

t9_functor2

(TMRURCNVy4Gj9L5rdGz7tjn26YDwQrnb9Fo)

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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 $v15_functor0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k5_altcat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2.(m2_functor0 \\
& X2 X0 X1) \Rightarrow (\forall X3.(m2_functor0 X3 X0 X1) \Rightarrow ((r1_functor2 X0 X1 \\
& X2 X3) \Rightarrow (\forall X4.(m1_functor2 X4 X0 X1 X2 X3) \Rightarrow ((r8_pboole (u1_struct_0 \\
& X0) (k3_functor2 X0 X1 X2 X3 X3 X4 (k1_functor2 X0 X1 X3)) X4) \wedge (r8_pboole \\
& (u1_struct_0 X0) (k3_functor2 X0 X1 X2 X2 X3 (k1_functor2 X0 X1 X2) \\
& X4) X4))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 \\
& X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge (((\neg v2_struct_0 \\
& X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge \\
& ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 X0 X1))) \Rightarrow (k4_functor2 \\
& X0 X1 X2 = k1_functor2 X0 X1 X2)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 \\
& X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 X0) \wedge (l2_altcat_1 X0)))) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \wedge \\
& ((v15_functor0 X2 X0 X1) \wedge (m2_functor0 X2 \\
& X0 X1)) \wedge ((v15_functor0 X3 X0 X1) \wedge (m2_functor0 X3 X0 X1)))) \Rightarrow (\forall X4. \\
& (m2_functor2 X4 X0 X1 X2 X3) \Rightarrow (m1_functor2 X4 X0 X1 X2 X3))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. ((v15_functor0 \\
& X2 X0 X1) \wedge (m2_functor0 X2 X0 X1)) \Rightarrow (\forall X3. ((v15_functor0 X3 \\
& X0 X1) \wedge (m2_functor0 X3 X0 X1)) \Rightarrow ((r2_functor2 X0 X1 X2 X3) \Leftrightarrow ((r1_functor2 \\
& X0 X1 X2 X3) \wedge (\exists X4. (m1_functor2 X4 X0 X1 X2 X3) \wedge (\forall X5. \\
& (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6. (m1_subset_1 X6 \\
& (u1_struct_0 X0)) \Rightarrow ((k1_altcat_1 X0 X5 X6 \neq k1_xboole_0) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (k1_altcat_1 X0 X5 X6)) \Rightarrow (k5_altcat_1 X1 (k3_functor0 \\
& X0 X1 X2 X5) (k3_functor0 X0 X1 X2 X6) (k3_functor0 X0 X1 X3 X6) (k6_functor0 \\
& X0 X1 X2 X5 X6 X7) (k2_functor2 X0 X1 X2 X3 X4 X6) = k5_altcat_1 X1 (k3_functor0 \\
& X0 X1 X2 X5) (k3_functor0 X0 X1 X3 X5) (k3_functor0 X0 X1 X3 X6) (k2_functor2 \\
& X0 X1 X2 X3 X4 X5) (k6_functor0 X0 X1 X3 X5 X6 X7))))))))))
\end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_altcat_1 X0) \wedge ((v12_altcat_1 \\
& X0) \wedge (l2_altcat_1 X0)))) \Rightarrow (\forall X1. (((\neg v2_struct_0 X1) \wedge ((v2_altcat_1 \\
& X1) \wedge ((v12_altcat_1 X1) \wedge (l2_altcat_1 X1)))) \Rightarrow (\forall X2. ((v15_functor0 \\
& X2 X0 X1) \wedge (m2_functor0 X2 X0 X1)) \Rightarrow (\forall X3. ((v15_functor0 X3 \\
& X0 X1) \wedge (m2_functor0 X3 X0 X1)) \Rightarrow ((r2_functor2 X0 X1 X2 X3) \Rightarrow (\forall X4. \\
& (m2_functor2 X4 X0 X1 X2 X3) \Rightarrow ((r8_pboole (u1_struct_0 X0) (k3_functor2 \\
& X0 X1 X2 X3 X3 X4 (k4_functor2 X0 X1 X3)) X4) \wedge (r8_pboole (u1_struct_0 \\
& X0) (k3_functor2 X0 X1 X2 X2 X3 (k4_functor2 X0 X1 X2) X4) X4))))))
\end{aligned}$$