t7_connsp_1 (TMcGcsvgXyVGfpJQRGbRkWEa8Cv9bvjL97c)

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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 $r1\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(r1\_tarski\ X0\ k1\_xboole\_0) \Rightarrow (X0 = k1\_xboole\_0) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X2\ X3)) \Rightarrow (r1\_tarski\ (k3\_xboole\_0\ X0\ X2)\ (k3\_xboole\_0\ X1\ X3)) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((r1\_tarski\ X1\ X2) \Rightarrow (r1\_tarski\ (k2\_pre\_topc\ X0\ X1)\ (k2\_pre\_topc\ X0\ X2))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_pre\_topc\ X0) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))) \Rightarrow ((r1\_connsp\_1\ X0\ X1\ X2) \Rightarrow (r1\_connsp\_1\ X0\ X2\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_xboole\_0\ X0\ X1) \Leftrightarrow (k3\_xboole\_0\ X0\ X1 = k1\_xboole\_0) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((r1\_connsp\_1\ X0\ X1\ X2)\Leftrightarrow((r1\_xboole\_0\ (k2\_pre\_topc\ X0\ X1)\ X2)\wedge(r1\_xboole\_0\ X1\ (k2\_pre\_topc\ X0\ X2))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{7}$$

Theorem 1

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(((r1\_connsp\_1\ X0\ X1\ X2)\wedge((r1\_tarski\ X3\ X1)\wedge(r1\_tarski\ X4\ X2)))\Rightarrow(r1\_connsp\_1\ X0\ X3\ X4))))))$$