

t10_yellow18 (TM-
bQAanguFHsa7yGbDgkQaZX8XiDVYKBwCb7)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_altcat_1 : \iota \Rightarrow o$ be given. Let $v11_altcat_1 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $r2_yellow18 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge (l2_altcat_1 \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge (l2_altcat_1 \\
& X1))) \Rightarrow ((r2_yellow18 X0 X1) \Leftrightarrow ((u1_struct_0 X1 = u1_struct_0 X0) \wedge \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 X1)) \Rightarrow (\forall X6. \\
& (m1_subset_1 X6 (u1_struct_0 X1)) \Rightarrow (\forall X7.(m1_subset_1 X7 \\
& (u1_struct_0 X1)) \Rightarrow (((X5 = X2) \wedge ((X6 = X3) \wedge (X7 = X4))) \Rightarrow ((k1_altcat_1 \\
& X0 X2 X3 = k1_altcat_1 X1 X6 X5) \wedge (\neg(k1_altcat_1 X0 X2 X3 \neq k1_xboole_0)) \wedge \\
& ((k1_altcat_1 X0 X3 X4 \neq k1_xboole_0) \wedge (\exists X8.(m1_subset_1 \\
& X8 (k1_altcat_1 X0 X2 X3)) \wedge (\exists X9.(m1_subset_1 X9 (k1_altcat_1 \\
& X0 X3 X4)) \wedge (\exists X10.(m1_subset_1 X10 (k1_altcat_1 X1 X6 X5)) \wedge \\
& (\exists X11.(m1_subset_1 X11 (k1_altcat_1 X1 X7 X6)) \wedge ((X10 = X8) \wedge \\
& ((X11 = X9) \wedge (k5_altcat_1 X1 X7 X6 X5 X11 X10 \neq k5_altcat_1 X0 X2 X3 X4 \\
& X8 X9)))))))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \Rightarrow \\
& (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow (k5_altcat_1 \\
& X0 X1 X2 X2 X3 (k8_altcat_1 X0 X2) = X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(l2_altcat_1 X0))\wedge \\ & ((\neg v2_struct_0 X1)\wedge(l2_altcat_1 X1)))\Rightarrow((r2_yellow18 X0 X1)\Rightarrow \\ & (r2_yellow18 X1 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v12_altcat_1 X0)\wedge \\ & (l2_altcat_1 X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow(\neg v1_xboole_0 \\ & (k1_altcat_1 X0 X1 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v12_altcat_1 X0)\wedge \\ & (l2_altcat_1 X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow(m1_subset_1 \\ & (k8_altcat_1 X0 X1) (k1_altcat_1 X0 X1 X1)) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_altcat_1 X0)\wedge((v11_altcat_1 \\ & X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0)))))\Rightarrow(\forall X1.((\\ & \neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v11_altcat_1 X1)\wedge((v12_altcat_1 \\ & X1)\wedge(l2_altcat_1 X1))))))\Rightarrow((r2_yellow18 X0 X1)\Rightarrow(\forall X2.(\\ & m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X1))\Rightarrow((X2 = X3)\Rightarrow(k8_altcat_1 X0 X2 = k8_altcat_1 X1 \\ & X3)))))) \end{aligned}$$