

t35_taxonom1

(TMV81gFyd5aRDDPvoXSniML5RUte2gDS63L)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_metric_1 : \iota \Rightarrow o$ be given. Let $v8_metric_1 : \iota \Rightarrow o$ be given. Let $l1_metric_1 : \iota \Rightarrow o$ be given. Let $k4_taxonom1 : \iota \Rightarrow \iota$ be given. Let $k2_taxonom1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_metric_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_taxonom1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_taxonom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_numbers : \iota$ be given. Let $k1_partit1 : \iota \Rightarrow \iota$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $k13_lang1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_metric_1 X0)) \Rightarrow (\forall X1. \\ & (v1_xreal_0 X1) \Rightarrow (r2_relset_1 (u1_struct_0 X0) (u1_struct_0 X0) \\ & (k3_taxonom1 X0 X1) (k1_taxonom1 (u1_struct_0 X0) (u1_metric_1 \\ & X0) X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\ & (u1_struct_0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. (& l1_metric_1 X0) \Rightarrow ((v1_funct_1 (u1_metric_1 X0)) \wedge \\ & ((v1_funct_2 (u1_metric_1 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) k1_numbers) \wedge (m1_subset_1 (u1_metric_1 X0) (\\ & k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)) k1_numbers)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. (l1_metric_1 X0) \Rightarrow (l1_struct_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v8_metric_1 \\ X0) \wedge (l1_metric_1 X0)))) \Rightarrow (& m1_subset_1 (k4_taxonom1 X0) (k1_zfmisc_1 \\ & (k1_partit1 (u1_struct_0 X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (& (\neg v2_struct_0 X0) \wedge (l1_metric_1 X0)) \wedge \\ & (v1_xreal_0 X1) \Rightarrow (m1_subset_1 (k3_taxonom1 X0 X1) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (& (\neg v1_xboole_0 X0) \wedge ((v1_funct_1 \\ X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 \\ X0) k1_numbers)))) \wedge (v1_xreal_0 X2)) \Rightarrow (& m1_subset_1 (k1_taxonom1 \\ X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v8_metric_1 \\ X0) \wedge (l1_metric_1 X0)))) \Rightarrow (& (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 \\ (k1_partit1 (u1_struct_0 X0)))) \Rightarrow ((X1 = k4_taxonom1 X0) \Leftrightarrow (\forall X2. \\ (X2 \in X1) \Leftrightarrow (\exists X3. ((\neg v3_xxreal_0 X3) \wedge (v1_xreal_0 X3)) \wedge (\exists X4. \\ ((v1_partfun1 X4 (u1_struct_0 X0)) \wedge (v3_relat_2 X4) \wedge ((v8_relat_2 \\ X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ (u1_struct_0 X0)))))) \wedge ((r2_relset_1 (u1_struct_0 X0) (u1_struct_0 \\ X0) X4 (k13_lang1 (u1_struct_0 X0) (k3_taxonom1 X0 X3))) \wedge (k8_egrel_1 \\ (u1_struct_0 X0) X4 = X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\
& m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k1_partit1 X0))) \Rightarrow (\\
& (X2 = k2_taxonom1 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.((\neg v3_xreal_0 \\
& X4) \wedge (v1_xreal_0 X4)) \wedge (\exists X5.((v1_partfun1 X5 X0) \wedge ((v3_relat_2 \\
& X5) \wedge ((v8_relat_2 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0)))))) \wedge ((r2_rerset_1 X0 X0 X5 (k13_lang1 X0 (k1_taxonom1 X0 \\
& X1 X4))) \wedge (k8_eqrel_1 X0 X5 = X3))))))))) \\
& \tag{10}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v8_metric_1 \\
& X0) \wedge (l1_metric_1 X0)))) \Rightarrow (k4_taxonom1 X0 = k2_taxonom1 (u1_struct_0 \\
& X0) (u1_metric_1 X0))
\end{aligned}$$