

t27_afproj
(TMHCR1jwBCFzfwan7BBQAWASAkjCDYCuEzf)

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Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v1_diraf : \iota \Rightarrow o$ be given. Let $l1_analoaf : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_incsp_1 : \iota \Rightarrow \iota$ be given. Let $k13_afproj : \iota \Rightarrow \iota$ be given. Let $u2_incsp_1 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_afproj : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $r1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_afproj : \iota \Rightarrow \iota$ be given. Let $k5_afproj : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_aff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_zfmisc_1 : \iota \Rightarrow o$ be given. Let $g1_incsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_incsp_1 : \iota \Rightarrow o$ be given. Let $u3_incsp_1 : \iota \Rightarrow \iota$ be given. Let $k9_afproj : \iota \Rightarrow \iota$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $k3_afproj : \iota \Rightarrow \iota$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_afproj : \iota \Rightarrow \iota$ be given. Let $v1_incsp_1 : \iota \Rightarrow o$ be given. Let $k11_afproj : \iota \Rightarrow \iota$ be given. Let $k10_afproj : \iota \Rightarrow \iota$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $r1_aff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $v1_aff_4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow (r1_subset_1 (u1_struct_0 X0) (k7_afproj X0)) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow (\forall X1.(X1 \in k7_afproj X0) \Leftrightarrow (\exists X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((X1 = k5_afproj X0 X2) \wedge (v1_aff_1 X2 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow ((r1_subset_1 X0 X1) \Leftrightarrow (r1_xboole_0 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (k6_eqrel_1 X0 X1 X2 X3 = k9_relat_1 X2 X3) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.k2_xtuple_0 (k4_tarski X0 X1) = X1 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k1_xtuple_0 (k4_tarski X0 X1) = X0 \quad (12)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (\neg v1_subset_1 X1 X0) \quad (13)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \wedge (v1_xboole_0 X1) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\exists X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge ((\neg v1_xboole_0 X1) \wedge (v1_zfmisc_1 X1))) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (\forall X3. \\ & \forall X4. \forall X5. (g1_incsp_1 X0 X1 X2 = g1_incsp_1 X3 X4 X5) \Rightarrow \\ & ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_zfmisc_1 (u1_struct_0 X0)) \quad (17)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (18)$$

Assume the following.

$$\forall X0. (l1_incsp_1 X0) \Rightarrow (m1_subset_1 (u3_incsp_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_incsp_1 X0) (u2_incsp_1 X0)))) \quad (19)$$

Assume the following.

$$\forall X0. (l1_analoaf X0) \Rightarrow (l1_struct_0 X0) \quad (20)$$

Assume the following.

$$\forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow (\neg v1_xboole_0 (k9_afproj X0)) \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & ((v3_relat_2 (k3_afproj X0)) \wedge ((v8_relat_2 (k3_afproj X0)) \wedge \\ & (v1_partfun1 (k3_afproj X0) (k1_afproj X0)) \wedge (m1_subset_1 (k3_afproj X0) (k1_zfmisc_1 (k2_zfmisc_1 (k1_afproj X0) (k1_afproj X0)))))) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow ((v1_incsp_1 (k13_afproj X0)) \wedge (l1_incsp_1 (k13_afproj X0))) \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (m1_subset_1 (k11_afproj X0) (k1_zfmisc_1 (k2_zfmisc_1 (k9_afproj X0) (k10_afproj X0)))) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow (\neg v1_xboole_0 (k10_afproj X0)) \quad (25)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Leftrightarrow (k3_xboole_0 X0 X1 = k1_xboole_0) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (27)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (k5_afproj X0 X1 = k6_eqrel_1 (k1_afproj X0) (k1_afproj X0) (k3_afproj \\ & X0) X1)) \end{aligned} \quad (28)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X2 = k3_xboole_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \quad (29)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (k3_afproj X0 = ReplSep2 (toset (\lambda X1 : \iota. m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) (\lambda X1 : \iota. toset (\lambda X2 : \iota. m1_subset_1 \\ & X2 (k1_zfmisc_1 (u1_struct_0 X0)))) (\lambda X1 : \iota. \lambda X2 : \iota. \\ & (v1_aff_1 X1 X0) \wedge ((v1_aff_1 X2 X0) \wedge (r1_aff_4 X0 X1 X2)))) (\lambda X1 : \\ & \iota. \lambda X2 : \iota. k1_domain_1 (k1_zfmisc_1 (u1_struct_0 X0)) (\\ & k1_zfmisc_1 (u1_struct_0 X0) X1 X2)) \end{aligned} \quad (30)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1_incsp_1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_incsp_1 \\ & X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u2_incsp_1 X0)) \Rightarrow ((r1_incsp_1 \\ & X0 X1 X2) \Leftrightarrow (k1_domain_1 (u1_incsp_1 X0) (u2_incsp_1 X0) X1 X2 \in u3_incsp_1 \\ & X0)))) \end{aligned} \quad (31)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (k1_afproj X0 = ReplSep (toset (\lambda X1 : \iota. m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0)))) (\lambda X1 : \iota. v1_aff_1 X1 X0) (\lambda X1 : \iota. \\ & X1)) \end{aligned} \quad (32)$$

Assume the following.

$$\forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow (k13_afproj X0 = g1_incsp_1 (k9_afproj X0) (k10_afproj X0) (k11_afproj X0)) \quad (33)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k9_afproj X0) (k10_afproj X0)))) \Rightarrow ((X1 = k11_afproj X0) \Leftrightarrow (\forall X2.\forall X3. \\ & (k4_tarski X2 X3 \in X1) \Leftrightarrow (\neg(\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(v1_aff_1 X4 X0) \wedge ((X3 = k4_tarski X4 np_1) \wedge \\ & ((X2 \in u1_struct_0 X0) \wedge (X2 \in X4)) \vee (X2 = k5_afproj X0 X4)))))) \wedge (\forall X4. \\ & (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X5. \\ & (m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\neg(v1_aff_1 X4 X0) \wedge ((v1_aff_4 X5 X0) \wedge ((X2 = k5_afproj X0 X4) \wedge ((X3 = k4_tarski (k6_afproj X0 X5) np_2) \wedge (r1_aff_4 X0 X4 X5)))))))))) \end{aligned} \quad (34)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (35)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (36)$$

Assume the following.

$$\forall X0.(v1_zfmisc_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_zfmisc_1 X1)) \quad (37)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (38)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((\neg v7_struct_0 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (39)$$

Assume the following.

$$\forall X0.(l1_incsp_1 X0) \Rightarrow ((v1_incsp_1 X0) \Rightarrow (X0 = g1_incsp_1 (u1_incsp_1 X0) (u2_incsp_1 X0) (u3_incsp_1 X0))) \quad (40)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_incsp_1 (k13_afproj X0))) \Rightarrow (\forall X4.(m1_subset_1 X4 (u2_incsp_1 (k13_afproj X0)) \Rightarrow (\neg(X1 = X3) \wedge ((k4_tarski (k6_afproj X0 X2) np_2 = X4) \wedge (r1_incsp_1 (k13_afproj X0) X3 X4)))))))))) \end{aligned}$$