t24_tsp_2 (TMQ3Xu1SZNfE7yzoYZidBZTN228b1ogbqVm)

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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 $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_borsuk\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v2\_tsp\_2\ X1\ X0) \wedge (m1\_pre\_topc\ X1\ X0))) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge ((v5\_pre\_topc\ X2\ X0\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))))) \Rightarrow ((v3\_borsuk\_1\ X2\ X0\ X1) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1)) \Rightarrow ((X3 = X4) \Rightarrow (k8\_relset\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X2\ (k2\_pre\_topc\ X1\ (k6\_domain\_1\ (u1\_struct\_0\ X1)\ X4)) = k2\_pre\_topc\ X0\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X3)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0))) \wedge ((\neg v2\_struct\_0\ X1) \wedge ((v2\_tsp\_2\ X1\ X0) \wedge (m1\_pre\_topc\ X1\ X0)))) \Rightarrow ((v1\_funct\_1\ (k1\_tsp\_2\ X0\ X1)) \wedge ((v1\_funct\_2\ (k1\_tsp\_2\ X0\ X1)\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge ((v5\_pre\_topc\ (k1\_tsp\_2\ X0\ X1)\ X0\ X1) \wedge (m1\_subset\_1\ (k1\_tsp\_2\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_tsp\_2\ X1\ X0)\wedge(m1\_pre\_topc\ X1\ X0)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge((v5\_pre\_topc\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))))\Rightarrow((X2 = k1\_tsp\_2\ X0\ X1)\Leftrightarrow(v3\_borsuk\_1\ X2\ X0\ X1)))) \tag{3}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_tsp\_2\ X1\ X0)\wedge(m1\_pre\_topc\ X1\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow((X2 = X3)\Rightarrow(k8\_relset\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ (k1\_tsp\_2\ X0\ X1)\ (k2\_pre\_topc\ X1\ (k6\_domain\_1\ (u1\_struct\_0\ X1)\ X3)) = k2\_pre\_topc\ X0\ (k6\_domain\_1\ (u1\_struct\_0\ X0)\ X2))))))$$