t48_tops_2 (TM-MeaZgJQcr6VTvAP5k6MYZQJm733DWqKRU)

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Let $l1\_pre\_topc : \iota \Rightarrow o$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_tops\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_funct\_3 : \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow ((X0 \in k9\_xtuple\_0\ (k3\_funct\_3\ X1)) \Rightarrow (k1\_funct\_1\ (k3\_funct\_3\ X1)\ X0 = k8\_relat\_1\ X1\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \Rightarrow (k8\_relset\_1\ X0\ X1\ X2\ X3 = k8\_relat\_1\ X2\ X3) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k3\_funct\_3\ X0)) \wedge (v1\_funct\_1\ (k3\_funct\_3\ X0))) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0) \Rightarrow (\forall X1.(l1\_pre\_topc\ X1) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))) \Rightarrow ((v5\_pre\_topc\ X2\ X0\ X1) \Leftrightarrow (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))) \Rightarrow ((v4\_pre\_topc\ X3\ X1) \Rightarrow (v4\_pre\_topc\ (k8\_relset\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X2\ X3)\ X0))))))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.\forall X2.\ (X2 = k7\_relat\_1\ X0\ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow(\exists X4.(X4 \in k9\_xtuple\_0\ X0)\wedge((X4 \in X1)\wedge(X3 = k1\_funct\_1\ X0\ X4))))) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v2\_tops\_2\ X1\ X0)\Leftrightarrow(\forall X2.\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((X2 \in X1)\Rightarrow(v4\_pre\_topc\ X2\ X0))))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{8}$$

Theorem 1

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(\forall X1.(l1\_pre\_topc\ X1)\Rightarrow(\forall X2.\ ((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))))\Rightarrow(((v5\_pre\_topc\ X2\ X0\ X1)\wedge(v2\_tops\_2\ X3\ X1))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((X4 = k7\_relat\_1\ (k3\_funct\_3\ X2)\ X3)\Rightarrow(v2\_tops\_2\ X4\ X0)))))))$$