t51_filter_0 (TMSLbMChtXDMjvVVZxrk-wvVXwzcyq3xRWL9)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v10\_lattices : \iota \Rightarrow o$ be given. Let $l3\_lattices : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v19\_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20\_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k6\_filter\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_lattices : \iota \Rightarrow o$ be given. Let $l2\_lattices : \iota \Rightarrow o$ be given. Let $k1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1\_lattices : \iota \Rightarrow o$ be given. Let $v5\_lattices : \iota \Rightarrow o$ be given. Let $v7\_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v10\_lattices\ X0) \wedge (l3\_lattices\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.((\neg v1\_xboole\_0\ X3) \wedge ((v19\_lattices\ X3\ X0) \wedge ((v20\_lattices\ X3\ X0) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ (k6\_filter\_0\ X0\ X3))) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ (k6\_filter\_0\ X0\ X3))) \Rightarrow (((X1 = X4) \wedge (X2 = X5)) \Rightarrow ((k3\_lattices\ X0\ X1\ X2 = k3\_lattices\ (k6\_filter\_0\ X0\ X3)\ X4\ X5) \wedge (k4\_lattices\ X0\ X1\ X2 = k4\_lattices\ (k6\_filter\_0\ X0\ X3)\ X4\ X5)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v6\_lattices\ X0) \wedge ((v8\_lattices\ X0) \wedge ((v9\_lattices\ X0) \wedge (l3\_lattices\ X0))))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)))) \Rightarrow ((r3\_lattices\ X0\ X1\ X2) \Leftrightarrow (r1\_lattices\ X0\ X1\ X2)) \tag{2}$$

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.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow((l1\_lattices\ X0)\wedge(l2\_lattices\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\wedge((\neg v1\_xboole\_0\ X1)\wedge((v19\_lattices\ X1\ X0)\wedge((v20\_lattices\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))))\Rightarrow((\neg v2\_struct\_0\ (k6\_filter\_0\ X0\ X1))\wedge((v10\_lattices\ (k6\_filter\_0\ X0\ X1))\wedge(l3\_lattices\ (k6\_filter\_0\ X0\ X1)))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_lattices\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((r1\_lattices\ X0\ X1\ X2)\Leftrightarrow(k1\_lattices\ X0\ X1\ X2 = X2)))) \tag{6}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge(v10\_lattices\ X0))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v4\_lattices\ X0)\wedge((v5\_lattices\ X0)\wedge((v6\_lattices\ X0)\wedge((v7\_lattices\ X0)\wedge((v8\_lattices\ X0)\wedge(v9\_lattices\ X0)))))))) \tag{7}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.((\neg v1\_xboole\_0\ X3)\wedge((v19\_lattices\ X3\ X0)\wedge((v20\_lattices\ X3\ X0)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ (k6\_filter\_0\ X0\ X3)))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ (k6\_filter\_0\ X0\ X3)))\Rightarrow(((X1 = X4)\wedge(X2 = X5))\Rightarrow((r3\_lattices\ X0\ X1\ X2)\Leftrightarrow(r3\_lattices\ (k6\_filter\_0\ X0\ X3)\ X4\ X5))))))))$$