

t50_waybel_2
(TMa7iZLEA2Nbd3nvvQC16oAygjtoRzjFKLZ)

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Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $v24_waybel_0 : \iota \Rightarrow o$ be given. Let $v1_lattice3 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v2_waybel_2 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v12_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k12_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_yellow_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k11_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_yellow_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_waybel_2 : \iota \Rightarrow o$ be given. Let $v19_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_yellow_2 : \iota \Rightarrow \iota$ be given. Let $k2_yellow_1 : \iota \Rightarrow \iota$ be given. Let $k7_waybel_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v5_orders_2 \\
& \quad X0) \wedge (l1_orders_2 X0)))) \Rightarrow ((\forall X1. ((\neg v1_xboole_0 X1) \wedge ((\\
& \quad v1_waybel_0 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& \quad X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge \\
& \quad (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k11_lattice3 \\
& \quad X0 (k1_yellow_0 X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k3_yellow_4 \\
& \quad X0 X1 X2))) \Rightarrow (v1_waybel_2 X0))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v24_waybel_0 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\
& ((\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_waybel_0 X1 X0) \wedge ((v12_waybel_0 \\
& X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge ((v12_waybel_0 X2 X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k12_lattice3 \\
& X0 (k1_yellow_0 X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k4_yellow_4 \\
& X0 X1 X2))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_waybel_0 X1 \\
& X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (u1_struct_0 X0)))))) \Rightarrow (k12_lattice3 X0 (k1_yellow_0 X0 X1) (k1_yellow_0 \\
& X0 X2) = k1_yellow_0 X0 (k4_yellow_4 X0 X1 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v24_waybel_0 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\
& ((v19_waybel_0 (k2_yellow_2 X0) (k2_yellow_1 (k7_waybel_0 X0)) \\
& X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_waybel_0 X1 X0) \wedge ((v12_waybel_0 \\
& X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. \\
& ((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge ((v12_waybel_0 X2 X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k12_lattice3 \\
& X0 (k1_yellow_0 X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k4_yellow_4 \\
& X0 X1 X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v2_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k4_yellow_4 \\
& X0 X1 X2 = k3_yellow_4 X0 X1 X2)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v2_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge \\
& m1_subset_1 X2 (u1_struct_0 X0))) \Rightarrow (k12_lattice3 X0 X1 X2 = k11_lattice3 \\
& X0 X1 X2)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v2_waybel_2 X0) \wedge \\ (l1_orders_2 X0)))))) \Rightarrow ((v1_funct_1 (k2_yellow_2 X0) \wedge ((v1_funct_2 \\ (k2_yellow_2 X0) (u1_struct_0 (k2_yellow_1 (k7_waybel_0 X0))) \\ (u1_struct_0 X0)) \wedge ((v19_waybel_0 (k2_yellow_2 X0) (k2_yellow_1 \\ (k7_waybel_0 X0)) X0) \wedge (v20_waybel_0 (k2_yellow_2 X0) (k2_yellow_1 \\ (k7_waybel_0 X0)) X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (l1_orders_2 X0) \Rightarrow (m1_subset_1 (k1_yellow_0 \\ X0 X1) (u1_struct_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 \\ X0))) \Rightarrow ((v2_waybel_2 X0) \Leftrightarrow ((v24_waybel_0 X0) \wedge (v1_waybel_2 X0))) \quad (8)$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow ((v2_lattice3 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ X0) \wedge ((v24_waybel_0 X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge \\ (l1_orders_2 X0)))))) \Rightarrow ((v2_waybel_2 X0) \Leftrightarrow (\forall X1. ((\neg v1_xboole_0 \\ X1) \wedge ((v1_waybel_0 X1 X0) \wedge ((v12_waybel_0 X1 X0) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 \\ X2) \wedge ((v1_waybel_0 X2 X0) \wedge ((v12_waybel_0 X2 X0) \wedge (m1_subset_1 \\ X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k12_lattice3 X0 (k1_yellow_0 \\ X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k4_yellow_4 X0 X1 X2)))))) \end{aligned}$$