

t16_functor3 (TMLbpRYS- FXnu8VKFYGfiprhCRCinoYJC2p5)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_altcat_1 : \iota \Rightarrow o$ be given. Let $v12_altcat_1 : \iota \Rightarrow o$ be given. Let $l2_altcat_1 : \iota \Rightarrow o$ be given. Let $v15_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_altcat_2 : \iota \Rightarrow o$ be given. Let $v6_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v8_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l1_altcat_1 : \iota \Rightarrow o$ be given. Let $l1_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v9_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v12_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\
 & \quad (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0))) \Rightarrow (\forall X2. ((v1_relat_1 \\
 & X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))) \Rightarrow \\
 & ((\forall X3. (X3 \in X0) \Rightarrow (k1_funct_1 X1 X3 = k1_funct_1 X2 X3)) \Rightarrow (X1 = \\
 & \quad X2)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_altcat_1 X0)) \Rightarrow (\forall X1. \\
 & ((\neg v2_struct_0 X1) \wedge ((v1_altcat_2 X1) \wedge (l2_altcat_1 X1))) \Rightarrow (\forall X2. \\
 & ((\neg v2_struct_0 X2) \wedge ((v1_altcat_2 X2) \wedge (l2_altcat_1 X2)))) \Rightarrow (\forall X3. \\
 & ((v6_functor0 X3 X0 X1) \wedge ((v8_functor0 X3 X0 X1) \wedge (l2_functor0 X3 \\
 & \quad X0 X1))) \Rightarrow (\forall X4. (l2_functor0 X4 X1 X2) \Rightarrow (\forall X5. (m1_subset_1 \\
 & X5 (u1_struct_0 X0) \Rightarrow (k3_functor0 X0 X2 (k13_functor0 X0 X1 X2 X3 \\
 & \quad X4) X5 = k3_functor0 X1 X2 X4 (k3_functor0 X0 X1 X3 X5))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((\neg \\ & v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\ & X2)))) \Rightarrow (\forall X3.((v15_functor0 X3 X2 X0) \wedge (m2_functor0 X3 X2 \\ & X0)) \Rightarrow (\forall X4.((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \Rightarrow \\ & (\forall X5.((v15_functor0 X5 X0 X1) \wedge (m2_functor0 X5 X0 X1)) \Rightarrow (\\ & \forall X6.(m1_functor2 X6 X0 X1 X4 X5) \Rightarrow (\forall X7.(m1_subset_1 \\ & X7 (u1_struct_0 X2)) \Rightarrow ((r1_functor2 X0 X1 X4 X5) \Rightarrow (k2_functor2 X2 \\ & X1 (k1_functor3 X2 X0 X1 X3 X4) (k1_functor3 X2 X0 X1 X3 X5) (k6_functor3 \\ & X2 X0 X1 X4 X5 X3 X6) X7 = k2_functor2 X0 X1 X4 X5 X6 (k3_functor0 X2 X0 \\ & X3 X7)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((\neg \\ & v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\ & X2)))) \Rightarrow (\forall X3.((v15_functor0 X3 X2 X1) \wedge (m2_functor0 X3 X2 \\ & X1)) \Rightarrow (\forall X4.((v15_functor0 X4 X2 X1) \wedge (m2_functor0 X4 X2 X1)) \Rightarrow \\ & (\forall X5.((v15_functor0 X5 X1 X0) \wedge (m2_functor0 X5 X1 X0)) \Rightarrow (\\ & \forall X6.(m1_functor2 X6 X2 X1 X3 X4) \Rightarrow (\forall X7.