t11_zmodul01 (TMSB5SBJzsQq3SxYG18565zTVtM5f3ff1B6)

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Let $v1\_int\_1 : \iota \Rightarrow o$ be given. 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 $v6\_zmodul01 : \iota \Rightarrow o$ be given. Let $k1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k4\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_int\_1\ X0) \Rightarrow (\forall X1.(v1\_int\_1\ X1) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge ((v13\_algstr\_0\ X2) \wedge ((v2\_rlvect\_1\ X2) \wedge ((v3\_rlvect\_1\ X2) \wedge ((v4\_rlvect\_1\ X2) \wedge ((v2\_zmodul01\ X2) \wedge ((v3\_zmodul01\ X2) \wedge ((v4\_zmodul01\ X2) \wedge ((v5\_zmodul01\ X2) \wedge (l1\_zmodul01\ X2))))))))) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2)) \Rightarrow (k1\_zmodul01\ X2\ X3\ (k6\_xcmplx\_0\ X0\ X1) = k5\_algstr\_0\ X2\ (k1\_zmodul01\ X2\ X3\ X0)\ (k1\_zmodul01\ X2\ X3\ X1))))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (k2\_xcmplx\_0\ X0\ k6\_numbers = X0) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l2\_algstr\_0\ X0))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (k5\_algstr\_0\ X0\ X1\ X1 = k4\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow (k6\_xcmplx\_0\ (k4\_xcmplx\_0\ X0)\ (k4\_xcmplx\_0\ X1) = k6\_xcmplx\_0\ X1\ X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0\ X0)\wedge((v1\_xcmplx\_0\ X1)\wedge(v1\_xcmplx\_0\ X2)))\Rightarrow(k2\_xcmplx\_0\ (k2\_xcmplx\_0\ X0\ X1)\ X2 = k2\_xcmplx\_0\ X0\ (k2\_xcmplx\_0\ X1\ X2)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k2\_xcmplx\_0\ X0\ (k4\_xcmplx\_0\ X1) = k6\_xcmplx\_0\ X0\ X1) \tag{6}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0)\Rightarrow(k4\_xcmplx\_0\ (k4\_xcmplx\_0\ X0) = X0) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_int\_1\ X0)\wedge(v1\_int\_1\ X1))\Rightarrow(v1\_int\_1\ (k6\_xcmplx\_0\ X0\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_int\_1\ X0)\Rightarrow((v1\_xcmplx\_0\ (k4\_xcmplx\_0\ X0))\wedge(v1\_int\_1\ (k4\_xcmplx\_0\ X0))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_zmodul01\ X0)\Rightarrow(l2\_algstr\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_zmodul01\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(v1\_int\_1\ X2)))\Rightarrow(m1\_subset\_1\ (k1\_zmodul01\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_zmodul01\ X0))\Rightarrow((v6\_zmodul01\ X0)\Leftrightarrow(\forall X1.(v1\_int\_1\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\neg(k1\_zmodul01\ X0\ X2\ X1 = k4\_struct\_0\ X0)\wedge((X1\neq k6\_numbers)\wedge(X2\neq k4\_struct\_0\ X0))))))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k2\_xcmplx\_0\ X0\ X1 = k2\_xcmplx\_0\ X1\ X0) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{14}$$

Assume the following.

$$\forall X0.(v1\_int\_1\ X0)\Rightarrow(v1\_xreal\_0\ X0) \tag{15}$$

Theorem 1

$$\forall X0.(v1\_int\_1\ X0)\Rightarrow(\forall X1.(v1\_int\_1\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v13\_algstr\_0\ X2)\wedge((v2\_rlvect\_1\ X2)\wedge((v3\_rlvect\_1\ X2)\wedge((v4\_rlvect\_1\ X2)\wedge((v2\_zmodul01\ X2)\wedge((v3\_zmodul01\ X2)\wedge((v4\_zmodul01\ X2)\wedge((v5\_zmodul01\ X2)\wedge(l1\_zmodul01\ X2))))))))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(((v6\_zmodul01\ X2)\wedge(k1\_zmodul01\ X2\ X3\ X0 = k1\_zmodul01\ X2\ X3\ X1))\Rightarrow((X3 = k4\_struct\_0\ X2)\vee(X0 = X1))))))$$