

t3_yellow_3 (TMQzwzd- DUA7EGVshYfuNFCoCnFzavdraQr)

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Let $v4_orders_2 : \iota \Rightarrow o$ 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 $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v4_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & (((r1_orders_2 X0 X1 X2) \wedge (r1_orders_2 X0 X2 X3)) \Rightarrow (r1_orders_2 \\ & X0 X1 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge (l1_orders_2 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow ((X3 = k13_lattice3 X0 X1 X2) \Leftrightarrow ((r1_orders_2 \\ & X0 X1 X3) \wedge ((r1_orders_2 X0 X2 X3) \wedge (\forall X4.(m1_subset_1 X4 (\\ & u1_struct_0 X0)) \Rightarrow (((r1_orders_2 X0 X1 X4) \wedge (r1_orders_2 X0 X2 X4)) \Rightarrow \\ & (r1_orders_2 X0 X3 X4)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v1_lattice3 \\ & X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k13_lattice3 \\ & X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_lattice3 \\ & X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\ & (u1_struct_0 X0)) \Rightarrow (((r1_orders_2 X0 X1 X3) \wedge (r1_orders_2 X0 X2 \\ & X4)) \Rightarrow (r1_orders_2 X0 (k13_lattice3 X0 X1 X2) (k13_lattice3 X0 X3 \\ & X4))))))))) \end{aligned}$$