

t61\_finseqop  
(TMbD6etxL6JQVi1Qq5m9B5uZu61bGdmuHE8)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_setwiseo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finseqop : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow \\
& \quad (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge \\
& ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (((v1\_setwiseo X3 X0) \wedge \\
& ((v2\_binop\_1 X3 X0) \wedge ((v1\_finseqop X3 X0) \wedge (k5\_binop\_1 X0 X3 X1 X2 = \\
& \quad k4\_binop\_1 X0 X3)))))) \Rightarrow ((X1 = k3\_funct\_2 X0 X0 (k5\_finseqop X0 X3) \\
& \quad X2) \wedge (k3\_funct\_2 X0 X0 (k5\_finseqop X0 X3) X1 = X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow ((v1\_setwiseo X1 X0) \Rightarrow \\
& \quad (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow ((k5\_binop\_1 X0 X1 (k4\_binop\_1 \\
& \quad X0 X1) X2 = X2) \wedge (k5\_binop\_1 X0 X1 X2 (k4\_binop\_1 X0 X1) = X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\
& X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 X0) X0)))))) \Rightarrow (m1\_subset\_1 (k4\_binop\_1 X0 X1) X0)
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (((v1\_setwiseo X1 X0) \wedge \\ ((v2\_binop\_1 X1 X0) \wedge (v1\_finseqop X1 X0))) \Rightarrow (k3\_funct\_2 X0 X0 (k5\_finseqop \\ X0 X1) (k4\_binop\_1 X0 X1) = k4\_binop\_1 X0 X1)) \end{aligned}$$