t60_zmodul01 (TMPTBZTMwAP-NfW76suwxGCjyA2nqWdD15p6)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v2\_zmodul01 : \iota \Rightarrow o$ be given. Let $v3\_zmodul01 : \iota \Rightarrow o$ be given. Let $v4\_zmodul01 : \iota \Rightarrow o$ be given. Let $v5\_zmodul01 : \iota \Rightarrow o$ be given. Let $l1\_zmodul01 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k5\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_zmodul01 : \iota \Rightarrow \iota$ be given. Let $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_zmodul01 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l2\_algstr\_0\ X0))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow ((k1\_algstr\_0\ X0\ X1\ (k4\_struct\_0\ X0) = X1) \wedge (k1\_algstr\_0\ X0\ (k4\_struct\_0\ X0)\ X1 = X1))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v2\_zmodul01\ X0) \wedge ((v3\_zmodul01\ X0) \wedge ((v4\_zmodul01\ X0) \wedge ((v5\_zmodul01\ X0) \wedge (l1\_zmodul01\ X0))))))))) \Rightarrow (\forall X1.(m1\_zmodul01\ X1\ X0) \Rightarrow (r1\_struct\_0\ X1\ (k4\_struct\_0\ X0))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge (m1\_subset\_1\ X1\ X0)) \Rightarrow (k6\_domain\_1\ X0\ X1 = k1\_tarski\ X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1\ X0)\wedge(l1\_algstr\_0\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k3\_rlvect\_1\ X0\ X1\ X2 = k1\_algstr\_0\ X0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_zmodul01\ X0)\wedge((v3\_zmodul01\ X0)\wedge((v4\_zmodul01\ X0)\wedge((v5\_zmodul01\ X0)\wedge(l1\_zmodul01\ X0))))))))))\Rightarrow(\forall X1.(m1\_zmodul01\ X1\ X0)\Rightarrow((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v2\_zmodul01\ X1)\wedge((v3\_zmodul01\ X1)\wedge((v4\_zmodul01\ X1)\wedge((v5\_zmodul01\ X1)\wedge(l1\_zmodul01\ X1)))))))))))) \tag{6}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0)\Rightarrow((l2\_struct\_0\ X0)\wedge(l1\_algstr\_0\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l1\_zmodul01\ X0)\Rightarrow(l2\_algstr\_0\ X0) \tag{9}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (k4\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v2\_zmodul01\ X0)\wedge((v3\_zmodul01\ X0)\wedge((v4\_zmodul01\ X0)\wedge((v5\_zmodul01\ X0)\wedge(l1\_zmodul01\ X0))))))))))\Rightarrow((v1\_zmodul01\ (k3\_zmodul01\ X0))\wedge(m1\_zmodul01\ (k3\_zmodul01\ X0)\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(r1\_struct\_0\ X0\ X1)\Leftrightarrow(X1 \in u1\_struct\_0\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski\ X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v2\_zmodul01\ X0) \wedge ((v3\_zmodul01\ X0) \wedge ((v4\_zmodul01\ X0) \wedge ((v5\_zmodul01\ X0) \wedge (l1\_zmodul01\ X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_zmodul01\ X2\ X0) \Rightarrow (k5\_zmodul01\ X0\ X1\ X2 = ReplSep\ (toset\ (\lambda X3 : \iota.m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)))\ (\lambda X3 : \iota.r1\_struct\_0\ X2\ X3)\ (\lambda X3 : \iota.k3\_rlvect\_1\ X0\ X1\ X3)))) \tag{14}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v2\_zmodul01\ X0) \wedge ((v3\_zmodul01\ X0) \wedge ((v4\_zmodul01\ X0) \wedge ((v5\_zmodul01\ X0) \wedge (l1\_zmodul01\ X0)))))))))) \Rightarrow (\forall X1.((v1\_zmodul01\ X1) \wedge (m1\_zmodul01\ X1\ X0)) \Rightarrow ((X1 = k3\_zmodul01\ X0) \Leftrightarrow (u1\_struct\_0\ X1 = k6\_domain\_1\ (u1\_struct\_0\ X0)\ (k4\_struct\_0\ X0)))) \tag{15}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v2\_zmodul01\ X0) \wedge ((v3\_zmodul01\ X0) \wedge ((v4\_zmodul01\ X0) \wedge ((v5\_zmodul01\ X0) \wedge (l1\_zmodul01\ X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (k5\_zmodul01\ X0\ X1\ (k3\_zmodul01\ X0) = k6\_domain\_1\ (u1\_struct\_0\ X0)\ X1))$$