

# t39\_simplex0 (TMMTgn- JNKNKXBKT9vsknnaxfUtsSH6YWoUL)

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Let  $v1\_matroid0 : \iota \Rightarrow o$  be given. Let  $v3\_matroid0 : \iota \Rightarrow o$  be given. Let  $m1\_simplex0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_simplex0 X1 X0) \Rightarrow (\forall X2. (m2\_simplex0 \\ & X2 X0 X1) \Rightarrow ((v7\_simplex0 X2 X0 X1) \Leftrightarrow (r1\_tarski (k9\_subset\_1 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X1)) (k9\_setfam\_1 (k2\_struct\_0 X2)) (u1\_pre\_topc \\ & X1)) (u1\_pre\_topc X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k3\_xboole\_0 X0 X1 = X0) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (k9\_subset\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0. k9\_setfam\_1 X0 = k1\_zfmisc\_1 X0 \quad (5)$$

Assume the following.

$$\forall X0. (l1\_pre\_topc X0) \Rightarrow (m1\_subset\_1 (u1\_pre\_topc X0) (k1\_zfmisc\_1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(\forall X2.(m2\_simplex0\ X2\ X0\ X1)\Rightarrow((v1\_matroid0\ X2)\wedge((v3\_matroid0\ X2)\wedge(m1\_simplex0\ X2\ X0)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(l1\_pre\_topc\ X1) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(l1\_struct\_0\ X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_matroid0\ X1)\wedge(m1\_simplex0\ X1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))))\Rightarrow((v1\_pre\_topc\ (k7\_simplex0\ X0\ X1\ X2))\wedge((v7\_simplex0\ (k7\_simplex0\ X0\ X1\ X2)\ X0\ X1)\wedge(m2\_simplex0\ (k7\_simplex0\ X0\ X1\ X2)\ X0\ X1))) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (k2\_struct\_0\ X0)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_matroid0\ X1)\wedge((v3\_matroid0\ X1)\wedge(m1\_simplex0\ X1\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1)))\Rightarrow(\forall X3.((v1\_pre\_topc\ X3)\wedge((v7\_simplex0\ X3\ X0\ X1)\wedge(m2\_simplex0\ X3\ X0\ X1)))\Rightarrow((X3 = k7\_simplex0\ X0\ X1\ X2)\Leftrightarrow(k2\_struct\_0\ X3 = X2)))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(\forall X2.((v1\_matroid0\ X2)\wedge((v3\_matroid0\ X2)\wedge(m1\_simplex0\ X2\ X0)))\Rightarrow((m2\_simplex0\ X2\ X0\ X1)\Leftrightarrow((r1\_tarski\ (k2\_struct\_0\ X2)\ (k2\_struct\_0\ X1))\wedge(r1\_tarski\ (u1\_pre\_topc\ X2)\ (u1\_pre\_topc\ X1)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \quad (15)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow((v1\_pre\_topc\ X0)\Rightarrow(X0 = g1\_pre\_topc\ (u1\_struct\_0\ X0)\ (u1\_pre\_topc\ X0))) \quad (16)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_matroid0\ X1)\wedge(v3\_matroid0\ X1)\wedge(m1\_simplex0\ X1\ X0))\Rightarrow(k7\_simplex0\ X0\ X1\ (k2\_struct\_0\ X1) = g1\_pre\_topc\ (u1\_struct\_0\ X1)\ (u1\_pre\_topc\ X1))$$