

t35_waybel24 (TM-
ReWQWdXtsXq43SkifKmvv3oNkcNVk3q8U)

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Let $v2_pre_topc : \iota \Rightarrow o$ be given. 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 $v1_lattice3 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $v3_lattice3 : \iota \Rightarrow o$ be given. Let $v4_waybel11 : \iota \Rightarrow o$ be given. Let $l1_waybel_9 : \iota \Rightarrow o$ be given. Let $v8_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_waybel24 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_yellow_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_yellow_0 : \iota \Rightarrow o$ be given. Let $k3_yellow_0 : \iota \Rightarrow \iota$ be given. Let $k6_struct_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v22_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_yellow_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_yellow_0 : \iota \Rightarrow o$ be given. Let $v2_yellow_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge ((v5_orders_2 X1) \wedge ((v1_yellow_0 X1) \wedge (l1_orders_2 \\ & X1)))) \Rightarrow (k3_yellow_0 (k6_yellow_1 (u1_struct_0 X0) X1) = k6_struct_0 \\ & X0 X1 (k3_yellow_0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2_pre_topc\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge ((v1_lattice3\ X0) \wedge ((v2_lattice3\ X0) \wedge ((v3_lattice3\ X0) \wedge ((v4_waybel11\ X0) \wedge (l1_waybel_9\ X0)))))))) \Rightarrow \\
& (\forall X1.((v2_pre_topc\ X1) \wedge ((v3_orders_2\ X1) \wedge ((v4_orders_2\ X1) \wedge ((v5_orders_2\ X1) \wedge ((v1_lattice3\ X1) \wedge ((v2_lattice3\ X1) \wedge ((v3_lattice3\ X1) \wedge ((v4_waybel11\ X1) \wedge (l1_waybel_9\ X1)))))))) \Rightarrow \\
& (\forall X2.((\neg v1_xboole_0\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ (k3_waybel24\ X0\ X1)))))) \Rightarrow (k1_yellow_0\ (k6_yellow_1\ (u1_struct_0\ X0)\ X1)\ X2 \in u1_struct_0\ (k3_waybel24\ X0\ X1)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0) \wedge ((v3_orders_2\ X0) \wedge (l1_orders_2\ X0))) \wedge (((v3_orders_2\ X1) \wedge ((v4_orders_2\ X1) \wedge ((v5_orders_2\ X1) \wedge ((v1_lattice3\ X1) \wedge ((v2_lattice3\ X1) \wedge ((v3_lattice3\ X1) \wedge (l1_orders_2\ X1)))))) \wedge (m1_subset_1\ X2\ (u1_struct_0\ X1)))) \Rightarrow \\
& ((v1_funct_1\ (k6_struct_0\ X0\ X1\ X2)) \wedge ((v1_funct_2\ (k6_struct_0\ X0\ X1\ X2)\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)) \wedge (v22_waybel_0\ (k6_struct_0\ X0\ X1\ X2)\ X0\ X1)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v2_struct_0\ X1) \wedge (l1_orders_2\ X1)) \Rightarrow \\
& ((\neg v2_struct_0\ (k6_yellow_1\ X0\ X1)) \wedge (v1_orders_2\ (k6_yellow_1\ X0\ X1)))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(l1_waybel_9\ X0) \Rightarrow ((l1_pre_topc\ X0) \wedge (l1_orders_2\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0) \Rightarrow (l1_struct_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(l1_orders_2\ X1) \Rightarrow ((v1_orders_2\ (k6_yellow_1\ X0\ X1)) \wedge (l1_orders_2\ (k6_yellow_1\ X0\ X1))) \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((l1_struct_0\ X0) \wedge (((\neg v2_struct_0\ X1) \wedge (l1_struct_0\ X1)) \wedge (m1_subset_1\ X2\ (u1_struct_0\ X1)))) \Rightarrow (\\
& (v1_funct_1\ (k6_struct_0\ X0\ X1\ X2)) \wedge ((v1_funct_2\ (k6_struct_0\ X0\ X1\ X2)\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)) \wedge (m1_subset_1\ (k6_struct_0\ X0\ X1\ X2)\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X1))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (m1_subset_1 (k3_yellow_0 X0) (u1_struct_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((l1_pre_topc X0) \wedge ((\neg v2_struct_0 X1) \wedge (l1_waybel_9 X1))) \Rightarrow ((v1_orders_2 (k3_waybel24 X0 X1)) \wedge (l1_orders_2 (k3_waybel24 X0 X1))) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ (l1_waybel_9 X1)) \Rightarrow (\forall X2.((v1_orders_2 X2) \wedge (l1_orders_2 \\ X2)) \Rightarrow ((X2 = k3_waybel24 X0 X1) \Leftrightarrow ((v4_yellow_0 X2 (k6_yellow_1 \\ (u1_struct_0 X0) X1)) \wedge (m1_yellow_0 X2 (k6_yellow_1 (u1_struct_0 \\ X0) X1)))) \wedge (\forall X3.(X3 \in u1_struct_0 X2) \Leftrightarrow (\exists X4.((v1_funct_1 \\ X4) \wedge ((v1_funct_2 X4 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \wedge \\ ((X3 = X4) \wedge (v5_pre_topc X4 X0 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$k1_xboole_0 = the (\lambda X0 : \iota.v1_xboole_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ (m1_yellow_0 X1 X0) \Rightarrow ((v8_yellow_0 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 \\ X2 (k1_zfmisc_1 (u1_struct_0 X1)) \Rightarrow ((r1_yellow_0 X0 X2) \Rightarrow (k1_yellow_0 \\ X0 X2 \in u1_struct_0 X1)))))) \quad (14)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow (k3_yellow_0 X0 = k1_yellow_0 X0 k1_xboole_0) \quad (15)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v3_yellow_0 X0) \Rightarrow ((v1_yellow_0 \\ X0) \wedge (v2_yellow_0 X0))) \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v2_pre_topc\ X0) \wedge ((v3_orders_2\ X0) \wedge \\
& ((v4_orders_2\ X0) \wedge ((v5_orders_2\ X0) \wedge ((v1_lattice3\ X0) \wedge ((v2_lattice3 \\
& X0) \wedge ((v3_lattice3\ X0) \wedge ((v4_waybel11\ X0) \wedge (l1_waybel_9\ X0)))))))))) \wedge \\
& ((v2_pre_topc\ X1) \wedge ((v3_orders_2\ X1) \wedge ((v4_orders_2\ X1) \wedge ((v5_orders_2 \\
& X1) \wedge ((v1_lattice3\ X1) \wedge ((v2_lattice3\ X1) \wedge ((v3_lattice3\ X1) \wedge \\
& ((v4_waybel11\ X1) \wedge (l1_waybel_9\ X1)))))))))) \Rightarrow (\forall X2. (m1_subset_1 \\
& X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)))) \Rightarrow \\
& (((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ (u1_struct_0\ X0)\ (u1_struct_0 \\
& X1)) \wedge (v22_waybel_0\ X2\ X0\ X1))) \Rightarrow ((v1_funct_1\ X2) \wedge ((v1_funct_2 \\
& X2\ (u1_struct_0\ X0)\ (u1_struct_0\ X1)) \wedge (v5_pre_topc\ X2\ X0\ X1))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l1_orders_2\ X0) \Rightarrow (((\neg v2_struct_0\ X0) \wedge (v3_lattice3 \\
& X0)) \Rightarrow ((\neg v2_struct_0\ X0) \wedge (v3_yellow_0\ X0)))
\end{aligned} \tag{18}$$

