t48_topgen_5 (TMaBbKoK3A99hkytM8d1CqsD1qpeKcVCdj8)

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Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $v7\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $v1\_topgen\_5 : \iota \Rightarrow o$ be given. Let $v1\_tops\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_cantor\_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_topmetr : \iota$ be given. Let $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k3\_subset\_1\ X0\ (k3\_subset\_1\ X0\ X1) = X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \wedge ((v3\_pre\_topc\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))) \Rightarrow (v4\_pre\_topc\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\ X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (m1\_subset\_1\ (k3\_subset\_1\ X0\ X1)\ (k1\_zfmisc\_1\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0))\Rightarrow((v1\_topgen\_5\ X0)\Leftrightarrow(\forall X1.((v4\_pre\_topc\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\neg(X2\in k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1)\wedge(\forall X3.((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr))\wedge((v5\_pre\_topc\ X3\ X0\ k5\_topmetr)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr))))))))\Rightarrow(\neg(k1\_funct\_1\ X3\ X2 = k6\_numbers)\wedge(r1\_tarski\ (k7\_relset\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr)\ X3\ X1)\ (k6\_domain\_1\ k1\_numbers\ np\_\_1)))))))) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v1\_tops\_2\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2\in X1)\Rightarrow(v3\_pre\_topc\ X2\ X0))))) \tag{6}$$

Theorem 1

$$\forall X0.((v2\_pre\_topc\ X0)\wedge((v7\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((v1\_topgen\_5\ X0)\Rightarrow(\forall X1.((v1\_tops\_2\ X1\ X0)\wedge((v2\_cantor\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\neg(X2\in X3)\wedge((X3\in X1)\wedge(\forall X4.((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr))\wedge((v5\_pre\_topc\ X4\ X0\ k5\_topmetr)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr)))))))\Rightarrow(\neg(k1\_funct\_1\ X4\ X2 = k6\_numbers)\wedge(r1\_tarski\ (k7\_relset\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ k5\_topmetr)\ X4\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X3))\ (k6\_domain\_1\ k1\_numbers\ np\_\_1)))))))))$$