3) \wedge ((X2 \neq k1\_xboole\_0) \wedge \\
& ((X3 \neq k1\_xboole\_0) \wedge ((r1\_xboole\_0 X2 X3) \wedge (r1\_xboole\_0 (k9\_fin\_topo \\
& X0 X2) X3))))))))))
\end{aligned} \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (((v1\_fin\_topo \\
& X0) \wedge (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\
& (\neg(X1 = k4\_subset\_1 (u1\_struct\_0 X0) X2 X3) \wedge ((r1\_xboole\_0 X2 X3) \wedge \\
& ((r1\_fintopo4 X0 X2 X3) \wedge ((X2 \neq k1\_struct\_0 X0) \wedge (X3 \neq k1\_struct\_0 \\
& X0)))))))))) \Rightarrow (v4\_fin\_topo X1 X0))
\end{aligned}$$