

t52_waybel_2

(TMKRMwvsciJbsZLPzqqfL61T9fWSBUrqf5P)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v22_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_waybel_2 : \iota \Rightarrow \iota$ be given. Let $k3_yellow_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_waybel_2 : \iota \Rightarrow o$ 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. Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v24_waybel_0 X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge \\
& (l1_orders_2 X0)))))) \Rightarrow ((v2_waybel_2 X0) \Leftrightarrow (\forall X1.((\neg v1_xboole_0 \\
& X1) \wedge ((v1_waybel_0 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k12_lattice3 \\
& X0 (k1_yellow_0 X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k4_yellow_4 \\
& X0 X1 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v24_waybel_0 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\
& ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (u1_struct_0 X0)))))) \Rightarrow ((r3_orders_2 X0 X1 (k1_yellow_0 X0 X2)) \Rightarrow \\
& (r3_orders_2 X0 X1 (k1_yellow_0 X0 (k4_yellow_4 X0 (k6_domain_1 \\
& (u1_struct_0 X0) X1) X2)))))) \Rightarrow (v22_waybel_0 (k4_waybel_2 X0) \\
& (k3_yellow_3 X0 X0) X0))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v2_lattice3 X0) \wedge ((v1_waybel_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((\\
& \neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (u1_struct_0 X0)))))) \Rightarrow ((r3_orders_2 X0 X1 (k1_yellow_0 X0 X2)) \Rightarrow \\
& (X1 = k1_yellow_0 X0 (k4_yellow_4 X0 (k6_domain_1 (u1_struct_0 \\
& X0) X1) X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v24_waybel_0 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow ((v22_waybel_0 \\
& (k4_waybel_2 X0) (k3_yellow_3 X0 X0) X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 \\
& X1) \wedge ((v1_waybel_0 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 X2 X0) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k11_lattice3 \\
& X0 (k1_yellow_0 X0 X1) (k1_yellow_0 X0 X2) = k1_yellow_0 X0 (k3_yellow_4 \\
& X0 X1 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
& m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (r3_orders_2 X0 X1 X1)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v2_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
& X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k4_yellow_4 \\
& X0 X1 X2 = k3_yellow_4 X0 X1 X2)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v5_orders_2 X0) \wedge ((v2_lattice3 \\
& X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
& m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k12_lattice3 X0 X1 X2 = k11_lattice3 \\
& X0 X1 X2)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (l1_orders_2 X0) \Rightarrow (m1_subset_1 (k1_yellow_0 \\
& X0 X1) (u1_struct_0 X0))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1_orders_2 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 \\
& X0) \wedge (v2_waybel_2 X0))) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge \\
& ((v24_waybel_0 X0) \wedge (v1_waybel_2 X0))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v2_lattice3 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ & X0) \wedge ((v24_waybel_0 X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge \\ & (l1_orders_2 X0)))))) \Rightarrow ((v2_waybel_2 X0) \Leftrightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v1_waybel_0 \\ & X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r3_orders_2 \\ & X0 X1 (k1_yellow_0 X0 X2)) \Rightarrow (X1 = k1_yellow_0 X0 (k4_yellow_4 X0 (\\ & k6_domain_1 (u1_struct_0 X0) X1) X2)))))) \end{aligned}$$