

l71\_mod\_4 (TMcTR-  
WkuWN9pbbpKZxZ46jGbuQge3qkdUNNs)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  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  $v13\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ &X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))) \Rightarrow (\forall X1. ((\neg \\ &v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 \\ &X1) \wedge (l2\_algstr\_0 X1)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ &X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge ((v13\_vectsp\_1 X2 X1 X0) \wedge \\ &(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\ &X0)))))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (k3\_funct\_2 \\ &(u1\_struct\_0 X1) (u1\_struct\_0 X0) X2 (k4\_algstr\_0 X1 X3) = k4\_algstr\_0 \\ &X0 (k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X0) X2 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 (k3\_funct\_2 X0 X1 X2 X3) X1) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge(l1\_algstr\_0 X1))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow((v13\_vectsp\_1 X2 X0 X1)\Leftrightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 (k1\_algstr\_0 X0 X3 X4) = k1\_algstr\_0 X1 (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X3) (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X4)))))))) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k5\_algstr\_0 X0 X1 X2 = k1\_algstr\_0 X0 X1 (k4\_algstr\_0 X0 X2)))) \quad (8)$$

### Theorem 1

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge(l2\_algstr\_0 X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge(l2\_algstr\_0 X1))))))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0))\wedge((v13\_vectsp\_1 X2 X1 X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0))))))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X1))\Rightarrow(k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X0) X2 (k5\_algstr\_0 X1 X3 X4) = k5\_algstr\_0 X0 (k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X0) X2 X3) (k3\_funct\_2 (u1\_struct\_0 X1) (u1\_struct\_0 X0) X2 X4)))))))) \quad (9)$$