

## t53\_filter\_2

(TMUToobtoQKiDYJzY77DR6P88HFSn5njx8D)

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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  $v17\_lattices : \iota \Rightarrow o$  be given. Let  $k1\_lattice2 : \iota \Rightarrow \iota$  be given. Let  $v15\_lattices : \iota \Rightarrow o$  be given. Let  $v16\_lattices : \iota \Rightarrow o$  be given. Let  $v11\_lattices : \iota \Rightarrow o$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ &X0))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v15\_lattices \\ &X0) \wedge ((v16\_lattices X0) \wedge (l3\_lattices X0)))))) \Leftrightarrow ((\neg v2\_struct\_0 \\ &(k1\_lattice2 X0)) \wedge ((v10\_lattices (k1\_lattice2 X0)) \wedge ((v15\_lattices \\ &(k1\_lattice2 X0)) \wedge ((v16\_lattices (k1\_lattice2 X0)) \wedge (l3\_lattices \\ &(k1\_lattice2 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ &X0))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v11\_lattices \\ &X0) \wedge (l3\_lattices X0)))))) \Leftrightarrow ((\neg v2\_struct\_0 (k1\_lattice2 X0)) \wedge \\ &((v10\_lattices (k1\_lattice2 X0)) \wedge ((v11\_lattices (k1\_lattice2 \\ &X0)) \wedge (l3\_lattices (k1\_lattice2 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices X0))) \Rightarrow ((v3\_lattices (k1\_lattice2 X0)) \wedge (v10\_lattices (k1\_lattice2 X0))) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_lattices X0)) \Rightarrow ((\neg v2\_struct\_0 (k1\_lattice2 X0)) \wedge (v3\_lattices (k1\_lattice2 X0))) \quad (4)$$

Assume the following.

$$\forall X0. (l3\_lattices X0) \Rightarrow ((v3\_lattices (k1\_lattice2 X0)) \wedge (l3\_lattices (k1\_lattice2 X0))) \quad (5)$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge((v11\_lattices\ X0)\wedge((v15\_lattices\ X0)\wedge(v16\_lattices\ X0))))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge(v17\_lattices\ X0))) \quad (6)$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge(v17\_lattices\ X0))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v11\_lattices\ X0)\wedge((v15\_lattices\ X0)\wedge(v16\_lattices\ X0)))))) \quad (7)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v17\_lattices\ X0)\wedge(l3\_lattices\ X0))))\Leftrightarrow((\neg v2\_struct\_0\ (k1\_lattice2\ X0))\wedge((v10\_lattices\ (k1\_lattice2\ X0))\wedge((v17\_lattices\ (k1\_lattice2\ X0))\wedge(l3\_lattices\ (k1\_lattice2\ X0))))))$$