t24_topreal7 (TMYjH5VbKQxYWBbnaS4KdRg1oWNrHbQzajp)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v6\_metric\_1 : \iota \Rightarrow o$ be given. Let $v7\_metric\_1 : \iota \Rightarrow o$ be given. Let $v8\_metric\_1 : \iota \Rightarrow o$ be given. Let $v9\_metric\_1 : \iota \Rightarrow o$ be given. Let $l1\_metric\_1 : \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_numbers : \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_pcomps\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_pcomps\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $g1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_metric\_1\ X0) \Rightarrow (m1\_subset\_1\ (k2\_pcomps\_1\ X0)\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_metric\_1\ X0) \Rightarrow (k3\_pcomps\_1\ X0 = g1\_pre\_topc\ (u1\_struct\_0\ X0)\ (k2\_pcomps\_1\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_metric\_1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((X1 = k2\_pcomps\_1\ X0) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((X2 \in X1) \Leftrightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\neg(X3 \in X2) \wedge (\forall X4.(m1\_subset\_1\ X4\ k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0\ X4\ k6\_numbers) \wedge (r1\_tarski\ (k9\_metric\_1\ X0\ X3\ X4)\ X2)))))))))) \tag{4}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v6\_metric\_1\ X0)\wedge((v7\_metric\_1\ X0)\wedge((v8\_metric\_1\ X0)\wedge((v9\_metric\_1\ X0)\wedge(l1\_metric\_1\ X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v6\_metric\_1\ X1)\wedge((v7\_metric\_1\ X1)\wedge((v8\_metric\_1\ X1)\wedge((v9\_metric\_1\ X1)\wedge(l1\_metric\_1\ X1))))))\Rightarrow(((u1\_struct\_0\ X0 = u1\_struct\_0\ X1)\wedge((\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X4\ k6\_numbers)\wedge((X2 = X3)\wedge(\forall X5.(m1\_subset\_1\ X5\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X5\ k6\_numbers)\wedge(r1\_tarski\ (k9\_metric\_1\ X1\ X3\ X5)\ (k9\_metric\_1\ X0\ X2\ X4)))))))))\wedge(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X4\ k6\_numbers)\wedge((X2 = X3)\wedge(\forall X5.(m1\_subset\_1\ X5\ k1\_numbers)\Rightarrow(\neg(\neg r1\_xxreal\_0\ X5\ k6\_numbers)\wedge(r1\_tarski\ (k9\_metric\_1\ X0\ X2\ X5)\ (k9\_metric\_1\ X1\ X3\ X4)))))))))))\Rightarrow(k3\_pcomps\_1\ X0 = k3\_pcomps\_1\ X1)))$$