l34_cfuncdom (TMaog7fbavvWuwoR1htgsDVjPavgdeP3YoG)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k7\_cfuncdom : \iota \Rightarrow \iota$ be given. Let $k5\_cfuncdom : \iota \Rightarrow \iota$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_numbers : \iota$ be given. Let $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_cfuncdom : \iota \Rightarrow \iota$ 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 $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v36\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l3\_struct\_0 : \iota \Rightarrow o$ be given. Let $u3\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $u2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l5\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l4\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l4\_struct\_0 : \iota \Rightarrow o$ be given. Let $k1\_cfuncdom : \iota \Rightarrow \iota$ be given. Let $k4\_cfuncdom : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m2\_funct\_2\ X1\ X0\ k2\_numbers\ (k9\_funct\_2\ X0\ k2\_numbers)) \Rightarrow (r2\_funct\_2\ X0\ k2\_numbers\ (k1\_funcsdom\ X0\ k2\_numbers\ (k2\_cfuncdom\ X0)\ (k5\_cfuncdom\ X0)\ X1)\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m2\_funct\_2\ X1\ X0\ k2\_numbers\ (k9\_funct\_2\ X0\ k2\_numbers)) \Rightarrow (\forall X2.(m2\_funct\_2\ X2\ X0\ k2\_numbers\ (k9\_funct\_2\ X0\ k2\_numbers)) \Rightarrow (r2\_funct\_2\ X0\ k2\_numbers\ (k1\_funcsdom\ X0\ k2\_numbers\ (k2\_cfuncdom\ X0)\ X1\ X2)\ (k1\_funcsdom\ X0\ k2\_numbers\ (k2\_cfuncdom\ X0)\ X2\ X1)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge ((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((r2\_funct\_2\ X0\ X1\ X2\ X3)\Leftrightarrow(X2 = X3)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X1)\wedge(m1\_funct\_2\ X2\ X0\ X1))\Rightarrow(\forall X3.(m2\_funct\_2\ X3\ X0\ X1\ X2)\Leftrightarrow(m1\_subset\_1\ X3\ X2)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge(m1\_subset\_1\ X3\ X0)))\Rightarrow(k5\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X1)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ X1)\ (k9\_funct\_2\ X0\ X1))\ (k9\_funct\_2\ X0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ X1)\ (k9\_funct\_2\ X0\ X1))\ (k9\_funct\_2\ X0\ X1))))))\wedge((m1\_subset\_1\ X3\ (k9\_funct\_2\ X0\ X1))\wedge(m1\_subset\_1\ X4\ (k9\_funct\_2\ X0\ X1)))))\Rightarrow(k1\_funcsdom\ X0\ X1\ X2\ X3\ X4 = k1\_binop\_1\ X2\ X3\ X4) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X3\ X0)\wedge(m1\_subset\_1\ X4\ X0))))\Rightarrow(\forall X5.\forall X6.\forall X7.\forall X8.\forall X9.(g6\_algstr\_0\ X0\ X1\ X2\ X3\ X4 = g6\_algstr\_0\ X5\ X6\ X7\ X8\ X9)\Rightarrow((X0 = X5)\wedge((X1 = X6)\wedge((X2 = X7)\wedge((X3 = X8)\wedge(X4 = X9))))) \tag{7}$$

Assume the following.

$$\neg v1\_xboole\_0\ k2\_numbers \tag{8}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow((\neg v2\_struct\_0\ (k7\_cfuncdom\ X0))\wedge(v36\_algstr\_0\ (k7\_cfuncdom\ X0))) \tag{9}$$

Assume the following.

$$\forall X0.(l3\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (u3\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (u2\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0) \Rightarrow ((v1\_funct\_1\ (u2\_algstr\_0\ X0)) \wedge ((v1\_funct\_2\ (u2\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ (u2\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{12}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0) \Rightarrow ((v1\_funct\_1\ (u1\_algstr\_0\ X0)) \wedge ((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ (u1\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X1) \wedge (m1\_funct\_2\ X2\ X0\ X1)) \Rightarrow (\forall X3.(m2\_funct\_2\ X3\ X0\ X1\ X2) \Rightarrow ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ X0\ X1) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))) \tag{14}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0) \Rightarrow ((l2\_algstr\_0\ X0) \wedge (l5\_algstr\_0\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.(l5\_algstr\_0\ X0) \Rightarrow ((l4\_algstr\_0\ X0) \wedge (l4\_struct\_0\ X0)) \tag{16}$$

Assume the following.

$$\forall X0.(l4\_struct\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l3\_struct\_0\ X0)) \tag{17}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0\ X0) \Rightarrow ((l3\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \tag{18}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(m1\_funct\_2\ (k9\_funct\_2\ X0\ X1)\ X0\ X1) \tag{20}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(l6\_algstr\_0\ (k7\_cfuncdom\ X0)) \tag{21}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(m2\_funct\_2\ (k5\_cfuncdom\ X0)\ X0\ k2\_numbers\ (k9\_funct\_2\ X0\ k2\_numbers)) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge(m1\_subset\_1\ X3\ X0)))\Rightarrow(m1\_subset\_1\ (k5\_binop\_1\ X0\ X1\ X2\ X3)\ X0) \tag{23}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow((v1\_funct\_1\ (k2\_cfuncdom\ X0))\wedge((v1\_funct\_2\ (k2\_cfuncdom\ X0)\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ k2\_numbers)\ (k9\_funct\_2\ X0\ k2\_numbers))\ (k9\_funct\_2\ X0\ k2\_numbers))\wedge(m1\_subset\_1\ (k2\_cfuncdom\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ k2\_numbers)\ (k9\_funct\_2\ X0\ k2\_numbers))\ (k9\_funct\_2\ X0\ k2\_numbers))))) \tag{24}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X1)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ X1)\ (k9\_funct\_2\ X0\ X1))\ (k9\_funct\_2\ X0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_funct\_2\ X0\ X1)\ (k9\_funct\_2\ X0\ X1))\ (k9\_funct\_2\ X0\ X1))))))\wedge((m1\_subset\_1\ X3\ (k9\_funct\_2\ X0\ X1))\wedge(m1\_subset\_1\ X4\ (k9\_funct\_2\ X0\ X1)))))\Rightarrow(m2\_funct\_2\ (k1\_funcsdom\ X0\ X1\ X2\ X3\ X4)\ X0\ X1\ (k9\_funct\_2\ X0\ X1)) \tag{25}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(k7\_cfuncdom\ X0 = g6\_algstr\_0\ (k9\_funct\_2\ X0\ k2\_numbers)\ (k1\_cfuncdom\ X0)\ (k2\_cfuncdom\ X0)\ (k5\_cfuncdom\ X0)\ (k4\_cfuncdom\ X0)) \tag{26}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k6\_algstr\_0\ X0\ X1\ X2 = k5\_binop\_1\ (u1\_struct\_0\ X0)\ (u2\_algstr\_0\ X0)\ X1\ X2))) \tag{27}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0)\Rightarrow((v36\_algstr\_0\ X0)\Rightarrow(X0 = g6\_algstr\_0\ (u1\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ (u2\_algstr\_0\ X0)\ (u3\_struct\_0\ X0)\ (u2\_struct\_0\ X0))) \tag{28}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ (k7\_cfuncdom\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k7\_cfuncdom\ X0)))\Rightarrow((X2 = k5\_cfuncdom\ X0)\Rightarrow((k6\_algstr\_0\ (k7\_cfuncdom\ X0)\ X2\ X1 = X1)\wedge(k6\_algstr\_0\ (k7\_cfuncdom\ X0)\ X1\ X2 = X1)))))$$