(m1_subset_1 \\ & X7 (u1_struct_0 X2)) \Rightarrow ((r1_functor2 X2 X1 X3 X4) \Rightarrow (k2_functor2 X2 \\ & X0 (k1_functor3 X2 X1 X0 X3 X5) (k1_functor3 X2 X1 X0 X4 X5) (k5_functor3 \\ & X2 X1 X0 X3 X4 X6 X5) X7 = k6_functor0 X1 X0 X5 (k3_functor0 X2 X1 X3 X7) \\ & (k3_functor0 X2 X1 X4 X7) (k2_functor2 X2 X1 X3 X4 X6 X7)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((\neg \\ & v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\ & X2)))) \Rightarrow (\forall X3.((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 \\ & X1)) \Rightarrow (\forall X4.((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \Rightarrow \\ & (\forall X5.((v15_functor0 X5 X1 X2) \wedge (m2_functor0 X5 X1 X2)) \Rightarrow (\\ & \forall X6.((v15_functor0 X6 X1 X2) \wedge (m2_functor0 X6 X1 X2)) \Rightarrow ((\\ & (r1_functor2 X0 X1 X3 X4) \wedge (r1_functor2 X1 X2 X5 X6)) \Rightarrow (r1_functor2 \\ & X0 X2 (k1_functor3 X0 X1 X2 X3 X5) (k1_functor3 X0 X1 X2 X4 X6)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((v2_altcat_1 X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v12_altcat_1 X1)\wedge \\ & l2_altcat_1 X1))))\wedge((m2_functor0 X2 X0 X1)\wedge(m2_functor0 X3 X0 \\ & X1))))\Rightarrow(r1_functor2 X0 X1 X2 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge(((v1_relat_1 \\ & X1)\wedge((v4_relat_1 X1 X0)\wedge((v1_funct_1 X1)\wedge(v1_partfun1 X1 X0))))\wedge \\ & ((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 \\ & X2 X0))))))\Rightarrow((r8_pboole X0 X1 X2)\Leftrightarrow(X1 = X2)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2_struct_0 \\ & X0)\wedge((v2_altcat_1 X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v12_altcat_1 X1)\wedge \\ & l2_altcat_1 X1))))\wedge(((\neg v2_struct_0 X2)\wedge((v12_altcat_1 X2)\wedge \\ & l2_altcat_1 X2))))\wedge(((v15_functor0 X3 X0 X1)\wedge(m2_functor0 X3 \\ & X0 X1))\wedge((v15_functor0 X4 X1 X2)\wedge(m2_functor0 X4 X1 X2))))\Rightarrow(\\ & k1_functor3 X0 X1 X2 X3 X4 = k13_functor0 X0 X1 X2 X3 X4) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v2_altcat_1 X0)\wedge \\ & ((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge((\neg v2_struct_0 X1)\wedge \\ & ((v12_altcat_1 X1)\wedge(l2_altcat_1 X1))))\Rightarrow(\forall X2.(m2_functor0 \\ & X2 X0 X1)\Rightarrow(l2_functor0 X2 X0 X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0)\wedge((v2_altcat_1 X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v12_altcat_1 X1)\wedge \\ & l2_altcat_1 X1))))\wedge((m2_functor0 X2 X0 X1)\wedge(m2_functor0 X3 X0 \\ & X1))))\Rightarrow(\forall X4.(m1_functor2 X4 X0 X1 X2 X3)\Rightarrow((v1_relat_1 X4)\wedge \\ & ((v4_relat_1 X4 (u1_struct_0 X0))\wedge((v1_funct_1 X4)\wedge(v1_partfun1 \\ & X4 (u1_struct_0 X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((l1_altcat_1 X0)\wedge(l1_altcat_1 X1))\Rightarrow(\forall X2.(l2_functor0 X2 X0 X1)\Rightarrow(l1_functor0 X2 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.(l2_altcat_1 X0)\Rightarrow(l1_altcat_1 X0) \quad (14)$$

Assume the following.

