t16_ring_1 (TMEgvLbB-muoB3aMo59dexRLa7gAoYREHTYB)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_vectsp\_1 : \iota \Rightarrow o$ 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 $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6\_struct\_0 : \iota \Rightarrow o$ be given. Let $k2\_ring\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_ring\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $k5\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ 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 $l3\_struct\_0 : \iota \Rightarrow o$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v36\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k8\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6\_vectsp\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge ((v1\_ideal\_1\ X1\ X0) \wedge ((v2\_ideal\_1\ X1\ X0) \wedge ((v3\_ideal\_1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X2 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X3) \Leftrightarrow (k5\_algstr\_0\ X0\ X2\ X3 \in X1))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v3\_vectsp\_1\ X0)\wedge(l6\_algstr\_0\ X0)))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge((v2\_ideal\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\Rightarrow((v1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Leftrightarrow(\neg k5\_struct\_0\ X0\in X1)))) \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0)\Rightarrow((l2\_algstr\_0\ X0)\wedge(l5\_algstr\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l5\_algstr\_0\ X0)\Rightarrow((l4\_algstr\_0\ X0)\wedge(l4\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0\ X0)\Rightarrow((l3\_struct\_0\ X0)\wedge(l3\_algstr\_0\ X0)) \tag{6}$$

Assume the following.

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

Assume the following.

$$\forall X0.(l3\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (k5\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0)\Rightarrow(m1\_subset\_1\ (k4\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\wedge((\neg v1\_xboole\_0\ X1)\wedge((v1\_ideal\_1\ X1\ X0)\wedge((v2\_ideal\_1\ X1\ X0)\wedge((v3\_ideal\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))))\Rightarrow((v36\_algstr\_0\ (k2\_ring\_1\ X0\ X1))\wedge(l6\_algstr\_0\ (k2\_ring\_1\ X0\ X1))) \tag{10}$$

Assume the following.

$$\forall X0.(l4\_struct\_0\ X0)\Rightarrow((v6\_struct\_0\ X0)\Leftrightarrow(k4\_struct\_0\ X0 = k5\_struct\_0\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge((v1\_ideal\_1\ X1\ X0)\wedge((v2\_ideal\_1\ X1\ X0)\wedge((v3\_ideal\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))))\Rightarrow(\forall X2.((v36\_algstr\_0\ X2)\wedge(l6\_algstr\_0\ X2))\Rightarrow((X2 = k2\_ring\_1\ X0\ X1)\Leftrightarrow((u1\_struct\_0\ X2 = k8\_eqrel\_1\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1))\wedge((k5\_struct\_0\ X2 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ (k5\_struct\_0\ X0))\wedge((k4\_struct\_0\ X2 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ (k4\_struct\_0\ X0))\wedge((\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X2))\Rightarrow(\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\wedge(\exists X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0))\wedge((X3 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X5)\wedge((X4 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X6)\wedge(k5\_binop\_1\ (u1\_struct\_0\ X2)\ (u1\_algstr\_0\ X2)\ X3\ X4 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ (k3\_rlvect\_1\ X0\ X5\ X6)))))))))\wedge(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X2))\Rightarrow(\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\wedge(\exists X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0))\wedge((X3 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X5)\wedge((X4 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ X6)\wedge(k5\_binop\_1\ (u1\_struct\_0\ X2)\ (u2\_algstr\_0\ X2)\ X3\ X4 = k6\_eqrel\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X0)\ (k1\_ring\_1\ X0\ X1)\ (k6\_algstr\_0\ X0\ X5\ X6)))))))))))))))) \tag{12}$$

Assume the following.

$$\forall X0.(l4\_algstr\_0\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge(v4\_vectsp\_1\ X0))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v3\_vectsp\_1\ X0)\wedge(v6\_vectsp\_1\ X0)))) \tag{13}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v3\_group\_1\ X0)\wedge((v4\_vectsp\_1\ X0)\wedge((v5\_vectsp\_1\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge(l6\_algstr\_0\ X0)))))))))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge((v1\_ideal\_1\ X1\ X0)\wedge((v2\_ideal\_1\ X1\ X0)\wedge((v3\_ideal\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))))\Rightarrow((v1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Leftrightarrow(\neg v6\_struct\_0\ (k2\_ring\_1\ X0\ X1))))$$