t31_simplex0 (TMGtrg1sGi4JYVdUQdymoMnDuXoysthx3zP)

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Let $m1\_simplex0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_simplex0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_simplex0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $u1\_pre\_topc : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_matroid0 : \iota \Rightarrow o$ be given. Let $v3\_matroid0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_simplex0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1)) \Leftrightarrow (r1\_tarski\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (m1\_subset\_1\ (u1\_pre\_topc\ X0)\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0) \Rightarrow (\forall X2.(m2\_simplex0\ X2\ X0\ X1) \Rightarrow ((v1\_matroid0\ X2) \wedge ((v3\_matroid0\ X2) \wedge (m1\_simplex0\ X2\ X0)))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0) \Rightarrow (l1\_pre\_topc\ X1) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(m1\_subset\_1\ (k4\_simplex0\ X0)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X1 = k4\_simplex0\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((X2 \in X1)\Leftrightarrow(v1\_simplex0\ X2\ X0))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow(X2 \in X1)) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow((v1\_simplex0\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge((v3\_pre\_topc\ X2\ X0)\wedge(X1 \in X2))))) \tag{11}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((v3\_pre\_topc\ X1\ X0)\Leftrightarrow(X1 \in u1\_pre\_topc\ X0))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(\forall X2.((v1\_matroid0\ X2)\wedge((v3\_matroid0\ X2)\wedge(m1\_simplex0\ X2\ X0)))\Rightarrow((m2\_simplex0\ X2\ X0\ X1)\Leftrightarrow((r1\_tarski\ (k2\_struct\_0\ X2)\ (k2\_struct\_0\ X1))\wedge(r1\_tarski\ (u1\_pre\_topc\ X2)\ (u1\_pre\_topc\ X1))))) \tag{13}$$

Theorem 1

$$\forall X0.\forall X1.(m1\_simplex0\ X1\ X0)\Rightarrow(\forall X2.(m2\_simplex0\ X2\ X0\ X1)\Rightarrow(r1\_tarski\ (k4\_simplex0\ X2)\ (k4\_simplex0\ X1)))$$