t31_midsp_2 (TMaN-RHcx5R3VxsRDZFhTrYskdHDXwZyS8ns)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_midsp\_1 : \iota \Rightarrow o$ be given. Let $l1\_midsp\_1 : \iota \Rightarrow o$ be given. Let $v4\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_midsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_midsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_algstr\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_midsp\_1\ X0) \wedge (l1\_midsp\_1\ X0))) \Rightarrow (\forall X1.((v4\_midsp\_2\ X1\ X0) \wedge (l1\_midsp\_2\ X1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0)) \Rightarrow ((k3\_midsp\_1\ X0\ X2\ X3 = k3\_midsp\_1\ X0\ X4\ X5) \Leftrightarrow (k9\_midsp\_2\ X0\ X1\ X2\ X3 = k1\_algstr\_0\ (u1\_midsp\_2\ X0\ X1)\ (k9\_midsp\_2\ X0\ X1\ X2\ X4)\ (k9\_midsp\_2\ X0\ X1\ X2\ X5)))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_midsp\_1\ X0) \wedge (l1\_midsp\_1\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((k3\_midsp\_1\ X0\ X1\ X2 = X3) \Leftrightarrow (k8\_midsp\_1\ X0\ X1\ X3 = k8\_midsp\_1\ X0\ X3\ X2))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge (l1\_midsp\_1\ X0)) \wedge (l1\_midsp\_2\ X1\ X0)) \Rightarrow ((\neg v2\_struct\_0\ (u1\_midsp\_2\ X0\ X1)) \wedge (l2\_algstr\_0\ (u1\_midsp\_2\ X0\ X1))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0\ X0)\wedge((v2\_midsp\_1\ X0)\wedge(l1\_midsp\_1\ X0)))\wedge((l1\_midsp\_2\ X1\ X0)\wedge((m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)))))\Rightarrow(m1\_subset\_1\ (k9\_midsp\_2\ X0\ X1\ X2\ X3)\ (u1\_struct\_0\ (u1\_midsp\_2\ X0\ X1))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_algstr\_0\ X0))\Rightarrow(\forall X1.\ (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k1\_midsp\_2\ X0\ X1 = k1\_algstr\_0\ X0\ X1\ X1)) \tag{5}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_midsp\_1\ X0)\wedge(l1\_midsp\_1\ X0)))\Rightarrow(\forall X1.((v4\_midsp\_2\ X1\ X0)\wedge(l1\_midsp\_2\ X1\ X0))\Rightarrow(\forall X2.\ (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow((k3\_midsp\_1\ X0\ X2\ X3 = X4)\Leftrightarrow(k9\_midsp\_2\ X0\ X1\ X2\ X3 = k1\_midsp\_2\ (u1\_midsp\_2\ X0\ X1)\ (k9\_midsp\_2\ X0\ X1\ X2\ X4)))))))$$