

t23_cat_5 (TMWmdCY- hiW3j85nbU4enqDg2Kq5bdBMLWN5)

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Let $v2_struct.0 : \iota \Rightarrow o$ be given. Let $v11_struct.0 : \iota \Rightarrow o$ be given. Let $v2_cat.1 : \iota \Rightarrow o$ be given. Let $v3_cat.1 : \iota \Rightarrow o$ be given. Let $v4_cat.1 : \iota \Rightarrow o$ be given. Let $v5_cat.1 : \iota \Rightarrow o$ be given. Let $v6_cat.1 : \iota \Rightarrow o$ be given. Let $l1_cat.1 : \iota \Rightarrow o$ be given. Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $u4_struct.0 : \iota \Rightarrow \iota$ be given. Let $k9_cat.5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_graph.1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc.1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole.0 : \iota$ be given. Let $k8_relset.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ be given. Let $k6_domain.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k3_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct.0 : \iota \Rightarrow o$ be given. Let $l5_struct.0 : \iota \Rightarrow o$ be given. Let $l1_graph.1 : \iota \Rightarrow o$ be given. Let $u2_graph.1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct.1 X3) \wedge \\ & ((v1_funct.2 X3 X0 X1) \wedge (m1_subset.1 X3 (k1_zfmisc.1 (k2_zfmisc.1 \\ & X0 X1)))) \Rightarrow ((X1 \neq k1_xboole.0) \Rightarrow (\forall X4. (X4 \in k8_relset.1 X0 \\ & X1 X3 X2) \Leftrightarrow ((X4 \in X0) \wedge (k1_funct.1 X3 X4 \in X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset.1 X0 X1) \Rightarrow ((v1_xboole.0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole.0 X0) \wedge (m1_subset.1 X1 X0)) \Rightarrow (k6_domain.1 X0 X1 = k1_tarski X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole.0 X0) \wedge \\ & (((v1_funct.1 X2) \wedge ((v1_funct.2 X2 X0 X1) \wedge (m1_subset.1 X2 (k1_zfmisc.1 \\ & (k2_zfmisc.1 X0 X1)))))) \wedge (m1_subset.1 X3 X0)) \Rightarrow (k3_funct.2 X0 \\ & X1 X2 X3 = k1_funct.1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (6)$$

Assume the following.

$$\forall X0.((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u4_struct_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_graph_1 X0) \Rightarrow (& (v1_funct_1 (u2_graph_1 X0)) \wedge ((\\ & v1_funct_2 (u2_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (u2_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow (l5_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.(l1_cat_1 X0) \Rightarrow (l1_graph_1 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (k9_cat_5 X0 X1 = k8_relset_1 (u4_struct_0 X0) (u1_struct_0 \\ X0) (u2_graph_1 X0) (k6_domain_1 (u1_struct_0 X0) X1))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_graph_1 \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (k4_graph_1 \\ X0 X1 = k3_funct_2 (u4_struct_0 X0) (u1_struct_0 X0) (u2_graph_1 \\ X0) X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 \\ &X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 \\ &X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ &X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow ((X2 \in k9_cat_5 \\ &X0 X1) \Leftrightarrow (k4_graph_1 X0 X2 = X1)))) \end{aligned}$$