t5_group_5 (TMFCin-BadUZu7n8mhNkFgCkqBGLUXfsoAKw)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_group\_1 : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $l3\_algstr\_0 : \iota \Rightarrow o$ be given. Let $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_group\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v15\_algstr\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0)))) \Rightarrow (\forall X1.(m1\_group\_2\ X1\ X0) \Rightarrow (\forall X2.(m1\_group\_2\ X2\ X0) \Rightarrow ((k7\_group\_4\ X0\ X1\ X2 = k7\_group\_4\ X0\ X2\ X1) \Rightarrow (u1\_struct\_0\ (k8\_group\_4\ X0\ X1\ X2) = k7\_group\_4\ X0\ X1\ X2))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v2\_group\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge (l3\_algstr\_0\ X1)))) \Rightarrow (\forall X2.(m1\_group\_2\ X2\ X1) \Rightarrow (\forall X3.(m1\_group\_2\ X3\ X1) \Rightarrow ((X0 \in k7\_group\_4\ X1\ X2\ X3) \Leftrightarrow (\exists X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1)) \wedge (\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X1)) \wedge ((X0 = k6\_algstr\_0\ X1\ X4\ X5) \wedge ((r1\_struct\_0\ X2\ X4) \wedge (r1\_struct\_0\ X3\ X5)))))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0))) \Rightarrow (\forall X1.(m1\_group\_2\ X1\ X0) \Rightarrow ((\neg v2\_struct\_0\ X1) \wedge ((v2\_group\_1\ X1) \wedge (l3\_algstr\_0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1\ X0)\wedge(l3\_algstr\_0\ X0))))\wedge((m1\_group\_2\ X1\ X0)\wedge(m1\_group\_2\ X2\ X0)))\Rightarrow((v15\_algstr\_0\ (k8\_group\_4\ X0\ X1\ X2))\wedge(m1\_group\_2\ (k8\_group\_4\ X0\ X1\ X2)\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow(\forall X1.(r1\_struct\_0\ X0\ X1)\Leftrightarrow(X1 \in u1\_struct\_0\ X0)) \tag{6}$$

Theorem 1

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v2\_group\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge(l3\_algstr\_0\ X1))))\Rightarrow(\forall X2.(m1\_group\_2\ X2\ X1)\Rightarrow(\forall X3.(m1\_group\_2\ X3\ X1)\Rightarrow((k7\_group\_4\ X1\ X2\ X3 = k7\_group\_4\ X1\ X3\ X2)\Rightarrow((r1\_struct\_0\ (k8\_group\_4\ X1\ X2\ X3)\ X0)\Leftrightarrow(\exists X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1))\wedge(\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X1))\wedge((X0 = k6\_algstr\_0\ X1\ X4\ X5)\wedge((r1\_struct\_0\ X2\ X4)\wedge(r1\_struct\_0\ X3\ X5)))))))))$$