

t37\_yellow20

(TMJZuc7YAkpKSMuY6aUHXmKFus1ehM95Xv1)

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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  $l2\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_yellow20 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_functor0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_altcat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_altcat\_2 : \iota \Rightarrow \iota \Rightarrow o$  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  $v21\_functor0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_altcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xbool\_0 : \iota$  be given. Let  $k6\_functor0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_altcat\_1 X0) \wedge ((v11\_altcat\_1 X0) \wedge ((v12\_altcat\_1 X0) \wedge (l2\_altcat\_1 X0)))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_altcat\_1 X1) \wedge ((v11\_altcat\_1 X1) \wedge ((v12\_altcat\_1 X1) \wedge (l2\_altcat\_1 X1)))))) \Rightarrow (\forall X2.(l2\_functor0 X2 X0 X1) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge ((v2\_altcat\_1 X3) \wedge ((v11\_altcat\_1 X3) \wedge ((v12\_altcat\_1 X3) \wedge (l2\_altcat\_1 X3)))))) \Rightarrow (\forall X4.((\neg v2\_struct\_0 X4) \wedge ((v2\_altcat\_1 X4) \wedge ((v11\_altcat\_1 X4) \wedge ((v12\_altcat\_1 X4) \wedge (l2\_altcat\_1 X4)))))) \Rightarrow ((r2\_yellow20 X0 X1 X2 X3 X4) \Leftrightarrow (((v2\_altcat\_1 X3) \wedge ((v3\_altcat\_2 X3 X0) \wedge (m1\_altcat\_2 X3 X0))) \wedge ((v2\_altcat\_1 X4) \wedge ((v3\_altcat\_2 X4 X1) \wedge (m1\_altcat\_2 X4 X1)))) \wedge (\exists X5.(v15\_functor0 X5 X3 X4) \wedge (m2\_functor0 X5 X3 X4) \wedge ((v21\_functor0 X5 X3 X4) \wedge ((\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X3)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0)) \Rightarrow ((X6 = X7) \Rightarrow (k3\_functor0 X3 X4 X5 X6 = k3\_functor0 X0 X1 X2 X7)))) \wedge (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X3)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X3)) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0)) \Rightarrow (\forall X9.(m1\_subset\_1 X9 (u1\_struct\_0 X0)) \Rightarrow (((X6 = X8) \wedge (X7 = X9)) \Rightarrow ((k1\_altcat\_1 X3 X6 X7 = k1\_xboole\_0) \vee (\forall X10.(m1\_subset\_1 X10 (k1\_altcat\_1 X3 X6 X7)) \Rightarrow (\forall X11.(m1\_subset\_1 X11 (k1\_altcat\_1 X0 X8 X9)) \Rightarrow ((X10 = X11) \Rightarrow (k6\_functor0 X3 X4 X5 X6 X7 X10 = k1\_funct\_1 (k4\_functor0 X0 X1 X2 X8 X9) X11))))))))))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_altcat\_1 X0) \wedge ((v12\_altcat\_1 X0) \wedge (l2\_altcat\_1 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_altcat\_1 X1) \wedge ((v12\_altcat\_1 X1) \wedge (l2\_altcat\_1 X1)))) \Rightarrow ((r1\_functor0 X0 X1) \Leftrightarrow (\exists X2.(m2\_functor0 X2 X0 X1) \wedge ((v21\_functor0 X2 X0 X1) \wedge (v15\_functor0 X2 X0 X1)))) \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_altcat\_1 X0) \wedge ((v11\_altcat\_1 X0) \wedge ((v12\_altcat\_1 X0) \wedge (l2\_altcat\_1 X0)))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_altcat\_1 X1) \wedge ((v11\_altcat\_1 X1) \wedge ((v12\_altcat\_1 X1) \wedge (l2\_altcat\_1 X1)))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v2\_altcat\_1 X2) \wedge ((v11\_altcat\_1 X2) \wedge ((v12\_altcat\_1 X2) \wedge (l2\_altcat\_1 X2)))))) \Rightarrow (\forall X3.((\neg v2\_struct\_0 X3) \wedge ((v2\_altcat\_1 X3) \wedge ((v11\_altcat\_1 X3) \wedge ((v12\_altcat\_1 X3) \wedge (l2\_altcat\_1 X3)))))) \Rightarrow (\forall X4.(l2\_functor0 X4 X0 X1) \Rightarrow ((r2\_yellow20 X0 X1 X4 X2 X3) \Rightarrow (r1\_functor0 X2 X3)))) \end{aligned}$$