

## l26\_lattice3

(TMVy7pjiiL3Q7mvwDiPNPqYUKqDP6bbYcKi)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_lattice3 : \iota \Rightarrow o$  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  $k10\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(l1\_orders\_2 X0) \Rightarrow ((v5\_orders\_2 X0) \Rightarrow (\forall X1.( \\
 & \quad m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
 & \quad (u1\_struct\_0 X0)) \Rightarrow ((\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
 & \quad X0)) \wedge ((r1\_orders\_2 X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4. \\
 & (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 \\
 & \quad X0 X2 X4)) \Rightarrow (r1\_orders\_2 X0 X3 X4)))))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
 & \quad X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 = k10\_lattice3 X0 X1 X2) \Leftrightarrow ((r1\_orders\_2 \\
 & \quad X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 X4 ( \\
 & \quad u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 X2 X4)) \Rightarrow \\
 & \quad (r1\_orders\_2 X0 X3 X4))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Leftrightarrow (\forall X1.( \\
 & \quad m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\
 & \quad (u1\_struct\_0 X0)) \Rightarrow (\exists X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \wedge \\
 & ((r1\_orders\_2 X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 \\
 & \quad X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 \\
 & \quad X2 X4)) \Rightarrow (r1\_orders\_2 X0 X3 X4))))))))))
 \end{aligned} \tag{2}$$

### Theorem 1

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 \\
 & \quad X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
 & \quad X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((X3 = k10\_lattice3 X0 X1 X2) \Leftrightarrow \\
 & ((r1\_orders\_2 X0 X1 X3) \wedge ((r1\_orders\_2 X0 X2 X3) \wedge (\forall X4.(m1\_subset\_1 \\
 & \quad X4 (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X1 X4) \wedge (r1\_orders\_2 X0 \\
 & \quad X2 X4)) \Rightarrow (r1\_orders\_2 X0 X3 X4))))))))))
 \end{aligned}$$