t16_sheffer1 (TMaf8JTfZmdZLgWtE5u5Edg2GmPS4iLkhDH)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v4\_lattices : \iota \Rightarrow o$ be given. Let $v6\_lattices : \iota \Rightarrow o$ be given. Let $v8\_lattices : \iota \Rightarrow o$ be given. Let $v9\_lattices : \iota \Rightarrow o$ be given. Let $v11\_lattices : \iota \Rightarrow o$ be given. Let $v7\_robbins1 : \iota \Rightarrow o$ be given. Let $l3\_lattices : \iota \Rightarrow o$ be given. Let $v5\_lattices : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_lattices : \iota \Rightarrow o$ be given. Let $k2\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2\_lattices : \iota \Rightarrow o$ be given. Let $k1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v4\_lattices\ X0) \wedge ((v6\_lattices\ X0) \wedge ((v8\_lattices\ X0) \wedge ((v9\_lattices\ X0) \wedge ((v11\_lattices\ X0) \wedge ((v7\_robbins1\ X0) \wedge (l3\_lattices\ X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (k4\_lattices\ X0\ (k3\_lattices\ X0\ (k3\_lattices\ X0\ X1\ X2)\ X3)\ X1 = X1)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v6\_lattices\ X0) \wedge (l1\_lattices\ X0))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (k4\_lattices\ X0\ X1\ X2 = k2\_lattices\ X0\ X1\ X2) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v4\_lattices\ X0) \wedge (l2\_lattices\ X0))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow (k3\_lattices\ X0\ X1\ X2 = k1\_lattices\ X0\ X1\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v6\_lattices\ X0) \wedge ((v8\_lattices\ X0) \wedge ((v9\_lattices\ X0) \wedge (l3\_lattices\ X0))))) \wedge (m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))) \Rightarrow (k4\_lattices\ X0\ X1\ X1 = X1) \tag{4}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow((l1\_lattices\ X0)\wedge(l2\_lattices\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l2\_lattices\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(m1\_subset\_1\ (k1\_lattices\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l3\_lattices\ X0))\Rightarrow((v9\_lattices\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k2\_lattices\ X0\ X1\ (k1\_lattices\ X0\ X1\ X2) = X1)))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_lattices\ X0))\Rightarrow((v5\_lattices\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(k1\_lattices\ X0\ X1\ (k1\_lattices\ X0\ X2\ X3) = k1\_lattices\ X0\ (k1\_lattices\ X0\ X1\ X2)\ X3))))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l3\_lattices\ X0))\Rightarrow((v11\_lattices\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(k2\_lattices\ X0\ X1\ (k1\_lattices\ X0\ X2\ X3) = k1\_lattices\ X0\ (k2\_lattices\ X0\ X1\ X2)\ (k2\_lattices\ X0\ X1\ X3)))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v6\_lattices\ X0)\wedge(l1\_lattices\ X0)))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k4\_lattices\ X0\ X1\ X2 = k4\_lattices\ X0\ X2\ X1) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((v4\_lattices\ X0)\wedge(l2\_lattices\ X0)))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))))\Rightarrow(k3\_lattices\ X0\ X1\ X2 = k3\_lattices\ X0\ X2\ X1) \tag{11}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v4\_lattices\ X0)\wedge((v6\_lattices\ X0)\wedge((v8\_lattices\ X0)\wedge((v9\_lattices\ X0)\wedge((v11\_lattices\ X0)\wedge((v7\_robbins1\ X0)\wedge(l3\_lattices\ X0))))))))\Rightarrow(v5\_lattices\ X0)$$