

t39_yellow18

(TMQ7p84DdVTdVQ4yBXjgL2QwUkyr5zw2P6a)

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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 $v4_yellow18 : \iota \Rightarrow o$ 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 $v2_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $v9_altcat_1 : \iota \Rightarrow o$ be given. Let $v2_yellow18 : \iota \Rightarrow o$ 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 $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_yellow18 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $r1_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_yellow18 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
 & X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow \\
 & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\
 & X2 (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((k9_xtuple_0 X3 = k3_yellow18 \\
 & X0 X1) \wedge (r1_tarski (k10_xtuple_0 X3) (k3_yellow18 X0 X2)))))) \\
 & \tag{2}
 \end{aligned}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow ((\exists X1. (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \wedge (k3_relat_1 X0 X1 = k4_relat_1 (k9_xtuple_0 X0))) \Rightarrow (v2_funct_1 X0) \quad (3)$$

Assume the following.

$$\forall X0. k6_partfun1 X0 = k4_relat_1 X0 \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((v2_altcat_3 X3 X0 X1 X2) \Leftrightarrow (\exists X4. (m1_subset_1 X4 (k1_altcat_1 X0 X2 X1)) \wedge (r1_altcat_3 X0 X2 X1 X4 X3))))))) \quad (5) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow (\forall X4. (m1_subset_1 X4 (k1_altcat_1 X0 X2 X1)) \Rightarrow ((r1_altcat_3 X0 X1 X2 X3 X4) \Leftrightarrow (k5_altcat_1 X0 X2 X1 X2 X4 X3 = k8_altcat_1 X0 X2))))))) \quad (6) \end{aligned}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0))))) \Rightarrow ((v3_yellow18 X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k8_altcat_1 X0 X1 = k6_partfun1 (k3_yellow18 X0 X1)))) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (v2_yellow18 X0) \wedge (l2_altcat_1 X0))))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((v1_relat_1 X3) \wedge (v1_funct_1 X3))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0. (l2_altcat_1 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (v4_yellow18 X0))))) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v9_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (v2_yellow18 X0) \wedge (v3_yellow18 X0))))))) \quad (9) \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge ((v4_yellow18 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge ((\\ & k1_altcat_1 X0 X2 X1 \neq k1_xboole_0) \wedge (\exists X3.(m1_subset_1 X3 \\ & (k1_altcat_1 X0 X1 X2)) \wedge ((v2_altcat_3 X3 X0 X1 X2) \wedge (\neg v2_funct_1 \\ & X3)))))))) \end{aligned}$$