

t42_yellow18

(TMMQ6EeoHcGeX1Uhnx44KbtTjgzbuCwN8eR)

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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 $v3_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $k3_yellow18 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v9_altcat_1 : \iota \Rightarrow o$ be given. Let $v2_yellow18 : \iota \Rightarrow o$ be given. Let $k5_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $k8_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_yellow18 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.((\\ & v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (((v2_funct_1 X0) \wedge ((k10_xtuple_0 \\ & X0 = k9_xtuple_0 X1) \wedge (k3_relat_1 X0 X1 = k4_relat_1 (k9_xtuple_0 \\ & X0)))) \Rightarrow (X1 = k2_funct_1 X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge ((v4_yellow18 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge ((\\ & k1_altcat_1 X0 X2 X1 \neq k1_xboole_0) \wedge (\exists X3.(m1_subset_1 X3 \\ & (k1_altcat_1 X0 X1 X2)) \wedge ((v3_altcat_3 X3 X0 X1 X2) \wedge (\neg(v2_funct_1 \\ & X3) \wedge (k10_xtuple_0 X3 = k3_yellow18 X0 X2)))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v9_altcat_1 \\
& X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge \\
& (l2_altcat_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\neg(k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge \\
& ((k1_altcat_1 X0 X2 X3 \neq k1_xboole_0) \wedge (\neg \forall X4.(m1_subset_1 \\
& X4 (k1_altcat_1 X0 X1 X2)) \Rightarrow (\forall X5.(m1_subset_1 X5 (k1_altcat_1 \\
& X0 X2 X3)) \Rightarrow (k5_altcat_1 X0 X1 X2 X3 X4 X5 = k3_relat_1 X4 X5))))))))) \\
& \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow \\
& (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((k9_xtuple_0 X3 = k3_yellow18 \\
& X0 X1) \wedge (r1_tarski (k10_xtuple_0 X3) (k3_yellow18 X0 X2))))))))) \\
& \tag{4}
\end{aligned}$$

Assume the following.

$$\forall X0.k6_partfun1 X0 = k4_relat_1 X0 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge \\
& (l2_altcat_1 X0)))))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge ((m1_subset_1 \\
& X2 (u1_struct_0 X0)) \wedge (m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)))))) \Rightarrow \\
& (m1_subset_1 (k1_altcat_3 X0 X1 X2 X3) (k1_altcat_1 X0 X2 X1)) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((v3_altcat_3 \\
& X3 X0 X1 X2) \Leftrightarrow ((k5_altcat_1 X0 X2 X1 X2 (k1_altcat_3 X0 X1 X2 X3) X3 = \\
& k8_altcat_1 X0 X2) \wedge (k5_altcat_1 X0 X1 X2 X1 X3 (k1_altcat_3 X0 X1 \\
& X2 X3) = k8_altcat_1 X0 X1)))))) \\
& \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow ((v3_yellow18 \\
& X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k8_altcat_1 \\
& X0 X1 = k6_partfun1 (k3_yellow18 X0 X1)))) \\
& \tag{8}
\end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_altcat_1 \\ & X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge \\ & (l2_altcat_1 X0)))))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 \\ & X2 (u1_struct_0 X0))) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_altcat_1 \\ & X0 X1 X2)) \Rightarrow ((v1_relat_1 X3) \wedge (v1_funct_1 X3))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l2_altcat_1 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v2_altcat_1 \\ & X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (v4_yellow18 X0)))) \Rightarrow \\ & ((\neg v2_struct_0 X0) \wedge (v2_altcat_1 X0) \wedge (v9_altcat_1 X0) \wedge ((v11_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge ((v2_yellow18 X0) \wedge (v3_yellow18 X0)))))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge (v2_altcat_1 X0) \wedge ((v11_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge ((v4_yellow18 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\neg (k1_altcat_1 X0 X1 X2 \neq k1_xboole_0) \wedge ((\\ & k1_altcat_1 X0 X2 X1 \neq k1_xboole_0) \wedge (\exists X3. (m1_subset_1 X3 \\ & (k1_altcat_1 X0 X1 X2)) \wedge ((v3_altcat_3 X3 X0 X1 X2) \wedge (k1_altcat_3 \\ & X0 X1 X2 X3 \neq k2_funct_1 X3)))))) \end{aligned}$$