

t33_morph_01

(TMFtfZ4wAQ48KN8i98XwhtT3tKvXKpMtxbB)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ 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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $k3_morph_01 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_morph_01 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_morph_01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_morph_01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $k6_rusub_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 X0)))))))))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (\forall X3. ((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k1_morph_01 X0 (k1_morph_01 X0 X1 X2) X3 = k1_morph_01 X0 X1 (k2_morph_01 X0 X2 X3))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_rlvect_1 X0) \wedge (l2_algstr_0 X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (k6_rusub_4 X0 (k6_rusub_4 X0 X1 X2) X3 = k6_rusub_4 X0 X1 (k6_rusub_4 X0 X2 X3))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.k9_setfam_1 X0 = k1_zfmisc_1 X0 \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge (l2_algstr_0 X0))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k2_morph_01 \\ X0 X1 X2 = k6_rusub_4 X0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1_rlvect_1 X0) \Rightarrow (l2_algstr_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (l2_algstr_0 \\ X0)) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (m1_subset_1 \\ X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 (k6_rusub_4 \\ X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\ ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 \\ X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge \\ (l1_rlvect_1 X0)))))))))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0)))) \Rightarrow ((v1_funct_1 (k4_morph_01 X0 X1)) \wedge ((v1_funct_2 (k4_morph_01 \\ X0 X1) (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 \\ X0))) \wedge (m1_subset_1 (k4_morph_01 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\ (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge \\ ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 \\ X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge \\ (l1_rlvect_1 X0)))))))))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0)))) \Rightarrow ((v1_funct_1 (k3_morph_01 X0 X1)) \wedge ((v1_funct_2 (k3_morph_01 \\ X0 X1) (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 \\ X0))) \wedge (m1_subset_1 (k3_morph_01 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\ (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge (l2_algstr_0 X0))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 \\ (k2_morph_01 X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 \\ & X0) \wedge ((v2_rlvect_1 X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge \\ & ((v5_rlvect_1 X0) \wedge ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 \\ & X0) \wedge (l1_rlvect_1 X0)))))))))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 \\ & (u1_struct_0 X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (m1_subset_1 (k1_morph_01 X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k9_setfam_1 \\ & (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0))) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (k9_setfam_1 (u1_struct_0 X0)) (\\ & k9_setfam_1 (u1_struct_0 X0)))))) \Rightarrow ((X2 = k4_morph_01 X0 X1) \Leftrightarrow \\ & (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (k3_funct_2 (k1_zfmisc_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 \\ & X0)) X2 X3 = k1_morph_01 X0 X3 X1)))))) \end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k9_setfam_1 \\ & (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0))) \wedge (m1_subset_1 \\ & X2 (k1_zfmisc_1 (k2_zfmisc_1 (k9_setfam_1 (u1_struct_0 X0)) (\\ & k9_setfam_1 (u1_struct_0 X0)))))) \Rightarrow ((X2 = k3_morph_01 X0 X1) \Leftrightarrow \\ & (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow \\ & (k3_funct_2 (k1_zfmisc_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 \\ & X0)) X2 X3 = k2_morph_01 X0 X3 X1)))))) \end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge (l2_algstr_0 X0))) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (k2_morph_01 \\ & X0 X1 X2 = k2_morph_01 X0 X2 X1) \end{aligned} \tag{13}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 \\ & (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2.((\neg v1_xboole_0 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X3. \\ & ((\neg v1_xboole_0 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow ((k3_funct_2 (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 \\ & (u1_struct_0 X0)) (k3_morph_01 X0 X1) (k3_funct_2 (k1_zfmisc_1 \\ & (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0)) (k3_morph_01 \\ & X0 X2) X3) = k3_funct_2 (k1_zfmisc_1 (u1_struct_0 X0)) (k9_setfam_1 \\ & (u1_struct_0 X0)) (k3_morph_01 X0 (k3_funct_2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)) (k9_setfam_1 (u1_struct_0 X0)) (k3_morph_01 X0 X1) X2)) X3) \wedge \\ & (k3_funct_2 (k9_setfam_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 \\ & X0)) (k4_morph_01 X0 X1) (k3_funct_2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)) (k9_setfam_1 (u1_struct_0 X0)) (k4_morph_01 X0 X2) X3) = k3_funct_2 \\ & (k1_zfmisc_1 (u1_struct_0 X0)) (k9_setfam_1 (u1_struct_0 X0)) \\ & (k4_morph_01 X0 (k3_funct_2 (k1_zfmisc_1 (u1_struct_0 X0)) (k9_setfam_1 \\ & (u1_struct_0 X0)) (k3_morph_01 X0 X1) X2)) X3)))))) \end{aligned}$$