

## l33\_lattice6

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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  $k4\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $k4\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k13\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 (k3\_lattice3 \\ & X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 (k3\_lattice3 \\ & X0)))) \Rightarrow (k13\_lattice3 (k3\_lattice3 X0) X1 X2 = k3\_lattices X0 (k5\_lattice3 \\ & X0 X1) (k5\_lattice3 X0 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 (k3\_lattice3 \\ & X0))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 (k3\_lattice3 \\ & X0)))) \Rightarrow (k12\_lattice3 (k3\_lattice3 X0) X1 X2 = k4\_lattices X0 (k5\_lattice3 \\ & X0 X1) (k5\_lattice3 X0 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge \\ & (l3\_lattices X0))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 \\ & (k4\_lattice3 X0 X1) (u1\_struct\_0 (k3\_lattice3 X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 (k3\_lattice3 \\ & X0)))) \Rightarrow (k5\_lattice3 X0 X1 = X1) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k4\_lattice3 X0 X1 = X1)) \quad (5)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k4\_lattices X0 X1 X2 = k12\_lattice3 (k3\_lattice3 X0) (k4\_lattice3 X0 X1) (k4\_lattice3 X0 X2)) \wedge (k3\_lattices X0 X1 X2 = k13\_lattice3 (k3\_lattice3 X0) (k4\_lattice3 X0 X1) (k4\_lattice3 X0 X2))))))$$