t113_tmap_1 (TMLmjLFDUVnd-ddV7hhZrkemUonTDp85Vb49)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. 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 $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_tmap\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1.\ (m1\_pre\_topc\ X1\ X0) \Rightarrow (\forall X2.(m1\_pre\_topc\ X2\ X1) \Rightarrow (m1\_pre\_topc\ X2\ X0))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v2\_pre\_topc\ X1) \wedge (l1\_pre\_topc\ X1))) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge (m1\_pre\_topc\ X2\ X0)) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1)))))) \Rightarrow (r2\_funct\_2\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1)\ X3\ (k3\_tmap\_1\ X0\ X1\ X2\ X2\ X3))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v2\_pre\_topc\ X1) \wedge (l1\_pre\_topc\ X1))) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X1)\ (u1\_struct\_0\ X0)))))) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge (m1\_pre\_topc\ X3\ X1)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X3)) \Rightarrow (((X4 = X5) \wedge (r1\_tmap\_1\ X1\ X0\ X2\ X4)) \Rightarrow (r1\_tmap\_1\ X3\ X0\ (k2\_tmap\_1\ X1\ X0\ X2\ X3)\ X5))))))) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(m1\_pre\_topc\ X0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge(m1\_pre\_topc\ X3\ X0))\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge(m1\_pre\_topc\ X4\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ (k1\_tsep\_1\ X0\ X3\ X4)))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X3))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X4))\Rightarrow(((X5=X6)\wedge(X5=X7))\Rightarrow((r1\_tmap\_1\ (k1\_tsep\_1\ X0\ X3\ X4)\ X1\ (k2\_tmap\_1\ X0\ X1\ X2\ (k1\_tsep\_1\ X0\ X3\ X4))\ X5)\Leftrightarrow((r1\_tmap\_1\ X3\ X1\ (k2\_tmap\_1\ X0\ X1\ X2\ X3)\ X6)\wedge(r1\_tmap\_1\ X4\ X1\ (k2\_tmap\_1\ X0\ X1\ X2\ X4)\ X7)))))))))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((r2\_funct\_2\ X0\ X1\ X2\ X3)\Leftrightarrow(X2=X3)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\wedge(((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1)))\wedge((m1\_pre\_topc\ X2\ X0)\wedge((m1\_pre\_topc\ X3\ X0)\wedge((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1))))))))))\Rightarrow((v1\_funct\_1\ (k3\_tmap\_1\ X0\ X1\ X2\ X3\ X4))\wedge((v1\_funct\_2\ (k3\_tmap\_1\ X0\ X1\ X2\ X3\ X4)\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ (k3\_tmap\_1\ X0\ X1\ X2\ X3\ X4)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X1)))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1)))\Rightarrow(\forall X2.(m1\_pre\_topc\ X2\ X0)\Rightarrow(\forall X3.(m1\_pre\_topc\ X3\ X0)\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge((v1\_funct\_2\ X4\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1))))))\Rightarrow((m1\_pre\_topc\ X3\ X2)\Rightarrow(k3\_tmap\_1\ X0\ X1\ X2\ X3\ X4 = k2\_partfun1\ (u1\_struct\_0\ X2)\ (u1\_struct\_0\ X1)\ X4\ (u1\_struct\_0\ X3)))))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X3.(m1\_pre\_topc\ X3\ X0)\Rightarrow(k2\_tmap\_1\ X0\ X1\ X2\ X3 = k2\_partfun1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X2\ (u1\_struct\_0\ X3))))) \tag{9}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1)))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge(m1\_pre\_topc\ X3\ X0))\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge(m1\_pre\_topc\ X4\ X0))\Rightarrow((X0 = k1\_tsep\_1\ X0\ X3\ X4)\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X3))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X4))\Rightarrow(((X5 = X6)\wedge(X5 = X7))\Rightarrow((r1\_tmap\_1\ X0\ X1\ X2\ X5)\Leftrightarrow((r1\_tmap\_1\ X3\ X1\ (k2\_tmap\_1\ X0\ X1\ X2\ X3)\ X6)\wedge(r1\_tmap\_1\ X4\ X1\ (k2\_tmap\_1\ X0\ X1\ X2\ X4)\ X7)))))))))))$$