

t83_abcmiz_0 (TMGgQT-
sYAvAzbzB7arCfzW1JUyRWmLte5VQ)

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Let $v2_struct_0 : \iota \Rightarrow o$ 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 $v1_abcmiz_0 : \iota \Rightarrow o$ be given. Let $v4_abcmiz_0 : \iota \Rightarrow o$ be given. Let $v9_abcmiz_0 : \iota \Rightarrow o$ be given. Let $v14_abcmiz_0 : \iota \Rightarrow o$ be given. Let $l3_abcmiz_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_abcmiz_0 : \iota \Rightarrow \iota$ be given. Let $r4_abcmiz_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_abcmiz_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_abcmiz_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v8_rewrite1 : \iota \Rightarrow o$ be given. Let $k11_abcmiz_0 : \iota \Rightarrow \iota$ be given. Let $v4_rewrite1 : \iota \Rightarrow o$ be given. Let $v3_rewrite1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_rewrite1 : \iota \Rightarrow o$ be given. Let $r2_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_abcmiz_0 : \iota \Rightarrow o$ be given. Let $k2_abcmiz_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_abcmiz_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1_xboole_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ & X0) \wedge ((v1_lattice3 X0) \wedge ((v1_abcmiz_0 X0) \wedge ((\neg v4_abcmiz_0 X0) \wedge \\ & ((v9_abcmiz_0 X0) \wedge ((v14_abcmiz_0 X0) \wedge (l3_abcmiz_0 X0)))))))))) \Rightarrow \\ & ((v8_rewrite1 (k11_abcmiz_0 X0)) \wedge (v4_rewrite1 (k11_abcmiz_0 \\ & X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\ & X0) \wedge ((v1_lattice3 X0) \wedge ((v1_abcmiz_0 X0) \wedge ((\neg v4_abcmiz_0 X0) \wedge \\ & ((v9_abcmiz_0 X0) \wedge (l3_abcmiz_0 X0)))))))))) \Rightarrow (v3_rewrite1 (k11_abcmiz_0 \\ & X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v2_rewrite1 X0) \wedge (v4_rewrite1 X0))) \Rightarrow (\forall X1. \forall X2. (r2_rewrite1 X0 X1 X2) \Rightarrow (k2_rewrite1 X0 X1 = k2_rewrite1 X0 X2)) \quad (4)$$

Assume the following.

$$\forall X0. (v1_relat_1 X0) \Rightarrow (\forall X1. \forall X2. (r1_rewrite1 X0 X1 X2) \Rightarrow ((r2_rewrite1 X0 X1 X2) \wedge (r2_rewrite1 X0 X2 X1))) \quad (5)$$

Assume the following.

$$\forall X0. ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge ((v1_abcmiz_0 X0) \wedge ((v9_abcmiz_0 X0) \wedge (l2_abcmiz_0 X0))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_abcmiz_0 X0)) \Rightarrow ((X2 \in k2_abcmiz_0 X0 X1) \Rightarrow ((r1_abcmiz_0 X0 X1 X2) \wedge (k5_abcmiz_0 X0 X1 X2 = X1)))))) \quad (6)$$

Assume the following.

$$\forall X0. (v1_relat_1 X0) \Rightarrow (\forall X1. \forall X2. (k4_tarski X1 X2 \in X0) \Rightarrow (r1_rewrite1 X0 X1 X2)) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (8)$$

Assume the following.

$$\forall X0. (l3_abcmiz_0 X0) \Rightarrow (l2_abcmiz_0 X0) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v4_abcmiz_0 X0) \wedge (l3_abcmiz_0 X0)))))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_abcmiz_0 X0)))) \Rightarrow (m1_subset_1 (k5_abcmiz_0 X0 X1 X2) (u1_struct_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((\neg v4_abcmiz_0 X0) \wedge (l3_abcmiz_0 X0)))))) \Rightarrow (m1_subset_1 (k11_abcmiz_0 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge ((v1_abcmiz_0 X0) \wedge \\ & ((\neg v4_abcmiz_0 X0) \wedge ((v9_abcmiz_0 X0) \wedge ((v14_abcmiz_0 X0) \wedge (l3_abcmiz_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (k12_abcmiz_0 X0 X1 = k2_rewrite1 (k11_abcmiz_0 X0) X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((\neg v4_abcmiz_0 X0) \wedge (l3_abcmiz_0 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \Rightarrow \\ & ((X1 = k11_abcmiz_0 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k1_domain_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0) X2 X3 \in X1) \Leftrightarrow (\exists X4.(m1_subset_1 \\ & X4 (u1_abcmiz_0 X0)) \wedge ((\neg X4 \in k2_abcmiz_0 X0 X3) \wedge ((r4_abcmiz_0 \\ & X0 X3 X4) \wedge (k5_abcmiz_0 X0 X3 X4 = X2)))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. k2_tarski X0 X1 = k2_tarski X1 X0 \quad (15)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge (v3_rewrite1 X0)) \Rightarrow ((v1_relat_1 X0) \wedge (v2_rewrite1 X0)) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. (v1_xboole_0 X0) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))) \Rightarrow (v1_xboole_0 X2)) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge ((v1_abcmiz_0 X0) \wedge \\ & ((\neg v4_abcmiz_0 X0) \wedge ((v9_abcmiz_0 X0) \wedge ((v14_abcmiz_0 X0) \wedge (l3_abcmiz_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_abcmiz_0 X0)) \Rightarrow ((r4_abcmiz_0 \\ & X0 X1 X2) \Rightarrow (k12_abcmiz_0 X0 (k5_abcmiz_0 X0 X1 X2) = k12_abcmiz_0 \\ & X0 X1))) \end{aligned}$$