

t51_tops_2

(TMY7R8EDCZztZ633UrdG1JcWAfMq9ckU8nw)

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Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_tops_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(l1_struct_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
 & (l1_struct_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
 & X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (((k2_relset_1 \\
 & (u1_struct_0 X1) X2 = k2_struct_0 X1) \wedge (v2_funct_1 X2)) \Rightarrow ((k1_relset_1 \\
 & (u1_struct_0 X1) (k2_tops_2 (u1_struct_0 X0) (u1_struct_0 X1) \\
 & X2) = k2_struct_0 X1) \wedge (k2_relset_1 (u1_struct_0 X0) (k2_tops_2 \\
 & (u1_struct_0 X0) (u1_struct_0 X1) X2) = k2_struct_0 X0))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((v2_funct_1 X0) \Rightarrow (k2_funct_1 (k2_funct_1 X0) = X0)) \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2) \wedge \\
 & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
 & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
 & X3) \Leftrightarrow (X2 = X3))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_funct_1 X0))) \Rightarrow \\ ((v1_relat_1 (k2_funct_1 X0)) \wedge ((v1_funct_1 (k2_funct_1 X0)) \wedge \\ (v2_funct_1 (k2_funct_1 X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow \\ ((v1_funct_1 (k2_tops_2 X0 X1 X2)) \wedge ((v1_funct_2 (k2_tops_2 X0 \\ X1 X2) X1 X0) \wedge (m1_subset_1 (k2_tops_2 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 \\ X1 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow \\ ((v3_funct_2 X2 X0 X1) \Rightarrow (k2_tops_2 X0 X1 X2 = k2_funct_1 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (\\ (v2_funct_2 X1 X0) \Leftrightarrow (k2_relset_1 X0 X1 = X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (((v1_funct_1 X2) \wedge ((v2_funct_1 X2) \wedge (v2_funct_2 \\ X2 X1))) \Rightarrow ((v1_funct_1 X2) \wedge (v3_funct_2 X2 X0 X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} \forall X0. (l1_struct_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ (l1_struct_0 X1)) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (((k2_relset_1 \\ (u1_struct_0 X1) X2 = k2_struct_0 X1) \wedge (v2_funct_1 X2)) \Rightarrow (r2_funct_2 \\ (u1_struct_0 X0) (u1_struct_0 X1) (k2_tops_2 (u1_struct_0 X1) \\ (u1_struct_0 X0) (k2_tops_2 (u1_struct_0 X0) (u1_struct_0 X1) \\ X2)) X2)))))) \end{aligned}$$