

t7\_yellow18

(TMUqy2wN31Tca3E33Bho2qJ9C2c4tfUCbCP)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_altcat\_1 : \iota \Rightarrow o$  be given. Let  $r2\_yellow18 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_altcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_4 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_altcat\_1 : \iota \Rightarrow o$  be given. Let  $u1\_altcat\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_altcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_altcat\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 (k2\_zfmisc\_1 X0 \\ & X1)) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X1) \Rightarrow \\ & (k1\_binop\_1 (k2\_funct\_4 X2) X4 X3 = k1\_binop\_1 X2 X3 X4)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_altcat\_1 X0) \Rightarrow ((v1\_relat\_1 (u1\_altcat\_1 X0)) \wedge \\ & ((v4\_relat\_1 (u1\_altcat\_1 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)))) \wedge ((v1\_funct\_1 (u1\_altcat\_1 X0)) \wedge (v1\_partfun1 \\ & (u1\_altcat\_1 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l2\_altcat\_1 X0) \Rightarrow (l1\_altcat\_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.(l1\_altcat\_1 X0) \Rightarrow (l1\_struct\_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_altcat\_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l2\_altcat\_1 X1)) \Rightarrow ((r2\_yellow18 X0 X1) \Leftrightarrow ( \\
& (u1\_struct\_0 X1 = u1\_struct\_0 X0) \wedge ((u1\_altcat\_1 X1 = k2\_funct\_4 \\
& (u1\_altcat\_1 X0)) \wedge (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\
& X1)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X1)) \Rightarrow (\forall X7. \\
& (m1\_subset\_1 X7 (u1\_struct\_0 X1)) \Rightarrow (((X5 = X2) \wedge ((X6 = X3) \wedge (X7 = X4))) \Rightarrow \\
& (k4\_altcat\_1 (u1\_struct\_0 X1) (u1\_altcat\_1 X1) (u2\_altcat\_1 X1) \\
& X5 X6 X7 = k1\_functor0 (k1\_binop\_1 (u1\_altcat\_1 X0) X3 X2) (k1\_binop\_1 \\
& (u1\_altcat\_1 X0) X4 X3) (k1\_binop\_1 (u1\_altcat\_1 X0) X4 X2) (k4\_altcat\_1 \\
& (u1\_struct\_0 X0) (u1\_altcat\_1 X0) (u2\_altcat\_1 X0) X4 X3 X2)))))))))) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_altcat\_1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k1\_altcat\_1 \\
& X0 X1 X2 = k1\_binop\_1 (u1\_altcat\_1 X0) X1 X2))) \\
& \tag{7}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_altcat\_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l2\_altcat\_1 X1)) \Rightarrow ((r2\_yellow18 X0 X1) \Rightarrow ( \\
& \forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X1)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X1)) \Rightarrow (((X4 = X2) \wedge \\
& (X5 = X3)) \Rightarrow (k1\_altcat\_1 X0 X2 X3 = k1\_altcat\_1 X1 X5 X4))))))))) \\
& \tag{7}
\end{aligned}$$