

### t30\_functor3

(TMU1gfJ1z9KzYHFjDcA9tcamRLosQcPuBu4)

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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  $m2\_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_functor2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_functor3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_altcat\_1 X0) \wedge ((v11\_altcat\_1 \\
& \quad X0) \wedge ((v12\_altcat\_1 X0) \wedge (l2\_altcat\_1 X0)))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_altcat\_1 X1) \wedge ((v11\_altcat\_1 X1) \wedge ((v12\_altcat\_1 \\
& \quad X1) \wedge (l2\_altcat\_1 X1)))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v2\_altcat\_1 X2) \wedge ((v11\_altcat\_1 X2) \wedge ((v12\_altcat\_1 X2) \wedge (l2\_altcat\_1 \\
& \quad X2)))))) \Rightarrow (\forall X3.((v15\_functor0 X3 X0 X1) \wedge (m2\_functor0 X3 \\
& \quad X0 X1)) \Rightarrow (\forall X4.((v15\_functor0 X4 X0 X1) \wedge (m2\_functor0 X4 X0 \\
& \quad X1)) \Rightarrow (\forall X5.((v15\_functor0 X5 X1 X2) \wedge (m2\_functor0 X5 X1 X2)) \Rightarrow \\
& \quad (\forall X6.((v15\_functor0 X6 X1 X2) \wedge (m2\_functor0 X6 X1 X2)) \Rightarrow ( \\
& \quad \quad \forall X7.(m2\_functor2 X7 X1 X2 X5 X6) \Rightarrow (\forall X8.(m2\_functor2 \\
& \quad X8 X0 X1 X3 X4) \Rightarrow (((r2\_functor2 X0 X1 X3 X4) \wedge (r2\_functor2 X1 X2 X5 X6)) \Rightarrow \\
& \quad ((r2\_functor2 X0 X2 (k1\_functor3 X0 X1 X2 X3 X5) (k1\_functor3 X0 X1 \\
& \quad X2 X4 X6)) \wedge (m2\_functor2 (k7\_functor3 X0 X1 X2 X3 X4 X5 X6 X8 X7) X0 X2 \\
& \quad (k1\_functor3 X0 X1 X2 X3 X5) (k1\_functor3 X0 X1 X2 X4 X6))))))))))))) \\
& \hspace{15em} (1)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_altcat\_1 X0) \wedge ((v11\_altcat\_1 \\ & \quad X0) \wedge ((v12\_altcat\_1 X0) \wedge (l2\_altcat\_1 X0)))))) \Rightarrow (\forall X1.(( \\ & \neg v2\_struct\_0 X1) \wedge ((v2\_altcat\_1 X1) \wedge ((v11\_altcat\_1 X1) \wedge ((v12\_altcat\_1 \\ & \quad X1) \wedge (l2\_altcat\_1 X1)))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge (( \\ & \quad v2\_altcat\_1 X2) \wedge ((v11\_altcat\_1 X2) \wedge ((v12\_altcat\_1 X2) \wedge (l2\_altcat\_1 \\ & \quad X2)))))) \Rightarrow (\forall X3.((v15\_functor0 X3 X0 X1) \wedge (m2\_functor0 X3 \\ & \quad X0 X1)) \Rightarrow (\forall X4.((v15\_functor0 X4 X0 X1) \wedge (m2\_functor0 X4 X0 \\ & \quad X1)) \Rightarrow (\forall X5.((v15\_functor0 X5 X1 X2) \wedge (m2\_functor0 X5 X1 X2)) \Rightarrow \\ & \quad (\forall X6.((v15\_functor0 X6 X1 X2) \wedge (m2\_functor0 X6 X1 X2)) \Rightarrow ( \\ & \quad \quad \forall X7.(m2\_functor2 X7 X0 X1 X3 X4) \Rightarrow (\forall X8.(m2\_functor2 \\ & \quad X8 X1 X2 X5 X6) \Rightarrow (((r2\_functor2 X0 X1 X3 X4) \wedge (r2\_functor2 X1 X2 X5 X6)) \Rightarrow \\ & \quad ((r2\_functor2 X0 X2 (k1\_functor3 X0 X1 X2 X3 X5) (k1\_functor3 X0 X1 \\ & \quad X2 X4 X6)) \wedge (m2\_functor2 (k7\_functor3 X0 X1 X2 X3 X4 X5 X6 X7 X8) X0 X2 \\ & \quad (k1\_functor3 X0 X1 X2 X3 X5) (k1\_functor3 X0 X1 X2 X4 X6)))))))))) \end{aligned}$$