

t39_functor3

(TMSHUApX3xYgRRi1YkGneXD6DgQ9zKFRdcZ)

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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 $l2_altcat_1 : \iota \Rightarrow o$ 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 $m1_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $l1_struct_0 : \iota \Rightarrow o$ be given. Let $m2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_altcat_1 : \iota \Rightarrow o$ be given. Let $l1_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_altcat_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.(m2_functor0 \\ & X2 X0 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (k2_functor2 \\ & X0 X1 X2 X2 (k1_functor2 X0 X1 X2) X3 = k8_altcat_1 X1 (k3_functor0 \\ & X0 X1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.(m2_functor0 \\
& X2 X0 X1) \Rightarrow (\forall X3.(m2_functor0 X3 X0 X1) \Rightarrow ((r1_functor2 X0 X1 \\
& X2 X3) \Rightarrow (\forall X4.(m1_functor2 X4 X0 X1 X2 X3) \Rightarrow (\forall X5.(m1_functor2 \\
& X5 X0 X1 X2 X3) \Rightarrow ((\forall X6.(m1_subset_1 X6 (u1_struct_0 X0)) \Rightarrow \\
& (k2_functor2 X0 X1 X2 X3 X4 X6 = k2_functor2 X0 X1 X2 X3 X5 X6)) \Rightarrow (r8_pboole \\
& (u1_struct_0 X0) X4 X5)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg \\
& v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 \\
& X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((v15_functor0 X2 X1 X0) \wedge \\
& (m2_functor0 X2 X1 X0)) \Rightarrow (\forall X3.((v15_functor0 X3 X1 X0) \wedge (\\
& m2_functor0 X3 X1 X0)) \Rightarrow (\forall X4.(m1_functor3 X4 X1 X0 X2 X3) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 (u1_struct_0 X1)) \Rightarrow ((r1_functor3 \\
& X1 X0 X2 X3) \Rightarrow (k2_functor2 X1 X0 X3 X2 (k8_functor3 X1 X0 X2 X3 X4) X5 = \\
& k1_altcat_3 X0 (k3_functor0 X1 X0 X2 X5) (k3_functor0 X1 X0 X3 X5) \\
& (k2_functor2 X1 X0 X2 X3 X4 X5)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge \\
& (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge \\
& ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge \\
& (((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1)) \wedge ((v15_functor0 \\
& X3 X0 X1) \wedge (m2_functor0 X3 X0 X1)))) \Rightarrow ((r1_functor3 X0 X1 X2 X3) \Rightarrow \\
& (r1_functor3 X0 X1 X3 X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge \\
& l2_altcat_1 X1)))) \wedge ((m2_functor0 X2 X0 X1) \wedge (m2_functor0 X3 X0 \\
& X1))) \Rightarrow (r1_functor2 X0 X1 X2 X2)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (((v1_relat_1 \\
& X1) \wedge ((v4_relat_1 X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge \\
& ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 \\
& X2 X0)))))) \Rightarrow ((r8_pboole X0 X1 X2) \Leftrightarrow (X1 = X2))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 \\ & X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge \\ & ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1))) \Rightarrow (k4_functor2 \\ & X0 X1 X2 = k1_functor2 X0 X1 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\ & (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (\\ & l2_altcat_1 X1)))) \wedge ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 \\ & X0 X1)) \wedge ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1))) \Rightarrow (\forall X4. \\ & (m2_functor2 X4 X0 X1 X2 X3) \Rightarrow (m1_functor2 X4 X0 X1 X2 X3)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge \\ & ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge ((\neg