

t26\_functor0  
(TMXcicvShBv5LstkagBBomvnUgdeaMVftSR)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_altcat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_altcat\_2 : \iota \Rightarrow o$  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  $k8\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v11\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l2\_functor0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v8\_functor0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v9\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v10\_functor0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_altcat\_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_altcat\_1 X1)) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X1)) \Rightarrow ((k1\_altcat\_1 X1 X2 X2 \neq k1\_xboole\_0) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (k1\_altcat\_1 X1 X2 X2)) \Rightarrow (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (k1\_altcat\_1 X0 X4 X5)) \Rightarrow ((k1\_altcat\_1 \\
& X0 X4 X5 \neq k1\_xboole\_0) \Rightarrow (k1\_funct\_1 (k4\_functor0 X0 X1 (k9\_functor0 \\
& X0 X1 X2 X3) X4 X5) X6 = X3))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((\neg v2\_struct\_0 \\
& X0) \wedge (l1\_altcat\_1 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_altcat\_1 X1)) \wedge \\
& (((v11\_functor0 X2 X0 X1) \wedge (l2\_functor0 X2 X0 X1)) \wedge ((m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (u1\_struct\_0 X0)))))) \Rightarrow ( \\
& k7\_functor0 X0 X1 X2 X3 X4 = k4\_functor0 X0 X1 X2 X3 X4)
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\ & X0) \wedge (l1\_altcat\_1 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge ((v1\_altcat\_2 X1) \wedge \\ & (l1\_altcat\_1 X1))) \wedge ((m1\_subset\_1 X2 (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\ & X3 (k1\_altcat\_1 X1 X2 X2)))))) \Rightarrow ((v8\_functor0 (k9\_functor0 X0 X1 \\ & X2 X3) X0 X1) \wedge ((v9\_functor0 (k9\_functor0 X0 X1 X2 X3) X0 X1) \wedge ((v10\_functor0 \\ & (k9\_functor0 X0 X1 X2 X3) X0 X1) \wedge (v11\_functor0 (k9\_functor0 X0 X1 \\ & X2 X3) X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\ & X0) \wedge (l1\_altcat\_1 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_altcat\_1 X1)) \wedge \\ & ((m1\_subset\_1 X2 (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X3 (k1\_altcat\_1 \\ & X1 X2 X2)))))) \Rightarrow ((v9\_functor0 (k9\_functor0 X0 X1 X2 X3) X0 X1) \wedge (l2\_functor0 \\ & (k9\_functor0 X0 X1 X2 X3) X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_altcat\_1 X0)) \Rightarrow ((v1\_altcat\_2 \\ & X0) \Leftrightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_altcat\_1 \\ & X0 X1 X1 \neq k1\_xboole\_0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_altcat\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_altcat\_1 X1)) \Rightarrow (\forall X2. ((v11\_functor0 \\ & X2 X0 X1) \wedge (l2\_functor0 X2 X0 X1)) \Rightarrow ((v8\_functor0 X2 X0 X1) \Leftrightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\ & (u1\_struct\_0 X0)) \Rightarrow (\neg (k1\_altcat\_1 X0 X3 X4 \neq k1\_xboole\_0) \wedge (k1\_altcat\_1 \\ & X1 (k3\_functor0 X0 X1 X2 X4) (k3\_functor0 X0 X1 X2 X3) = k1\_xboole\_0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_altcat\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_altcat\_1 X1)) \Rightarrow (\forall X2. ((v11\_functor0 \\ & X2 X0 X1) \wedge (l2\_functor0 X2 X0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 ( \\ & u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & (\neg (k1\_altcat\_1 X0 X3 X4 \neq k1\_xboole\_0) \wedge ((k1\_altcat\_1 X1 (k3\_functor0 \\ & X0 X1 X2 X4) (k3\_functor0 X0 X1 X2 X3) \neq k1\_xboole\_0) \wedge (\neg \forall X5. \\ & (m1\_subset\_1 X5 (k1\_altcat\_1 X0 X3 X4)) \Rightarrow (k8\_functor0 X0 X1 X2 X3 \\ & X4 X5 = k1\_funct\_1 (k7\_functor0 X0 X1 X2 X3 X4) X5)))))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_altcat\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge ((v1\_altcat\_2 X1) \wedge (l1\_altcat\_1 X1))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (k1\_altcat\_1 X1 X2 X2)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. \\ & (m1\_subset\_1 X6 (k1\_altcat\_1 X0 X4 X5)) \Rightarrow ((k1\_altcat\_1 X0 X4 X5 \neq \\ & k1\_xboole\_0) \Rightarrow (k8\_functor0 X0 X1 (k9\_functor0 X0 X1 X2 X3) X4 X5 X6 = \\ & X3)))))))))) \end{aligned}$$