t30_instalg1 (TMZYAXPo2YmaUXTuMxi5A8WfPEVeEsuz2rN)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $m1\_instalg1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_instalg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $r3\_pua2mss1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_relat\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_instalg1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_partfun1 : \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_instalg1 : \iota \Rightarrow o$ be given. Let $l5\_struct\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0) \Rightarrow (\forall X1.(l1\_msualg\_1\ X1) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge (v1\_funct\_1\ X3)) \Rightarrow ((r3\_pua2mss1\ X0\ X1\ X2\ X3) \Rightarrow (((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (u4\_struct\_0\ X1))))))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1) \Rightarrow (k5\_relat\_1\ X1\ X0 = k3\_relat\_1\ (k4\_relat\_1\ X0)\ X1) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge(v1\_funct\_1\ X3))\Rightarrow((r3\_pua2mss1\ X0\ X1\ X2\ X3)\Rightarrow(\forall X4.(l3\_msualg\_1\ X4\ X1)\Rightarrow(\forall X5.(l3\_msualg\_1\ X5\ X1)\Rightarrow(\forall X6.(m2\_pboole\ X6\ (u1\_struct\_0\ X1)\ (u3\_msualg\_1\ X1\ X4)\ (u3\_msualg\_1\ X1\ X5))\Rightarrow(m2\_pboole\ (k3\_relat\_1\ X2\ X6)\ (u1\_struct\_0\ X0)\ (u3\_msualg\_1\ X0\ (k1\_instalg1\ X0\ X1\ X4\ X2\ X3))\ (u3\_msualg\_1\ X0\ (k1\_instalg1\ X0\ X1\ X5\ X2\ X3))))))))))) \tag{3}$$

Assume the following.

$$\forall X0.k6\_partfun1\ X0 = k4\_relat\_1\ X0 \tag{4}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k4\_relat\_1\ X0))\wedge(v1\_funct\_1\ (k4\_relat\_1\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((l1\_struct\_0\ X0)\wedge(l2\_msualg\_1\ X1\ X0))\Rightarrow((v1\_relat\_1\ (u3\_msualg\_1\ X0\ X1))\wedge((v4\_relat\_1\ (u3\_msualg\_1\ X0\ X1)\ (u1\_struct\_0\ X0))\wedge((v1\_funct\_1\ (u3\_msualg\_1\ X0\ X1))\wedge(v1\_partfun1\ (u3\_msualg\_1\ X0\ X1)\ (u1\_struct\_0\ X0))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge(v1\_partfun1\ X1\ X0))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_partfun1\ X2\ X0)))))\Rightarrow(\forall X3.(m2\_pboole\ X3\ X0\ X1\ X2)\Rightarrow((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge(v1\_partfun1\ X3\ X0))))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_instalg1\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.(m1\_instalg1\ X1\ X0)\Rightarrow(l1\_msualg\_1\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.(l5\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.(l3\_msualg\_1\ X1\ X0)\Rightarrow(l2\_msualg\_1\ X1\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0)\Rightarrow(l5\_struct\_0\ X0) \tag{11}$$

Assume the following.

$$\forall X0.v1\_relat\_1\ (k4\_relat\_1\ X0) \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(l1\_msualg\_1\ X1))\Rightarrow(\forall X2.(l3\_msualg\_1\ X2\ X0)\Rightarrow(k2\_instalg1\ X0\ X1\ X2 = k1\_instalg1\ X1\ X0\ X2\ (k6\_partfun1\ (u1\_struct\_0\ X1))\ (k6\_partfun1\ (u4\_struct\_0\ X1))))) \tag{13}$$

Assume the following.

$$\forall X0.((v1\_instalg1\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.(l1\_msualg\_1\ X1)\Rightarrow((m1\_instalg1\ X1\ X0)\Leftrightarrow(r3\_pua2mss1\ X1\ X0\ (k6\_partfun1\ (u1\_struct\_0\ X1))\ (k6\_partfun1\ (u4\_struct\_0\ X1))))) \tag{14}$$

Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0)\Rightarrow((\neg v2\_struct\_0\ X0)\Rightarrow(v1\_instalg1\ X0)) \tag{15}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(m1\_instalg1\ X1\ X0))\Rightarrow(\forall X2.(l3\_msualg\_1\ X2\ X0)\Rightarrow(\forall X3.(l3\_msualg\_1\ X3\ X0)\Rightarrow(\forall X4.(m2\_pboole\ X4\ (u1\_struct\_0\ X0)\ (u3\_msualg\_1\ X0\ X2)\ (u3\_msualg\_1\ X0\ X3))\Rightarrow(m2\_pboole\ (k5\_relat\_1\ X4\ (u1\_struct\_0\ X1))\ (u1\_struct\_0\ X1)\ (u3\_msualg\_1\ X1\ (k2\_instalg1\ X0\ X1\ X2))\ (u3\_msualg\_1\ X1\ (k2\_instalg1\ X0\ X1\ X3)))))))$$