

l21_altcat_3

(TMQK4NLGQFvGPEXGULMZKZ7Lve1n8rFLFQt)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v5_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k5_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 \\ & \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \Rightarrow \\ & \quad (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow (k5_altcat_1 \\ & \quad \quad X0 X1 X2 X2 X3 (k8_altcat_1 X0 X2) = X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge \\ & (l2_altcat_1 X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 \\ & \quad (k8_altcat_1 X0 X1) (k1_altcat_1 X0 X1 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_altcat_1 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & \quad (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 \\ & \quad X1 X2)) \Rightarrow ((v5_altcat_3 X3 X0 X1 X2) \Leftrightarrow (\forall X4.(m1_subset_1 X4 \\ & \quad (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X2 X4 \neq k1_xboole_0) \Rightarrow (\forall X5. \\ & \quad (m1_subset_1 X5 (k1_altcat_1 X0 X2 X4)) \Rightarrow (\forall X6.(m1_subset_1 \\ & \quad X6 (k1_altcat_1 X0 X2 X4)) \Rightarrow ((k5_altcat_1 X0 X1 X2 X4 X3 X5 = k5_altcat_1 \\ & \quad \quad X0 X1 X2 X4 X3 X6) \Rightarrow (X5 = X6)))))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l2_altcat_1 X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 \\
& X1 X2)) \Rightarrow ((v4_altcat_3 X3 X0 X1 X2) \Leftrightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X4 X1 \neq k1_xboole_0) \Rightarrow (\forall X5. \\
& (m1_subset_1 X5 (k1_altcat_1 X0 X4 X1)) \Rightarrow (\forall X6.(m1_subset_1 \\
& X6 (k1_altcat_1 X0 X4 X1)) \Rightarrow ((k5_altcat_1 X0 X4 X1 X2 X5 X3 = k5_altcat_1 \\
& X0 X4 X1 X2 X6 X3) \Rightarrow (X5 = X6))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (k1_altcat_1 X0 X1 X1)) \Rightarrow ((X2 = k8_altcat_1 X0 X1) \Leftrightarrow \\
& (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 \\
& X0 X1 X3 \neq k1_xboole_0) \Rightarrow (\forall X4.(m1_subset_1 X4 (k1_altcat_1 \\
& X0 X1 X3)) \Rightarrow (k5_altcat_1 X0 X1 X1 X3 X2 X4 = X4))))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow ((v5_altcat_3 \\
& (k8_altcat_1 X0 X1) X0 X1 X1) \wedge (v4_altcat_3 (k8_altcat_1 X0 X1) X0 \\
& X1 X1)))
\end{aligned}$$