t12_amistd_4 (TM-RiW1YgpteENRGS38UgegR6MSu5qTfNYxv)

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Let $v1\_setfam\_1 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_compos\_1 : \iota \Rightarrow \iota$ be given. Let $v2\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k4\_amistd\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_amistd\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_setfam\_1\ X0) \wedge (((\neg v2\_struct\_0\ X1) \wedge ((v2\_memstr\_0\ X1\ X0) \wedge ((v3\_memstr\_0\ X1\ X0) \wedge (l1\_extpro\_1\ X1\ X0)))) \wedge (m1\_subset\_1\ X2\ (u1\_compos\_1\ X1)))) \Rightarrow (m1\_subset\_1\ (k4\_amistd\_4\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_setfam\_1\ X0) \wedge (((\neg v2\_struct\_0\ X1) \wedge ((v2\_memstr\_0\ X1\ X0) \wedge ((v3\_memstr\_0\ X1\ X0) \wedge (l1\_extpro\_1\ X1\ X0)))) \wedge (((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ (u1\_struct\_0\ X1)) \wedge ((v1\_funct\_1\ X2) \wedge ((v5\_funct\_1\ X2\ (k2\_memstr\_0\ X0\ X1)) \wedge (v1\_partfun1\ X2\ (u1\_struct\_0\ X1)))))) \wedge ((m1\_subset\_1\ X3\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X4\ (k4\_memstr\_0\ X0\ X1\ X3)))))) \Rightarrow ((v1\_relat\_1\ (k1\_amistd\_4\ X0\ X1\ X2\ X3\ X4)) \wedge ((v4\_relat\_1\ (k1\_amistd\_4\ X0\ X1\ X2\ X3\ X4)\ (u1\_struct\_0\ X1)) \wedge ((v1\_funct\_1\ (k1\_amistd\_4\ X0\ X1\ X2\ X3\ X4)) \wedge ((v5\_funct\_1\ (k1\_amistd\_4\ X0\ X1\ X2\ X3\ X4)\ (k2\_memstr\_0\ X0\ X1)) \wedge (v1\_partfun1\ (k1\_amistd\_4\ X0\ X1\ X2\ X3\ X4)\ (u1\_struct\_0\ X1))))))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_setfam\_1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge ((v2\_memstr\_0\ X1\ X0)\wedge((v3\_memstr\_0\ X1\ X0)\wedge(l1\_extpro\_1\ X1\ X0))))\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_compos\_1\ X1))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X1)))\Rightarrow((X3 = k4\_amistd\_4\ X0\ X1\ X2)\Leftrightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1))\Rightarrow((X4 \in X3)\Leftrightarrow(\neg\forall X5.((v1\_relat\_1\ X5)\wedge((v4\_relat\_1\ X5\ (u1\_struct\_0\ X1))\wedge((v1\_funct\_1\ X5)\wedge((v5\_funct\_1\ X5\ (k2\_memstr\_0\ X0\ X1))\wedge(v1\_partfun1\ X5\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (k4\_memstr\_0\ X0\ X1\ X4))\Rightarrow (k2\_extpro\_1\ X0\ X1\ X2\ (k1\_amistd\_4\ X0\ X1\ X5\ X4\ X6) = k1\_amistd\_4\ X0\ X1\ (k2\_extpro\_1\ X0\ X1\ X2\ X5)\ X4\ X6)))))))) \tag{4}$$

Assume the following.

$$\forall X0.(\neg v1\_setfam\_1\ X0)\Rightarrow(\forall X1.((v2\_memstr\_0\ X1\ X0)\wedge (l1\_extpro\_1\ X1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_compos\_1\ X1))\Rightarrow((v2\_extpro\_1\ X2\ X0\ X1)\Leftrightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ (u1\_struct\_0\ X1))\wedge((v1\_funct\_1\ X3)\wedge((v5\_funct\_1\ X3\ (k2\_memstr\_0\ X0\ X1))\wedge(v1\_partfun1\ X3\ (u1\_struct\_0\ X1))))))\Rightarrow (k2\_extpro\_1\ X0\ X1\ X2\ X3 = X3))))) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Leftrightarrow(\forall X1.\neg X1 \in X0) \tag{6}$$

Theorem 1

$$\forall X0.(\neg v1\_setfam\_1\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge ((v2\_memstr\_0\ X1\ X0)\wedge((v3\_memstr\_0\ X1\ X0)\wedge(l1\_extpro\_1\ X1\ X0))))\Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_compos\_1\ X1))\Rightarrow((v2\_extpro\_1\ X2\ X0\ X1)\Rightarrow(v1\_xboole\_0\ (k4\_amistd\_4\ X0\ X1\ X2)))))$$