t15_ringcat1 (TMK9Rfh2dW4nfW3JYk5uAs8TytQxUfsp8Px)

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Let $r2\_ringcat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xtuple\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ 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 $l2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l3\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_0 : \iota \Rightarrow o$ be given. Let $k5\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u3\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v36\_algstr\_0 : \iota \Rightarrow o$ 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 $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $k5\_vectsp\_1 : \iota \Rightarrow \iota$ be given. Let $u2\_algstr\_0 : \iota \Rightarrow \iota$ be given. Let $g6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ \forall X6.\forall X7.(k6\_xtuple\_0\ X0\ X1\ X2\ X3 = k6\_xtuple\_0\ X4\ X5\ X6\ X7) \Rightarrow ((X0 = X4) \wedge ((X1 = X5) \wedge ((X2 = X6) \wedge (X3 = X7)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ (k3\_xtuple\_0\ X0\ X1\ X2 = k3\_xtuple\_0\ X3\ X4\ X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5))) \tag{2}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0\ X0) \Rightarrow ((l2\_algstr\_0\ X0) \wedge (l5\_algstr\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l5\_algstr\_0\ X0) \Rightarrow ((l4\_algstr\_0\ X0) \wedge (l4\_struct\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l4\_struct\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l3\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l3\_struct\_0\ X0) \Rightarrow (k5\_struct\_0\ X0 = u3\_struct\_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (k4\_struct\_0\ X0 = u2\_struct\_0\ X0) \tag{8}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.(r2\_ringcat1\ X0\ X1) \Leftrightarrow (\exists X2.\exists X3.\\ \exists X4.\exists X5.\exists X6.\exists X7.(X0 = k3\_xtuple\_0\\ (k6\_xtuple\_0\ X2\ X3\ X4\ X5)\ X6\ X7) \wedge (\exists X8.((\neg v2\_struct\_0\ X8) \wedge\\ ((v13\_algstr\_0\ X8) \wedge ((v36\_algstr\_0\ X8) \wedge ((v2\_rlvect\_1\ X8) \wedge ((\\ v3\_rlvect\_1\ X8) \wedge ((v4\_rlvect\_1\ X8) \wedge ((v3\_group\_1\ X8) \wedge ((v4\_vectsp\_1\\ X8) \wedge ((v5\_vectsp\_1\ X8) \wedge (l6\_algstr\_0\ X8)))))))))) \wedge ((X1 = X8) \wedge\\ ((X2 = u1\_struct\_0\ X8) \wedge ((X3 = u1\_algstr\_0\ X8) \wedge ((X4 = k5\_vectsp\_1\\ X8) \wedge ((X5 = k4\_struct\_0\ X8) \wedge ((X6 = u2\_algstr\_0\ X8) \wedge (X7 = k5\_struct\_0\\ X8)))))))))\end{gathered} \tag{9}$$

Assume the following.

$$\begin{gathered}\forall X0.(l6\_algstr\_0\ X0) \Rightarrow ((v36\_algstr\_0\ X0) \Rightarrow (X0 = g6\_algstr\_0\\ (u1\_struct\_0\ X0)\ (u1\_algstr\_0\ X0)\ (u2\_algstr\_0\ X0)\ (u3\_struct\_0\\ X0)\ (u2\_struct\_0\ X0)))\end{gathered} \tag{10}$$

Theorem 1

$$\begin{gathered}\forall X0.\forall X1.\forall X2.((r2\_ringcat1\ X0\ X1) \wedge (r2\_ringcat1\\ X0\ X2)) \Rightarrow (X1 = X2)\end{gathered}$$