

t12_yellow20 (TMK-
wXzRp2ehqrQKbZbLwFenHn6HA2jHTnQg)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_altcat_1 : \iota \Rightarrow o$ be given. Let $v9_altcat_1 : \iota \Rightarrow o$ be given. Let $v11_altcat_1 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $v2_yellow18 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $r1_yellow20 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v9_altcat_1 \\ & X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge \\ & (l2_altcat_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge \\ & ((k1_altcat_1 X0 X2 X3 \neq k1_xboole_0) \wedge (\neg \forall X4.(m1_subset_1 \\ & X4 (k1_altcat_1 X0 X1 X2)) \Rightarrow (\forall X5.(m1_subset_1 X5 (k1_altcat_1 \\ & X0 X2 X3)) \Rightarrow (k5_altcat_1 X0 X1 X2 X3 X4 X5 = k3_relat_1 X4 X5)))))))))) \\ & \hspace{15em} (1) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge (l2_altcat_1 \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge (l2_altcat_1 \\ & X1))) \Rightarrow ((r1_yellow20 X0 X1) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X2 X3 \neq k1_xboole_0) \wedge \\ & ((k1_altcat_1 X0 X3 X4 \neq k1_xboole_0) \wedge (\exists X5.(m1_subset_1 \\ & X5 (u1_struct_0 X1)) \wedge (\exists X6.(m1_subset_1 X6 (u1_struct_0 \\ & X1)) \wedge (\exists X7.(m1_subset_1 X7 (u1_struct_0 X1)) \wedge ((k1_altcat_1 \\ & X1 X5 X6 \neq k1_xboole_0) \wedge ((k1_altcat_1 X1 X6 X7 \neq k1_xboole_0) \wedge ((\\ & X5 = X2) \wedge (X6 = X3) \wedge (X7 = X4) \wedge (\exists X8.(m1_subset_1 X8 (k1_altcat_1 \\ & X0 X2 X3)) \wedge (\exists X9.(m1_subset_1 X9 (k1_altcat_1 X1 X5 X6)) \wedge \\ & ((X9 = X8) \wedge (\exists X10.(m1_subset_1 X10 (k1_altcat_1 X0 X3 X4)) \wedge \\ & (\exists X11.(m1_subset_1 X11 (k1_altcat_1 X1 X6 X7)) \wedge ((X11 = X10) \wedge \\ & (k5_altcat_1 X0 X2 X3 X4 X8 X10 \neq k5_altcat_1 X1 X5 X6 X7 X9 X11)))))))))))))) \\ & \hspace{15em} (2) \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v9_altcat_1 \\ & X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge \\ & (l2_altcat_1 X0)))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v9_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge \\ & ((v2_yellow18 X1) \wedge (l2_altcat_1 X1)))))) \Rightarrow (r1_yellow20 X0 X1)) \end{aligned}$$