l5_prvect_1 (TM-bYyrLDee8Wq7QeDFqdhJrjDh4GRynPJoW)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ 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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))) \wedge ((m1\_subset\_1\ X2\ X0) \wedge (m1\_subset\_1\ X3\ X0))) \Rightarrow (k5\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))) \wedge ((m1\_subset\_1\ X2\ X0) \wedge (m1\_subset\_1\ X3\ X0))) \Rightarrow (k3\_binop\_1\ X0\ X1\ X2\ X3 = k1\_binop\_1\ X1\ X2\ X3) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0) \Rightarrow ((v1\_funct\_1\ (u1\_algstr\_0\ X0)) \wedge ((v1\_funct\_2\ (u1\_algstr\_0\ X0)\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ (u1\_algstr\_0\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0))\ (u1\_struct\_0\ X0)))))) \tag{3}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X1)\wedge ((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((m1\_subset\_1\ X2\ X0)\wedge (m1\_subset\_1\ X3\ X0)))\Rightarrow(m1\_subset\_1\ (k3\_binop\_1\ X0\ X1\ X2\ X3)\ X0) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v3\_rlvect\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow (k1\_algstr\_0\ X0\ (k1\_algstr\_0\ X0\ X1\ X2)\ X3 = k1\_algstr\_0\ X0\ X1\ (k1\_algstr\_0\ X0\ X2\ X3)))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow((v2\_binop\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ X0)\Rightarrow(k3\_binop\_1\ X0\ X1\ X2\ (k3\_binop\_1\ X0\ X1\ X3\ X4) = k3\_binop\_1\ X0\ X1\ (k3\_binop\_1\ X0\ X1\ X2\ X3)\ X4))))) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow((v2\_rlvect\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_0\ X0\ X1\ X2 = k1\_algstr\_0\ X0\ X2\ X1)))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\Rightarrow((v1\_binop\_1\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ X0)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ X0)\Rightarrow(k3\_binop\_1\ X0\ X1\ X2\ X3 = k3\_binop\_1\ X0\ X1\ X3\ X2)))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_algstr\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_0\ X0\ X1\ X2 = k5\_binop\_1\ (u1\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ X1\ X2))) \tag{10}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\Rightarrow(((v1\_binop\_1\ (u1\_algstr\_0\ X0)\ (u1\_struct\_0\ X0))\wedge(v2\_binop\_1\ (u1\_algstr\_0\ X0)\ (u1\_struct\_0\ X0)))\Rightarrow((v2\_rlvect\_1\ X0)\wedge(v3\_rlvect\_1\ X0)))$$