

t41_waybel20 (TMbT- NVp2VdCCQvQzUZ17MS9RZzRzGger3PNT)

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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 $v1_lattice3 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $v3_lattice3 : \iota \Rightarrow o$ be given. Let $v3_waybel_3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k3_yellow_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_waybel20 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_waybel20 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_waybel20 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow (k8_eqrel_1 X0 X1 = k7_eqrel_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 \\ X0))) \Rightarrow (\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \wedge ((\neg v1_xboole_0 X1) \wedge ((v1_finset_1 X1) \wedge ((v1_waybel_0 X1 \\ X0) \wedge (v2_waybel_0 X1 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 \\ X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ (m1_subset_1 (k7_eqrel_1 X0 X1) (k1_zfmisc_1 (k1_zfmisc_1 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (\\ k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (m1_subset_1 (k6_eqrel_1 X0 \\ X1 X2 X3) (k1_zfmisc_1 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge \\ ((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 \\ X0) \wedge ((v3_waybel_3 X0) \wedge (l1_orders_2 X0)))))))) \wedge ((\neg v1_xboole_0 \\ X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_yellow_3 X0 \\ X0)))))) \Rightarrow ((v1_orders_2 (k5_waybel20 X0 X1)) \wedge ((v3_orders_2 (\\ k5_waybel20 X0 X1)) \wedge ((v4_orders_2 (k5_waybel20 X0 X1)) \wedge ((v5_orders_2 \\ (k5_waybel20 X0 X1)) \wedge ((v1_lattice3 (k5_waybel20 X0 X1)) \wedge ((v2_lattice3 \\ (k5_waybel20 X0 X1)) \wedge ((v3_lattice3 (k5_waybel20 X0 X1)) \wedge ((v3_waybel_3 \\ (k5_waybel20 X0 X1)) \wedge (l1_orders_2 (k5_waybel20 X0 X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((l1_orders_2 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 (k3_yellow_3 X0 X0)))))) \Rightarrow ((v1_partfun1 (k2_waybel20 \\ X0 X1) (u1_struct_0 X0)) \wedge ((v3_relat_2 (k2_waybel20 X0 X1)) \wedge ((\\ v8_relat_2 (k2_waybel20 X0 X1)) \wedge (m1_subset_1 (k2_waybel20 X0 \\ X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\
& ((v3_waybel_3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_yellow_3 X0 \\
& X0)))) \Rightarrow ((v1_waybel20 X1 X0) \Rightarrow (\forall X2.((v1_orders_2 X2) \wedge \\
& ((v3_orders_2 X2) \wedge ((v4_orders_2 X2) \wedge ((v5_orders_2 X2) \wedge ((v1_lattice3 \\
& X2) \wedge ((v2_lattice3 X2) \wedge ((v3_lattice3 X2) \wedge ((v3_waybel_3 X2) \wedge \\
& (l1_orders_2 X2)))))) \Rightarrow ((X2 = k5_waybel20 X0 X1) \Leftrightarrow ((u1_struct_0 \\
& X2 = k8_eqrel_1 (u1_struct_0 X0) (k2_waybel20 X0 X1)) \wedge (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 X2)) \Rightarrow ((r3_orders_2 X2 X3 X4) \Leftrightarrow (r3_orders_2 X0 (k2_yellow_0 \\
& X0 X3) (k2_yellow_0 X0 X4))))))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v3_relat_2 X1) \wedge ((v8_relat_2 X1) \wedge ((v1_partfun1 \\
& X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 X0))) \Rightarrow \\
& ((X2 = k7_eqrel_1 X0 X1) \Leftrightarrow (\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 \\
& X0)) \Rightarrow ((X3 \in X2) \Leftrightarrow (\exists X4.(X4 \in X0) \wedge (X3 = k6_eqrel_1 X0 X0 X1 X4))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \tag{12}$$

Assume the following.

$$\forall X0.(l1_orders_2 X0) \Rightarrow ((v1_lattice3 X0) \Rightarrow (\neg v2_struct_0 X0)) \tag{13}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\
& ((v3_waybel_3 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 (k3_yellow_3 X0 \\
& X0)))) \Rightarrow ((v1_waybel20 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& (k5_waybel20 X0 X1)) \Leftrightarrow (\exists X3.(m1_subset_1 X3 (u1_struct_0 \\
& X0)) \wedge (X2 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (k2_waybel20 \\
& X0 X1) X3))))))
\end{aligned}$$