

# t23\_fintopo2

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_fintopo2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k12\_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_fintopo2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_fintopo2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((X1 \in k11\_fintopo2 X0 X2) \Leftrightarrow (( \\ & X1 \in X2) \wedge (\exists X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \wedge ((X3 \in k6\_fintopo2 X0 X1) \wedge (r1\_xboole\_0 (k7\_subset\_1 (u1\_struct\_0 \\ & X0) X3 (k6\_domain\_1 (u1\_struct\_0 X0) X1)) X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (k7\_subset\_1 X0 X1 X2 = k4\_xboole\_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X2 = k4\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_fintopo2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (k12\_fintopo2 \\ & X0 X1 = k7\_subset\_1 (u1\_struct\_0 X0) X1 (k11\_fintopo2 X0 X1))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_fintopo2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((X1 \in k12\_fintopo2 X0 X2) \Leftrightarrow (( \\ & X1 \in X2) \wedge (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\neg (X3 \in k6\_fintopo2 X0 X1) \wedge (r1\_xboole\_0 (k7\_subset\_1 (u1\_struct\_0 \\ & X0) X3 (k6\_domain\_1 (u1\_struct\_0 X0) X1)) X2)))))) \end{aligned}$$