

t46\_filter\_1 (TMbmRRrqiMCKqitKYCpRYbAGe-  
HqWB9gydLT)

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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  $k7\_filter\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices X1) \wedge (l3\_lattices \\ & X1))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (v15\_lattices \\ & X0) \wedge ((v16\_lattices X0) \wedge (l3\_lattices X0)))) \wedge ((\neg v2\_struct\_0 \\ & X1) \wedge ((v10\_lattices X1) \wedge ((v15\_lattices X1) \wedge ((v16\_lattices X1) \wedge \\ & (l3\_lattices X1)))))) \Leftrightarrow ((\neg v2\_struct\_0 (k7\_filter\_1 X0 X1)) \wedge \\ & (v10\_lattices (k7\_filter\_1 X0 X1)) \wedge ((v15\_lattices (k7\_filter\_1 \\ & X0 X1)) \wedge ((v16\_lattices (k7\_filter\_1 X0 X1)) \wedge (l3\_lattices (k7\_filter\_1 \\ & X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices X1) \wedge (l3\_lattices \\ & X1))) \Rightarrow (((v15\_lattices X0) \wedge (v15\_lattices X1)) \Leftrightarrow (v15\_lattices \\ & (k7\_filter\_1 X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices X1) \wedge (l3\_lattices \\ & X1))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v11\_lattices \\ & X0) \wedge (l3\_lattices X0)))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices \\ & X1) \wedge ((v11\_lattices X1) \wedge (l3\_lattices X1)))))) \Leftrightarrow ((\neg v2\_struct\_0 \\ & (k7\_filter\_1 X0 X1)) \wedge ((v10\_lattices (k7\_filter\_1 X0 X1)) \wedge ((v11\_lattices \\ & (k7\_filter\_1 X0 X1)) \wedge (l3\_lattices (k7\_filter\_1 X0 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge((v11\_lattices\ X0)\wedge((v15\_lattices\ X0)\wedge(v16\_lattices\ X0))))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge(v17\_lattices\ X0))) \quad (4)$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge(v17\_lattices\ X0))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v11\_lattices\ X0)\wedge((v15\_lattices\ X0)\wedge(v16\_lattices\ X0)))))) \quad (5)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v10\_lattices\ X1)\wedge(l3\_lattices\ X1))))\Rightarrow((((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v17\_lattices\ X0)\wedge(l3\_lattices\ X0))))\wedge((\neg v2\_struct\_0\ X1)\wedge((v10\_lattices\ X1)\wedge((v17\_lattices\ X1)\wedge(l3\_lattices\ X1))))))\Leftrightarrow((\neg v2\_struct\_0\ (k7\_filter\_1\ X0\ X1))\wedge((v10\_lattices\ (k7\_filter\_1\ X0\ X1))\wedge((v17\_lattices\ (k7\_filter\_1\ X0\ X1))\wedge(l3\_lattices\ (k7\_filter\_1\ X0\ X1))))))$$