

t11_functor3

(TMTB4edUjoEDHyCkJu9uGBgqJXWiDXFfK6M)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v9_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
 & X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
 & X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((\neg \\
 & v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\
 & X2)))) \Rightarrow (\forall X3.((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 \\
 & X1)) \Rightarrow (\forall X4.((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \Rightarrow (\\
 & (\forall X5.((v15_functor0 X5 X1 X2) \wedge (m2_functor0 X5 X1 X2)) \Rightarrow (\\
 & \forall X6.((v15_functor0 X6 X1 X2) \wedge (m2_functor0 X6 X1 X2)) \Rightarrow ((\\
 & (r1_functor2 X0 X1 X3 X4) \wedge (r1_functor2 X1 X2 X5 X6)) \Rightarrow (r1_functor2 \\
 & X0 X2 (k1_functor3 X0 X1 X2 X3 X5) (k1_functor3 X0 X1 X2 X4 X6))))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
 & X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\
 & (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (\\
 & l2_altcat_1 X1)))) \wedge ((m2_functor0 X2 X0 X1) \wedge (m2_functor0 X3 X0 \\
 & X1)))) \Rightarrow (r1_functor2 X0 X1 X2 X2)
 \end{aligned}
 \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& \forall X6. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge (((\neg v2_struct_0 \\
& X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 X2)))) \wedge \\
& (((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1)) \wedge ((v15_functor0 \\
& X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \wedge ((m1_functor2 X5 X0 X1 X3 X4) \wedge \\
& (v15_functor0 X6 X1 X2) \wedge (m2_functor0 X6 X1 X2)))))) \Rightarrow (m1_functor2 \\
& (k5_functor3 X0 X1 X2 X3 X4 X5 X6) X0 X2 (k1_functor3 X0 X1 X2 X3 X6) (\\
& k1_functor3 X0 X1 X2 X4 X6))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (\\
& l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge (\\
& v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge ((m2_functor0 X2 X0 X1) \wedge \\
& ((m2_functor0 X3 X0 X1) \wedge ((m1_functor2 X4 X0 X1 X2 X3) \wedge (m1_subset_1 \\
& X5 (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 (k2_functor2 X0 X1 X2 X3 \\
& X4 X5) (k1_altcat_1 X1 (k3_functor0 X0 X1 X2 X5) (k3_functor0 X0 X1 \\
& X3 X5)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (\\
& l2_altcat_1 X1)))) \wedge (((\neg v2_struct_0 X2) \wedge ((v12_altcat_1 X2) \wedge \\
& (l2_altcat_1 X2)))) \wedge ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 \\
& X0 X1) \wedge ((v15_functor0 X4 X1 X2) \wedge (m2_functor0 X4 X1 X2)))))) \Rightarrow (\\
& (v9_functor0 (k1_functor3 X0 X1 X2 X3 X4) X0 X2) \wedge ((v15_functor0 \\
& (k1_functor3 X0 X1 X2 X3 X4) X0 X2) \wedge (m2_functor0 (k1_functor3 X0 \\
& X1 X2 X3 X4) X0 X2)))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. (m2_functor0 \\
& X2 X0 X1) \Rightarrow (\forall X3. (m2_functor0 X3 X0 X1) \Rightarrow ((r1_functor2 X0 X1 \\
& X2 X3) \Rightarrow (\forall X4. (m1_functor2 X4 X0 X1 X2 X3) \Rightarrow (\forall X5. (m1_subset_1 \\
& X5 (u1_struct_0 X0) \Rightarrow (\forall X6. (m1_subset_1 X6 (k1_altcat_1 \\
& X1 (k3_functor0 X0 X1 X2 X5) (k3_functor0 X0 X1 X3 X5))) \Rightarrow ((X6 = k2_functor2 \\
& X0 X1 X2 X3 X4 X5) \Leftrightarrow (X6 = k1_funct_1 X4 X5))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.((\neg \\
& v2_struct_0 X2) \wedge ((v2_altcat_1 X2) \wedge ((v12_altcat_1 X2) \wedge (l2_altcat_1 \\
& X2)))) \Rightarrow (\forall X3.((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 \\
& X1)) \Rightarrow (\forall X4.((v15_functor0 X4 X0 X1) \wedge (m2_functor0 X4 X0 X1)) \Rightarrow \\
& (\forall X5.(m1_functor2 X5 X0 X1 X3 X4) \Rightarrow (\forall X6.((v15_functor0 \\
& X6 X1 X2) \wedge (m2_functor0 X6 X1 X2)) \Rightarrow ((r1_functor2 X0 X1 X3 X4) \Rightarrow (\forall X7. \\
& (m1_functor2 X7 X0 X2 (k1_functor3 X0 X1 X2 X3 X6) (k1_functor3 X0 \\
& X1 X2 X4 X6)) \Rightarrow ((X7 = k5_functor3 X0 X1 X2 X3 X4 X5 X6) \Leftrightarrow (\forall X8.(\\
& m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (k1_funct_1 X7 X8 = k6_functor0 \\
& X1 X2 X6 (k3_functor0 X0 X1 X3 X8) (k3_functor0 X0 X1 X4 X8) (k2_functor2 \\
& X0 X1 X3 X4 X5 X8))))))))))
\end{aligned} \tag{7}$$

Theorem 1

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