$$\forall X0.(l1_altcat_1 X0)\Rightarrow(l1_struct_0 X0) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.(((\neg v2_struct_0 X0)\wedge((v2_altcat_1 X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge(((\neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v12_altcat_1 X1)\wedge(l2_altcat_1 X1))))\wedge(((\neg v2_struct_0 X2)\wedge((v2_altcat_1 X2)\wedge((v12_altcat_1 X2)\wedge(l2_altcat_1 X2))))\wedge \\ & ((v15_functor0 X3 X1 X2)\wedge(m2_functor0 X3 X1 X2))\wedge(((v15_functor0 X4 X1 X2)\wedge(m2_functor0 X4 X1 X2))\wedge(((v15_functor0 X5 X0 X1)\wedge(m2_functor0 X5 X0 X1))\wedge(m1_functor2 X6 X1 X2 X3 X4))))))\Rightarrow(m1_functor2 (k6_functor3 X0 X1 X2 X3 X4 X5 X6) X0 X2 (k1_functor3 X0 X1 X2 X5 X3) (k1_functor3 X0 X1 X2 X5 X4)) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & \forall X6.(((\neg v2_struct_0 X0)\wedge((v2_altcat_1 X0)\wedge((v12_altcat_1 X0)\wedge(l2_altcat_1 X0))))\wedge(((\neg v2_struct_0 X1)\wedge((v2_altcat_1 X1)\wedge((v12_altcat_1 X1)\wedge(l2_altcat_1 X1))))\wedge(((\neg v2_struct_0 X2)\wedge((v2_altcat_1 X2)\wedge((v12_altcat_1 X2)\wedge(l2_altcat_1 X2))))\wedge \\ & (((v15_functor0 X3 X0 X1)\wedge(m2_functor0 X3 X0 X1))\wedge(((v15_functor0 X4 X0 X1)\wedge(m2_functor0 X4 X0 X1))\wedge((m1_functor2 X5 X0 X1 X3 X4)\wedge((v15_functor0 X6 X1 X2)\wedge(m2_functor0 X6 X1 X2))))))\Rightarrow(m1_functor2 (k5_functor3 X0 X1 X2 X3 X4 X5 X6) X0 X2 (k1_functor3 X0 X1 X2 X3 X6) (k1_functor3 X0 X1 X2 X4 X6)) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 X0)\wedge(l1_altcat_1 X0))\wedge(((\neg v2_struct_0 X1)\wedge(l1_altcat_1 X1))\wedge((l1_functor0 X2 X0 X1)\wedge(m1_subset_1 X3 (u1_struct_0 X0))))))\Rightarrow(m1_subset_1 (k3_functor0 X0 X1 X2 X3) (u1_struct_0 X1)) \quad (18)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (\\
& l2_altcat_1 X1)))) \wedge (((\neg v2_struct_0 X2) \wedge ((v12_altcat_1 X2) \wedge \\
& (l2_altcat_1 X2)))) \wedge (((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 \\
& X0 X1)) \wedge ((v15_functor0 X4 X1 X2) \wedge (m2_functor0 X4 X1 X2)))))) \Rightarrow (\\
& (v9_functor0 (k1_functor3 X0 X1 X2 X3 X4) X0 X2) \wedge ((v15_functor0 \\
& (k1_functor3 X0 X1 X2 X3 X4) X0 X2) \wedge (m2_functor0 (k1_functor3 X0 \\
& X1 X2 X3 X4) X0 X2)))
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. ((\neg \\
& v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\
& X2)))) \Rightarrow (\forall X3. ((v15_functor0 X3 X1 X2) \wedge (m2_functor0 X3 X1 \\
& X2)) \Rightarrow (\forall X4. ((v15_functor0 X4 X1 X2) \wedge (m2_functor0 X4 X1 X2)) \Rightarrow \\
& (\forall X5. ((v15_functor0 X5 X0 X1) \wedge (m2_functor0 X5 X0 X1)) \Rightarrow (\\
& \forall X6. (m1_functor2 X6 X1 X2 X3 X4) \Rightarrow ((r1_functor2 X1 X2 X3 X4) \Rightarrow \\
& (\forall X7. (m1_functor2 X7 X0 X2 (k1_functor3 X0 X1 X2 X5 X3) (k1_functor3 \\
& X0 X1 X2 X5 X4)) \Rightarrow ((X7 = k6_functor3 X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow (\forall X8. \\
