

t5_index_1

(TMWSjVx2J1brWikL8KxD6LkrRMAp4gPMvuM)

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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 $m3_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_graph_1 : \iota \Rightarrow \iota$ be given. Let $u2_graph_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_cat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_index_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_graph_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\begin{aligned}
 & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
 & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X1 X0) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (\forall X3.((v1_funct_1 \\
 & X3) \wedge ((v1_funct_2 X3 X1 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & X1 X0)))))) \Rightarrow (\forall X4.(m3_index_1 X4 X0 X1 X2 X3) \Rightarrow (\forall X5. \\
 & (m1_subset_1 X5 X1) \Rightarrow (m2_cat_1 (k1_funct_1 (k2_xtuple_0 X4) X5) \\
 & (k2_index_1 X0 (k1_xtuple_0 X4) (k3_funct_2 X1 X0 X2 X5)) (k2_index_1 \\
 & X0 (k1_xtuple_0 X4) (k3_funct_2 X1 X0 X3 X5)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u4_struct_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow ((v1_funct_1 (u2_graph_1 X0)) \wedge ((v1_funct_2 (u2_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge (m1_subset_1 (u2_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (4)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow ((v1_funct_1 (u1_graph_1 X0)) \wedge ((v1_funct_2 (u1_graph_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge (m1_subset_1 (u1_graph_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 X0) (u1_struct_0 X0)))))) \quad (5)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1_graph_1 X0) \Rightarrow (l5_struct_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l1_cat_1 X0) \Rightarrow (l1_graph_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_graph_1 X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (k4_graph_1 X0 X1 = k3_funct_2 (u4_struct_0 X0) (u1_struct_0 X0) (u2_graph_1 X0) X1)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_graph_1 X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (k3_graph_1 X0 X1 = k3_funct_2 (u4_struct_0 X0) (u1_struct_0 X0) (u1_graph_1 X0) X1)) \quad (10)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_cat_1 X0) \wedge ((v3_cat_1 X0) \wedge ((v4_cat_1 X0) \wedge ((v5_cat_1 X0) \wedge ((v6_cat_1 X0) \wedge (l1_cat_1 X0)))))))) \Rightarrow (\forall X1.(m3_index_1 X1 (u1_struct_0 X0) (u4_struct_0 X0) (u1_graph_1 X0) (u2_graph_1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (m2_cat_1 (k1_funct_1 (k2_xtuple_0 X1) X2) (k2_index_1 (u1_struct_0 X0) (k1_xtuple_0 X1) (k3_graph_1 X0 X2)) (k2_index_1 (u1_struct_0 X0) (k1_xtuple_0 X1) (k4_graph_1 X0 X2))))))$$