

# t38\_tmap\_1 (TMSPkEMY- oBPZktQ96AtY8AjogybZPZtXooJ)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0))) \Rightarrow ( \\ & \forall X2. ((\neg v2\_struct\_0 X2) \wedge (m1\_pre\_topc X2 X0))) \Rightarrow ((\neg r1\_tsep\_1 X1 X2) \Rightarrow ((m1\_pre\_topc (k2\_tsep\_1 X0 X1 X2) X1) \wedge (m1\_pre\_topc (k2\_tsep\_1 X0 X1 X2) X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow (m1\_subset\_1 (u1\_struct\_0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_pre\_topc X1 X0) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X1))) \Rightarrow \\ & ((v4\_pre\_topc X2 X1) \Leftrightarrow (\exists X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge ((v4\_pre\_topc X3 X0) \wedge (k9\_subset\_1 (u1\_struct\_0 X1) X3 (k2\_struct\_0 X1) = X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1\_pre\_topc\ X1\ X0) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\ & (u1\_struct\_0\ X0))) \Rightarrow ((X2 = u1\_struct\_0\ X1) \Rightarrow (((v1\_borsuk\_1\ X1\ X0) \wedge \\ & (m1\_pre\_topc\ X1\ X0)) \Leftrightarrow (v4\_pre\_topc\ X2\ X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarSKI\ X0\ X0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\ & X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_pre\_topc\ X1\ X0) \Rightarrow (l1\_pre\_topc\ X1)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (l1\_struct\_0\ X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc \\ & X0)) \wedge (((\neg v2\_struct\_0\ X1) \wedge (m1\_pre\_topc\ X1\ X0)) \wedge ((\neg v2\_struct\_0 \\ & X2) \wedge (m1\_pre\_topc\ X2\ X0)))) \Rightarrow ((\neg v2\_struct\_0\ (k2\_tsep\_1\ X0\ X1\ X2)) \wedge \\ & ((v1\_pre\_topc\ (k2\_tsep\_1\ X0\ X1\ X2)) \wedge (m1\_pre\_topc\ (k2\_tsep\_1\ X0 \\ & X1\ X2)\ X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0\ X1) \wedge (m1\_pre\_topc\ X1\ X0)) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\ & X2) \wedge (m1\_pre\_topc\ X2\ X0)) \Rightarrow ((\neg r1\_tsep\_1\ X1\ X2) \Rightarrow (\forall X3. ((\neg \\ & v2\_struct\_0\ X3) \wedge ((v1\_pre\_topc\ X3) \wedge (m1\_pre\_topc\ X3\ X0))) \Rightarrow ((X3 = \\ & k2\_tsep\_1\ X0\ X1\ X2) \Leftrightarrow (u1\_struct\_0\ X3 = k3\_xboole\_0\ (u1\_struct\_0 \\ & X1)\ (u1\_struct\_0\ X2)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0) \Rightarrow (k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \quad (12)$$

Assume the following.

$$\forall X0. ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1. (m1\_pre\_topc\ X1\ X0) \Rightarrow (v2\_pre\_topc\ X1)) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (m1\_pre\_topc X1 X0)) \Rightarrow ( \\ & \forall X2.((\neg v2\_struct\_0 X2) \wedge ((v1\_borsuk\_1 X2 X0) \wedge (m1\_pre\_topc \\ & X2 X0))) \Rightarrow ((\neg r1\_tsep\_1 X2 X1) \Rightarrow ((v1\_borsuk\_1 (k2\_tsep\_1 X0 X2 X1) \\ & X1) \wedge (m1\_pre\_topc (k2\_tsep\_1 X0 X2 X1) X1)))))) \end{aligned}$$