

## t40\_lattice3

(TMSe7KUNYUSsBi4cH32fDyTxK9gxFXdddd5)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $v4\_lattice3 : \iota \Rightarrow o$  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  $r4\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_lattices X0)) \Rightarrow (((\neg v2\_struct\_0 \\ & X0) \wedge ((v10\_lattices X0) \wedge ((v4\_lattice3 X0) \wedge (l3\_lattices X0)))) \Rightarrow \\ & (\forall X1. \forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 = \\ & k15\_lattice3 X0 X1) \Leftrightarrow ((r4\_lattice3 X0 X2 X1) \wedge (\forall X3. (m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow ((r4\_lattice3 X0 X3 X1) \Rightarrow (r1\_lattices X0 X2 \\ & X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_lattices X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (r4\_lattice3 X0 \\ & X1 X2) \Leftrightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 \in X2) \Rightarrow \\ & (r1\_lattices X0 X3 X1)))) \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v4\_lattice3 \\ & X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X2. ((X1 \in X2) \wedge (r4\_lattice3 X0 X1 X2)) \Rightarrow (k15\_lattice3 \\ & X0 X2 = X1))) \end{aligned}$$