

t45_waybel34
(TMMHB3pG9UzgxnnJPDpMHYKS5x8RC9cRANJ)

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Let $v2_setfam_1 : \iota \Rightarrow o$ 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 $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k9_waybel34 : \iota \Rightarrow \iota$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $v3_lattice3 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_waybel34 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $m1_altcat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_altcat_1 : \iota \Rightarrow o$ be given. Let $v2_altcat_1 : \iota \Rightarrow o$ be given. Let $v6_altcat_1 : \iota \Rightarrow o$ be given. Let $v3_altcat_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_altcat_1 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $v2_yellow21 : \iota \Rightarrow o$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v22_waybel_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_waybel34 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_yellow21 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_yellow21 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_altcat_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_altcat_1 : \iota \Rightarrow \iota$ be given. Let $k3_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_altcat_1 : \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. (\neg v2_setfam_1 X0) \Rightarrow (\forall X1. ((v3_orders_2 X1) \wedge ((v4_orders_2 X1) \wedge ((v5_orders_2 X1) \wedge ((v1_lattice3 X1) \wedge ((v2_lattice3 X1) \wedge (l1_orders_2 X1)))))) \Rightarrow ((m1_subset_1 X1 (u1_struct_0 (k5_waybel34 X0))) \Leftrightarrow ((v1_orders_2 X1) \wedge ((v3_lattice3 X1) \wedge (u1_struct_0 X1 \in X0)))))) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l2_altcat_1 X0) \Rightarrow (\forall X1.(m1_altcat_2 X1 X0) \Rightarrow (l2_altcat_1 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(l2_altcat_1 X0) \Rightarrow (l1_altcat_1 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1_altcat_1 X0) \Rightarrow (l1_struct_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v2_setfam_1 X0) \Rightarrow (&((\neg v2_struct_0 (k9_waybel34 X0)) \wedge \\ &((v2_altcat_1 (k9_waybel34 X0)) \wedge ((v6_altcat_1 (k9_waybel34 \\ X0)) \wedge ((v3_altcat_2 (k9_waybel34 X0) (k5_waybel34 X0)) \wedge (m1_altcat_2 \\ &(k9_waybel34 X0) (k5_waybel34 X0)))))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (&((\neg v2_struct_0 (k5_waybel34 X0)) \wedge \\ &((v2_altcat_1 (k5_waybel34 X0)) \wedge ((v6_altcat_1 (k5_waybel34 \\ X0)) \wedge ((v11_altcat_1 (k5_waybel34 X0)) \wedge ((v12_altcat_1 (k5_waybel34 \\ X0)) \wedge ((v2_yellow21 (k5_waybel34 X0)) \wedge (l2_altcat_1 (k5_waybel34 \\ X0)))))))) \quad (9) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0) \Rightarrow &((m1_subset_1 X1 X0) \Leftrightarrow \\ (X1 \in X0))) \wedge ((v1_xboole_0 X0) \Rightarrow &((m1_subset_1 X1 X0) \Leftrightarrow (v1_xboole_0 \\ X1))) \quad (10) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v2_setfam_1 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& ((v2_altcat_1 X1) \wedge ((v6_altcat_1 X1) \wedge ((v3_altcat_2 X1 (k5_waybel34 \\
& X0)) \wedge (m1_altcat_2 X1 (k5_waybel34 X0)))))) \Rightarrow ((X1 = k9_waybel34 \\
& X0) \Leftrightarrow ((\forall X2.(m1_subset_1 X2 (u1_struct_0 (k5_waybel34 X0))) \Rightarrow \\
& (m1_subset_1 X2 (u1_struct_0 X1))) \wedge (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 (k5_waybel34 X0))) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 (k5_waybel34 X0))) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X1)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 \\
& X1)) \Rightarrow (((X4 = X2) \wedge (X5 = X3)) \Rightarrow ((k1_altcat_1 (k5_waybel34 X0) X2 X3 = \\
& k1_xboole_0) \vee (\forall X6.(m1_subset_1 X6 (k1_altcat_1 (k5_waybel34 \\
& X0) X2 X3)) \Rightarrow ((X6 \in k1_altcat_1 X1 X4 X5) \Leftrightarrow (v22_waybel_0 (k2_waybel34 \\
& (k3_yellow21 (k5_waybel34 X0) X3) (k3_yellow21 (k5_waybel34 X0) \\
& X2) (k5_yellow21 (k5_waybel34 X0) X2 X3 X6)) (k3_yellow21 (k5_waybel34 \\
& X0) X3) (k3_yellow21 (k5_waybel34 X0) X2))))))))))))) \\
& \tag{11}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l2_altcat_1 X0) \Rightarrow (\forall X1.(l2_altcat_1 X1) \Rightarrow ((\\
& m1_altcat_2 X1 X0) \Leftrightarrow ((r1_tarski (u1_struct_0 X1) (u1_struct_0 \\
& X0)) \wedge ((r2_altcat_2 (k2_zfmisc_1 (u1_struct_0 X1) (u1_struct_0 \\
& X1)) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)) (u1_altcat_1 \\
& X1) (u1_altcat_1 X0)) \wedge (r2_altcat_2 (k3_zfmisc_1 (u1_struct_0 \\
& X1) (u1_struct_0 X1) (u1_struct_0 X1)) (k3_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0) (u1_struct_0 X0)) (u2_altcat_1 X1) (u2_altcat_1 \\
& X0)))))) \\
& \tag{12}
\end{aligned}$$

Assume the following.

$$\forall X0.(\neg v2_setfam_1 X0) \Rightarrow (\neg v1_xboole_0 X0) \tag{13}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v2_setfam_1 X0) \Rightarrow (\forall X1.((v3_orders_2 X1) \wedge \\
& ((v4_orders_2 X1) \wedge ((v5_orders_2 X1) \wedge ((v1_lattice3 X1) \wedge ((v2_lattice3 \\
& X1) \wedge (l1_orders_2 X1)))))) \Rightarrow ((m1_subset_1 X1 (u1_struct_0 (k9_waybel34 \\
& X0))) \Leftrightarrow ((v1_orders_2 X1) \wedge ((v3_lattice3 X1) \wedge (u1_struct_0 X1 \in \\
& X0))))))
\end{aligned}$$