v2_struct_0 X1) \wedge \\ & ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. (m2_functor0 \\ & X2 X0 X1) \Rightarrow (l2_functor0 X2 X0 X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge \\ & (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge \\ & ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge \\ & ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1)) \wedge ((v15_functor0 \\ & X3 X0 X1) \wedge (m2_functor0 X3 X0 X1))) \Rightarrow (\forall X4. (m1_functor3 \\ & X4 X0 X1 X2 X3) \Rightarrow (m2_functor2 X4 X0 X1 X2 X3)) \end{aligned} \quad (11)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_altcat_1 X0) \wedge (l1_altcat_1 X1)) \Rightarrow (\\ & \forall X2. (l2_functor0 X2 X0 X1) \Rightarrow (l1_functor0 X2 X0 X1)) \end{aligned} \quad (13)$$

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.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\ & X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge \\ & (l2_altcat_1 X0)))))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge \\ & ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))))) \wedge \\ & (((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1)) \wedge ((v15_functor0 \\ & X3 X0 X1) \wedge (m2_functor0 X3 X0 X1)) \wedge (m1_functor3 X4 X0 X1 X2 X3))) \Rightarrow \\ & (m1_functor3 (k8_functor3 X0 X1 X2 X3 X4) X0 X1 X3 X2) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\ & X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))))) \wedge (((\neg v2_struct_0 \\ & X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge \\ & (l2_altcat_1 X1)))))) \wedge (((v15_functor0 X2 X0 X1) \wedge (m2_functor0 \\ & X2 X0 X1)) \wedge ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1)) \wedge ((\\ & (v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \wedge ((m2_functor2 \\ & X5 X0 X1 X2 X3) \wedge (m2_functor2 X6 X0 X1 X3 X4)))))) \Rightarrow (m2_functor2 (\\ & k5_functor2 X0 X1 X2 X3 X4 X5 X6) X0 X1 X2 X4) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\ & X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\ & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))))) \wedge ((m2_functor0 X2 \\ & X0 X1) \wedge ((m2_functor0 X3 X0 X1) \wedge ((m2_functor0 X4 X0 X1) \wedge ((m1_functor2 \\ & X5 X0 X1 X2 X3) \wedge (m1_functor2 X6 X0 X1 X3 X4)))))) \Rightarrow (m1_functor2 (\\ & k3_functor2 X0 X1 X2 X3 X4 X5 X6) X0 X1 X2 X4) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\ & X0) \wedge (l1_altcat_1 X0)) \wedge (((\neg v2_struct_0 X1) \wedge (l1_altcat_1 X1)) \wedge \\ & ((l1_functor0 X2 X0 X1) \wedge (m1_subset_1 X3 (u1_struct_0 X0)))))) \Rightarrow \\ & (m1_subset_1 (k3_functor0 X0 X1 X2 X3) (u1_struct_0 X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge (v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge ((m2_functor0 X2 X0 X1) \wedge ((m2_functor0 X3 X0 X1) \wedge ((m1_functor2 X4 X0 X1 X2 X3) \wedge (m1_subset_1 X5 (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 (k2_functor2 X0 X1 X2 X3 X4 X5) (k1_altcat_1 X1 (k3_functor0 X0 X1 X2 X5) (k3_functor0 X0 X1 X3 X5)))
\end{aligned} \tag{20}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge (m2_functor0 X2 X0 X1))) \Rightarrow (m1_functor2 (k1_functor2 X0 X1 X2) X0 X1 X2 X2)