Assume the following.

$$\forall X0. (l1_orders_2\ X0) \Rightarrow ((v1_lattice3\ X0) \Rightarrow (\neg v2_struct_0\ X0)) \tag{19}$$

Theorem 1

$$\begin{aligned}
& \forall X0. ((v2_pre_topc\ X0) \wedge ((v3_orders_2\ X0) \wedge ((v4_orders_2 \\
& X0) \wedge ((v5_orders_2\ X0) \wedge ((v1_lattice3\ X0) \wedge ((v2_lattice3\ X0) \wedge \\
& ((v3_lattice3\ X0) \wedge ((v4_waybel11\ X0) \wedge (l1_waybel_9\ X0)))))))))) \Rightarrow \\
& (\forall X1. ((v2_pre_topc\ X1) \wedge ((v3_orders_2\ X1) \wedge ((v4_orders_2 \\
& X1) \wedge ((v5_orders_2\ X1) \wedge ((v1_lattice3\ X1) \wedge ((v2_lattice3\ X1) \wedge \\
& ((v3_lattice3\ X1) \wedge ((v4_waybel11\ X1) \wedge (l1_waybel_9\ X1)))))))))) \Rightarrow \\
& ((v8_yellow_0\ (k3_waybel24\ X0\ X1)\ (k6_yellow_1\ (u1_struct_0\ X0) \\
& X1)) \wedge (m1_yellow_0\ (k3_waybel24\ X0\ X1)\ (k6_yellow_1\ (u1_struct_0 \\
& X0\ X1))))
\end{aligned}$$