& (m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (k1_funct_1 X7 X8 = k2_functor2 \\
& X1 X2 X3 X4 X6 (k3_functor0 X0 X1 X5 X8))))))))))
\end{aligned} \tag{20}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. ((\neg \\
& v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\
& X2)))) \Rightarrow (\forall X3. ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 \\
& X1)) \Rightarrow (\forall X4. ((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \Rightarrow \\
& (\forall X5. (m1_functor2 X5 X0 X1 X3 X4) \Rightarrow (\forall X6. ((v15_functor0 \\
& X6 X1 X2) \wedge (m2_functor0 X6 X1 X2)) \Rightarrow ((r1_functor2 X0 X1 X3 X4) \Rightarrow (\forall X7. \\
& (m1_functor2 X7 X0 X2 (k1_functor3 X0 X1 X2 X3 X6) (k1_functor3 X0 \\
& X1 X2 X4 X6)) \Rightarrow ((X7 = k5_functor3 X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow (\forall X8. (\\
& m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (k1_funct_1 X7 X8 = k6_functor0 \\
& X1 X2 X6 (k3_functor0 X0 X1 X3 X8) (k3_functor0 X0 X1 X4 X8) (k2_functor2 \\
& X0 X1 X3 X4 X5 X8))))))))))
\end{aligned} \tag{21}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge \\ & ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge ((\neg v2_struct_0 X1) \wedge \\ & ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. (m2_functor0 \\ & X2 X0 X1) \Rightarrow ((v15_functor0 X2 X0 X1) \Rightarrow (v6_functor0 X2 X0 X1))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. (l2_altcat_1 X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v12_altcat_1 \\ & X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v1_altcat_2 X0))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge \\ & ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge ((\neg v2_struct_0 X1) \wedge \\ & ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. (m2_functor0 \\ & X2 X0 X1) \Rightarrow ((v8_functor0 X2 X0 X1) \wedge (v12_functor0 X2 X0 X1))) \end{aligned} \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. ((\neg \\ & v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\ & X2)))) \Rightarrow (\forall X3. ((\neg v2_struct_0 X3) \wedge ((v2_altcat_1 X3) \wedge ((\\ & v12_altcat_1 X3) \wedge (l2_altcat_1 X3)))) \Rightarrow (\forall X4. ((v15_functor0 \\ & X4 X0 X2) \wedge (m2_functor0 X4 X0 X2)) \Rightarrow (\forall X5. ((v15_functor0 X5 \\ & X2 X3) \wedge (m2_functor0 X5 X2 X3)) \Rightarrow (\forall X6. ((v15_functor0 X6 X2 \\ & X3) \wedge (m2_functor0 X6 X2 X3)) \Rightarrow (\forall X7. ((v15_functor0 X7 X3 X1) \wedge \\ & (m2_functor0 X7 X3 X1)) \Rightarrow (\forall X8. (m1_functor2 X8 X2 X3 X5 X6) \Rightarrow \\ & ((r1_functor2 X2 X3 X5 X6) \Rightarrow (r8_pboole (u1_struct_0 X0) (k6_functor3 \\ & X0 X2 X1 (k1_functor3 X2 X3 X1 X5 X7) (k1_functor3 X2 X3 X1 X6 X7) X4 (\\ & k5_functor3 X2 X3 X1 X5 X6 X8 X7) (k5_functor3 X0 X3 X1 (k1_functor3 \\ & X0 X2 X3 X4 X5) (k1_functor3 X0 X2 X3 X4 X6) (k6_functor3 X0 X2 X3 X5 X6 \\ & X4 X8) X7)))))))))) \end{aligned}$$