

# t15\_lattice3

(TMX7CPMtm5xBDRVebKQfsai8d8EgTKqcdWT)

October 27, 2020

Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 \\
& X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 = k11\_lattice3 X0 X1 X2) \Leftrightarrow \\
& ((r1\_orders\_2 X0 X3 X1) \wedge ((r1\_orders\_2 X0 X3 X2) \wedge (\forall X4. (m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 X0 \\
& X4 X2)) \Rightarrow (r1\_orders\_2 X0 X4 X3))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1\_orders\_2 X0) \Rightarrow ((v2\_lattice3 X0) \Leftrightarrow (\forall X1. ( \\
& m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0)) \Rightarrow (\exists X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge \\
& ((r1\_orders\_2 X0 X3 X1) \wedge ((r1\_orders\_2 X0 X3 X2) \wedge (\forall X4. (m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X4 X1) \wedge (r1\_orders\_2 X0 \\
& X4 X2)) \Rightarrow (r1\_orders\_2 X0 X4 X3))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow ((v2\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \tag{3}$$

### Theorem 1

$$\begin{aligned}
& \forall X0. ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 X0) \wedge (l1\_orders\_2 \\
& X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k11\_lattice3 X0 X1 X2 = k11\_lattice3 \\
& X0 X2 X1)))
\end{aligned}$$