t17_tsp_1 (TMaYmXXskgRMv2qEcXe6y8v6zYzhzJzYe6B)

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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 $v6\_pre\_topc : \iota \Rightarrow o$ 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 $k1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_tsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_pre\_topc : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (((v1\_tsp\_1\ X1\ X0) \wedge (v1\_tsp\_1\ X2\ X0)) \Rightarrow (((\neg v4\_pre\_topc\ X1\ X0) \wedge (\neg v4\_pre\_topc\ X2\ X0)) \vee (v1\_tsp\_1\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2)\ X0))))) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_pre\_topc\ X1\ X0) \Rightarrow (m1\_subset\_1\ (u1\_struct\_0\ X1)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1.\ ((\neg v2\_struct\_0\ X1) \wedge (m1\_pre\_topc\ X1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((X2 = u1\_struct\_0\ X1) \Rightarrow ((v1\_tsp\_1\ X2\ X0) \Leftrightarrow (v6\_pre\_topc\ X1))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))) \Rightarrow (k4\_subset\_1\ X0\ X1\ X2 = k2\_xboole\_0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_pre\_topc\ X0))\wedge(((\neg v2\_struct\_0\ X1)\wedge(m1\_pre\_topc\ X1\ X0))\wedge((\neg v2\_struct\_0\ X2)\wedge(m1\_pre\_topc\ X2\ X0))))\Rightarrow((\neg v2\_struct\_0\ (k1\_tsep\_1\ X0\ X1\ X2))\wedge((v1\_pre\_topc\ (k1\_tsep\_1\ X0\ X1\ X2))\wedge(m1\_pre\_topc\ (k1\_tsep\_1\ X0\ X1\ X2)\ X0)))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(m1\_pre\_topc\ X1\ X0))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(m1\_pre\_topc\ X2\ X0))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((v1\_pre\_topc\ X3)\wedge(m1\_pre\_topc\ X3\ X0)))\Rightarrow((X3 = k1\_tsep\_1\ X0\ X1\ X2)\Leftrightarrow(u1\_struct\_0\ X3 = k2\_xboole\_0\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X2))))))) \tag{6}$$

Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1.(m1\_pre\_topc\ X1\ X0)\Rightarrow((v1\_borsuk\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2 = u1\_struct\_0\ X1)\Rightarrow(v4\_pre\_topc\ X2\ X0))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_pre\_topc\ X0))\wedge(((\neg v2\_struct\_0\ X1)\wedge(m1\_pre\_topc\ X1\ X0))\wedge((\neg v2\_struct\_0\ X2)\wedge(m1\_pre\_topc\ X2\ X0))))\Rightarrow(k1\_tsep\_1\ X0\ X1\ X2 = k1\_tsep\_1\ X0\ X2\ X1) \tag{8}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v6\_pre\_topc\ X1)\wedge(m1\_pre\_topc\ X1\ X0)))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v6\_pre\_topc\ X2)\wedge(m1\_pre\_topc\ X2\ X0)))\Rightarrow(((v1\_borsuk\_1\ X1\ X0)\vee(v1\_borsuk\_1\ X2\ X0))\Rightarrow(v6\_pre\_topc\ (k1\_tsep\_1\ X0\ X1\ X2)))))$$