

t34_taxonom1

(TMKY1pTbN38ELA21fGQapiFjAUujpvnWxqJ)

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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 $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $k1_taxonom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_metric_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v2_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))) \Rightarrow \\ & (\forall X2.(v1_xreal_0 X2) \Rightarrow (((r1_xxreal_0 k6_numbers X2) \wedge (\\ & (v2_metric_1 X1 X0) \wedge (v4_metric_1 X1 X0))) \Rightarrow ((v1_partfun1 (k1_taxonom1 \\ & X0 X1 X2) X0) \wedge ((v1_relat_2 (k1_taxonom1 X0 X1 X2)) \wedge ((v3_relat_2 \\ & (k1_taxonom1 X0 X1 X2)) \wedge (m1_subset_1 (k1_taxonom1 X0 X1 X2) (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_metric_1 X0) \Rightarrow & ((v1_funct_1 (u1_metric_1 X0)) \wedge \\ & ((v1_funct_2 (u1_metric_1 X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) k1_numbers) \wedge (m1_subset_1 (u1_metric_1 X0) (\\ & k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)) k1_numbers)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (l1_metric_1 X0) \Rightarrow (l1_struct_0 X0) \quad (6)$$

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.

$$\forall X0. (l1_metric_1 X0) \Rightarrow ((v8_metric_1 X0) \Leftrightarrow (v4_metric_1 (u1_metric_1 X0) (u1_struct_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0. (l1_metric_1 X0) \Rightarrow ((v6_metric_1 X0) \Leftrightarrow (v2_metric_1 (u1_metric_1 X0) (u1_struct_0 X0))) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v8_metric_1 \\ X0) \wedge (l1_metric_1 X0)))) \Rightarrow (\forall X1. (v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ X0)))) \Rightarrow (((r2_reset_1 (u1_struct_0 X0) (u1_struct_0 X0) X2 (k3_taxonom1 \\ X0 X1)) \wedge (r1_xreal_0 k6_numbers X1)) \Rightarrow ((v1_partfun1 X2 (u1_struct_0 \\ X0)) \wedge ((v1_relat_2 X2) \wedge ((v3_relat_2 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))))) \end{aligned}$$