\end{aligned} \tag{21}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))))) \Rightarrow (\forall X2. ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1))) \Rightarrow (\forall X3. ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1))) \Rightarrow (\forall X4. ((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1))) \Rightarrow (((r2_functor2 X0 X1 X2 X3) \wedge (r2_functor2 X0 X1 X3 X4)) \Rightarrow (\forall X5. (m2_functor2 X5 X0 X1 X2 X3) \Rightarrow (\forall X6. (m2_functor2 X6 X0 X1 X3 X4) \Rightarrow (\forall X7. (m2_functor2 X7 X0 X1 X2 X4) \Rightarrow ((X7 = k5_functor2 X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow (r8_pboole (u1_struct_0 X0) X7 (k3_functor2 X0 X1 X2 X3 X4 X5 X6))))))))))
\end{aligned} \tag{22}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))))) \Rightarrow (\forall X2. ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1))) \Rightarrow (\forall X3. ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1))) \Rightarrow ((r1_functor3 X0 X1 X2 X3) \Rightarrow (\forall X4. (m2_functor2 X4 X0 X1 X2 X3) \Rightarrow ((m1_functor3 X4 X0 X1 X2 X3) \Leftrightarrow (\forall X5. (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (v3_altcat_3 (k2_functor2 X0 X1 X2 X3 X4 X5) X1 (k3_functor0 X0 X1 X2 X5) (k3_functor0 X0 X1 X3 X5))))))))))
\end{aligned} \tag{23}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.(m2_functor0 \\
& X2 X0 X1) \Rightarrow (\forall X3.(m2_functor0 X3 X0 X1) \Rightarrow (\forall X4.(m2_functor0 \\
& X4 X0 X1) \Rightarrow (((r1_functor2 X0 X1 X2 X3) \wedge (r1_functor2 X0 X1 X3 X4)) \Rightarrow \\
& (\forall X5.(m1_functor2 X5 X0 X1 X2 X3) \Rightarrow (\forall X6.(m1_functor2 \\
& X6 X0 X1 X3 X4) \Rightarrow (\forall X7.(m1_functor2 X7 X0 X1 X2 X4) \Rightarrow ((X7 = k3_functor2 \\
& X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow \\
& (k2_functor2 X0 X1 X2 X4 X7 X8 = k5_altcat_1 X1 (k3_functor0 X0 X1 X2 \\
& X8) (k3_functor0 X0 X1 X3 X8) (k3_functor0 X0 X1 X4 X8) (k2_functor2 \\
& X0 X1 X2 X3 X5 X8) (k2_functor2 X0 X1 X3 X4 X6 X8))))))))))))) \\
& \hspace{15em} (24)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (k1_altcat_1 X0 X1 X2)) \Rightarrow ((v3_altcat_3 \\
& X3 X0 X1 X2) \Leftrightarrow ((k5_altcat_1 X0 X2 X1 X2 (k1_altcat_3 X0 X1 X2 X3) X3 = \\
& k8_altcat_1 X0 X2) \wedge (k5_altcat_1 X0 X1 X2 X1 X3 (k1_altcat_3 X0 X1 \\
& X2 X3) = k8_altcat_1 X0 X1))))))))) \\
& \hspace{15em} (25)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\\
& \neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 \\
& X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((v15_functor0 X2 X0 X1) \wedge \\
& (m2_functor0 X2 X0 X1) \Rightarrow (\forall X3.((v15_functor0 X3 X0 X1) \wedge (\\
& m2_functor0 X3 X0 X1) \Rightarrow ((r1_functor3 X0 X1 X2 X3) \Leftrightarrow ((r2_functor2 \\
& X0 X1 X2 X3) \wedge ((r1_functor2 X0 X1 X3 X2) \wedge (\exists X4.(m2_functor2 \\
& X4 X0 X1 X2 X3) \wedge (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\\
& v3_altcat_3 (k2_functor2 X0 X1 X2 X3 X4 X5) X1 (k3_functor0 X0 X1 X2 \\
& X5) (k3_functor0 X0 X1 X3 X5))))))))))))) \\
& \hspace{15em} (26)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v11_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\\
& \neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v11_altcat_1 X1) \wedge ((v12_altcat_1 \\
& X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((v15_functor0 X2 X0 X1) \wedge \\
& (m2_functor0 X2 X0 X1) \Rightarrow (\forall X3.((v15_functor0 X3 X0 X1) \wedge (\\
& m2_functor0 X3 X0 X1) \Rightarrow (\forall X4.(m1_functor3 X4 X0 X1 X2 X3) \Rightarrow \\
& ((r1_functor3 X0 X1 X2 X3) \Rightarrow (r8_pboole (u1_struct_0 X0) (k5_functor2 \\
& X0 X1 X3 X2 X3 (k8_functor3 X0 X1 X2 X3 X4) X4) (k4_functor2 X0 X1 X3)))))))))))))
\end{aligned}$$