

t4\_tsp\_1  
(TMLC1uqhmpdefURQRGo9MsCTy8wjJqKmcuF)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  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  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_pre\_topc X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow ((v1\_tsp\_1 X1 X0) \Leftrightarrow (\forall X2. (m1\_subset\_1 \\ X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 \\ X0)) \Rightarrow (\neg (X2 \in X1) \wedge ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\forall X4. (m1\_subset\_1 \\ X4 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (v3\_pre\_topc X4 X0) \wedge ((X2 \in \\ X4) \wedge (\neg X3 \in X4)))))) \wedge (\forall X4. (m1\_subset\_1 X4 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))) \Rightarrow (\neg (v3\_pre\_topc X4 X0) \wedge ((\neg X2 \in X4) \wedge (X3 \in X4)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_pre\_topc X0) \Rightarrow ((v6\_pre\_topc X0) \Leftrightarrow ((v2\_struct\_0 \\ X0) \vee (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\neg (X1 \neq X2) \wedge ((\forall X3. (m1\_subset\_1 \\ X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (v3\_pre\_topc X3 X0) \wedge ((X1 \in \\ X3) \wedge (\neg X2 \in X3)))))) \wedge (\forall X3. (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))) \Rightarrow (\neg (v3\_pre\_topc X3 X0) \wedge ((\neg X1 \in X3) \wedge (X2 \in X3)))))))))) \end{aligned} \quad (5)$$

**Theorem 1**

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