t13_tsp_1 (TMahQ6F8Pu7avxBYwstQVamtnirPG32axhi)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_tsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6\_pre\_topc : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_pre\_topc\ X1\ X0) \Rightarrow (l1\_pre\_topc\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v1\_tsp\_1\ X1\ X0) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.\ (m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\neg(X2 \in X1) \wedge ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\neg(v4\_pre\_topc\ X4\ X0) \wedge ((X2 \in X4) \wedge (\neg X3 \in X4)))) \wedge (\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\neg(v4\_pre\_topc\ X4\ X0) \wedge ((\neg X2 \in X4) \wedge (X3 \in X4)))))))))))) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_pre\_topc\ X1\ X0)\Rightarrow((v6\_pre\_topc\ X1)\Leftrightarrow((v2\_struct\_0\ X1)\vee(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\neg(m1\_subset\_1\ X2\ (u1\_struct\_0\ X1))\wedge((m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\wedge((X2\neq X3)\wedge((\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\neg(v4\_pre\_topc\ X4\ X0)\wedge((X2\in X4)\wedge(\neg X3\in X4))))\wedge(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\neg(v4\_pre\_topc\ X4\ X0)\wedge((\neg X2\in X4)\wedge(X3\in X4))))))))))))) \tag{7}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(m1\_pre\_topc\ X1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2 = u1\_struct\_0\ X1)\Rightarrow((v1\_tsp\_1\ X2\ X0)\Leftrightarrow(v6\_pre\_topc\ X1)))))$$