

t78_waybel_1

(TMGmF9yzwMxrYamgtd9zd7MqQWZxRtdCBoB)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v9_waybel_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_waybel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $k12_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_lattice3 : \iota \Rightarrow o$ be given. Let $k13_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v9_waybel_1 \\ & X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow ((r1_orders_2 X0 X1 X2) \Rightarrow (r1_orders_2 X0 (k6_waybel_1 \\ & X0 X2 X3) (k6_waybel_1 X0 X1 X3))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow ((v9_waybel_1 \\ & X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow ((r1_orders_2 X0 (k11_lattice3 X0 X2 X3) X1) \Leftrightarrow \\ & (r1_orders_2 X0 X3 (k6_waybel_1 X0 X2 X1))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (((r1_orders_2 X0 X1 X2) \wedge (r1_orders_2 X0 X2 \\ & X1)) \Rightarrow (X1 = X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5_orders_2 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow ((X3 = k12_lattice3 X0 X1 X2) \Leftrightarrow ((r1_orders_2 \\
& X0 X3 X1) \wedge ((r1_orders_2 X0 X3 X2) \wedge (\forall X4.(m1_subset_1 X4 (\\
& u1_struct_0 X0)) \Rightarrow ((r1_orders_2 X0 X4 X1) \wedge (r1_orders_2 X0 X4 X2)) \Rightarrow \\
& (r1_orders_2 X0 X4 X3)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge (l1_orders_2 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow ((X3 = k13_lattice3 X0 X1 X2) \Leftrightarrow ((r1_orders_2 \\
& X0 X1 X3) \wedge ((r1_orders_2 X0 X2 X3) \wedge (\forall X4.(m1_subset_1 X4 (\\
& u1_struct_0 X0)) \Rightarrow ((r1_orders_2 X0 X1 X4) \wedge (r1_orders_2 X0 X2 X4)) \Rightarrow \\
& (r1_orders_2 X0 X3 X4)))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v5_orders_2 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k11_lattice3 X0 X1 X2 = k11_lattice3 \\
& X0 X2 X1)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v1_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
& m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k13_lattice3 X0 X1 X2 = k10_lattice3 \\
& X0 X1 X2)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v2_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
& m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k12_lattice3 X0 X1 X2 = k11_lattice3 \\
& X0 X1 X2)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_orders_2 \\
& X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\
& X0)))) \Rightarrow (m1_subset_1 (k6_waybel_1 X0 X1 X2) (u1_struct_0 X0))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_orders_2 X0)\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k11_lattice3 X0 X1 X2) (u1_struct_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1_orders_2 X0)\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k10_lattice3 X0 X1 X2) (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v9_waybel_1 X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge((v4_orders_2 X0)\wedge ((v5_orders_2 X0)\wedge((v1_lattice3 X0)\wedge(v2_lattice3 X0))))))) \quad (12)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_orders_2 X0))\Rightarrow((v9_waybel_1 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow(k6_waybel_1 X0 (k10_lattice3 X0 X1 X2) X3 = k11_lattice3 X0 (k6_waybel_1 X0 X1 X3) (k6_waybel_1 X0 X2 X3)))))))$$