t1_connsp_3 (TMYD7BmYuGD46b8gGXkMVKPfNsy3jztruLb)

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Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ 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 $v2\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_connsp\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k1\_setfam\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_tarski : \iota \Rightarrow \iota$ be given. Let $k5\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\neg(X0 \in X1) \wedge (v1\_xboole\_0\ X1) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.(\forall X2.(X2 \in X0) \Rightarrow (r1\_tarski\ X1\ X2)) \Rightarrow \\ ((X0 = k1\_xboole\_0) \vee (r1\_tarski\ X1\ (k1\_setfam\_1\ X0)))\end{gathered} \tag{3}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2)\end{gathered} \tag{4}$$

Assume the following.

$$\forall X0.r1\_tarski\ (k1\_setfam\_1\ X0)\ (k3\_tarski\ X0) \tag{5}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski \\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2)\end{gathered} \tag{6}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1 \\ X0))) \Rightarrow (k5\_setfam\_1\ X0\ X1 = k3\_tarski\ X1)\end{gathered} \tag{7}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\exists X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(v1\_xboole\_0\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k1\_connsp\_3\ X0\ X1)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2 = k1\_connsp\_3\ X0\ X1)\Leftrightarrow(\exists X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\wedge((\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X4 \in X3)\Leftrightarrow((v2\_connsp\_1\ X4\ X0)\wedge(r1\_tarski\ X1\ X4))))\wedge(k5\_setfam\_1\ (u1\_struct\_0\ X0)\ X3 = X2)))))) \tag{10}$$

Theorem 1

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\exists X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge((v2\_connsp\_1\ X2\ X0)\wedge(r1\_tarski\ X1\ X2)))\Rightarrow(r1\_tarski\ X1\ (k1\_connsp\_3\ X0\ X1))))$$