

## t27\_tsp\_2

(TMW2NH413zu1M5Po2PwoMxtR1WxabSte6kA)

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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  $v2\_tsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tex\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k2\_tex\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg(X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_tsp\_2 X1 X0) \wedge (m1\_pre\_topc X1 X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow ((X2 = X3) \Rightarrow (k8\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (k1\_tsp\_2 X0 X1) (k6\_domain\_1 (u1\_struct\_0 X1) X3) = k4\_tex\_4 X0 X2)))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((X2 \in k2\_tex\_4 X0 X1) \Leftrightarrow (k2\_tex\_4 X0 X2 = k2\_tex\_4 X0 X1)))) \quad (4) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0)))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(k4\_tex\_4 X0 X1 = k2\_tex\_4 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X2)\wedge(v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 (k3\_funct\_2 X0 X1 X2 X3) X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc X0)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k2\_tex\_4 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0)))\wedge((\neg v2\_struct\_0 X1)\wedge(v2\_tsp\_2 X1 X0)\wedge(m1\_pre\_topc X1 X0)))\Rightarrow((v1\_funct\_1 (k1\_tsp\_2 X0 X1))\wedge(v1\_funct\_2 (k1\_tsp\_2 X0 X1) (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge((v5\_pre\_topc (k1\_tsp\_2 X0 X1) X0 X1)\wedge(m1\_subset\_1 (k1\_tsp\_2 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge(v2\_tsp\_2 X1 X0)\wedge(m1\_pre\_topc X1 X0)))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge((v5\_pre\_topc X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))))\Rightarrow(((X2 = k1\_tsp\_2 X0 X1)\Leftrightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X3 \in k4\_tex\_4 X0 X3)))) \quad (9)$$

### Theorem 1

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(v2\_pre\_topc X0)\wedge(l1\_pre\_topc X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge(v2\_tsp\_2 X1 X0)\wedge(m1\_pre\_topc X1 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k8\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (k1\_tsp\_2 X0 X1) (k6\_domain\_1 (u1\_struct\_0 X1) (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (k1\_tsp\_2 X0 X1) X2)) = k4\_tex\_4 X0 X2)))$$