

t36_yellow18 (TM-
SYZXLBf2qWeLmLwD6fUE5eQsMVShp5ETy)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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. Let $l1_altcat_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l2_altcat_1 X0) \Rightarrow (l1_altcat_1 X0) \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_altcat_1 X0) \Rightarrow ((v2_altcat_1 X0) \Leftrightarrow (\forall X1.(\\ & m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge ((k1_altcat_1 X0 X2 X3 \neq k1_xboole_0) \wedge \\ & (k1_altcat_1 X0 X1 X3 = k1_xboole_0))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l2_altcat_1 X0)) \Rightarrow ((v9_altcat_1 \\ & X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge ((k1_altcat_1 \\ & X0 X2 X3 \neq k1_xboole_0) \wedge ((k1_altcat_1 X0 X1 X3 \neq k1_xboole_0) \wedge (\exists X4. \\ & (m1_subset_1 X4 (k1_altcat_1 X0 X1 X2)) \wedge (\exists X5.(m1_subset_1 \\ & X5 (k1_altcat_1 X0 X2 X3)) \wedge (\exists X6.((v1_relat_1 X6) \wedge (v1_funct_1 \\ & X6)) \wedge (\exists X7.((v1_relat_1 X7) \wedge (v1_funct_1 X7)) \wedge ((X4 = X6) \wedge \\ & ((X5 = X7) \wedge (k5_altcat_1 X0 X1 X2 X3 X4 X5 \neq k3_relat_1 X6 X7))))))))))))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_altcat_1 \\ & X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge \\ & (l2_altcat_1 X0)))))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 \\ & X2 (u1_struct_0 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_altcat_1 \\ & X0 X1 X2)) \Rightarrow ((v1_relat_1 X3) \wedge (v1_funct_1 X3))) \end{aligned} \quad (4)$$

Theorem 1

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