t7_algstr_3 (TMLiGpfBjMcCuzQtZBZ5q8Zuu9g4XQZPLb8)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_algstr\_3 : \iota \Rightarrow o$ be given. Let $l1\_algstr\_3 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_algstr\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_struct\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_algstr\_3\ X0) \wedge (l1\_algstr\_3\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow ((k1\_algstr\_3\ X0\ X1\ X2\ X3 = k1\_algstr\_3\ X0\ X1\ X4\ X3) \Rightarrow ((X1 = k4\_struct\_0\ X0) \vee (X2 = X4)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0) \wedge (l1\_algstr\_3\ X0)) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge ((m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))))) \Rightarrow (m1\_subset\_1\ (k1\_algstr\_3\ X0\ X1\ X2\ X3)\ (u1\_struct\_0\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_algstr\_3\ X0))\Rightarrow((v2\_algstr\_3\ X0)\Leftrightarrow((k4\_struct\_0\ X0\neq k5\_struct\_0\ X0)\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_3\ X0\ X1\ (k5\_struct\_0\ X0)\ (k4\_struct\_0\ X0) = X1))\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_3\ X0\ (k5\_struct\_0\ X0)\ X1\ (k4\_struct\_0\ X0) = X1))\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_3\ X0\ X1\ (k4\_struct\_0\ X0)\ X2 = X2)))\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_algstr\_3\ X0\ (k4\_struct\_0\ X0)\ X1\ X2 = X2)))\wedge((\forall X1.(m1\_subset\_1\ X1\ (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(\exists X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\wedge(k1\_algstr\_3\ X0\ X1\ X2\ X4 = X3)))))\wedge((\forall X1.(m1\_subset\_1\ X1\ (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(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow((k1\_algstr\_3\ X0\ X1\ X2\ X3 = k1\_algstr\_3\ X0\ X1\ X2\ X4)\Rightarrow(X3 = X4))))))\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((X1\neq X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\wedge(\exists X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0))\wedge((k1\_algstr\_3\ X0\ X5\ X1\ X6 = X3)\wedge(k1\_algstr\_3\ X0\ X5\ X2\ X6 = X4)))))))))\wedge((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((X1\neq X2)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\wedge(k1\_algstr\_3\ X0\ X1\ X5\ X3 = k1\_algstr\_3\ X0\ X2\ X5\ X4)))))))\wedge(\forall X1.(m1\_subset\_1\ X1\ (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(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0))\Rightarrow(\neg(k1\_algstr\_3\ X0\ X3\ X1\ X5 = k1\_algstr\_3\ X0\ X4\ X1\ X6)\wedge((k1\_algstr\_3\ X0\ X3\ X2\ X5 = k1\_algstr\_3\ X0\ X4\ X2\ X6)\wedge((X1\neq X2)\wedge(X3\neq X4))))))))))))))))))))) \tag{3}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_algstr\_3\ X0)\wedge(l1\_algstr\_3\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow((X1\neq k4\_struct\_0\ X0)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\exists X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\wedge(k1\_algstr\_3\ X0\ X4\ X1\ X2 = X3))))))$$