

t45\_finseqop  
(TMEpiZ7Vk6QC8fmzBQiNLnhHrh9ntsSCTzc)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_setwiseo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 \\ & X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X1 \\ & X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow (\forall X4. \\ & ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X1 X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 X0)))))) \Rightarrow (\forall X5.(m1\_subset\_1 X5 X0) \Rightarrow ((\forall X6. \\ & (m1\_subset\_1 X6 X1) \Rightarrow (k3\_funct\_2 X1 X0 X3 X6 = k5\_binop\_1 X0 X2 (k3\_funct\_2 \\ & X1 X0 X4 X6) X5)) \Rightarrow (r2\_funct\_2 X1 X0 X3 (k9\_funcop\_1 X0 X1 X2 X4 X5)))))) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\
& X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0))))))\wedge(((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X1 X0)\wedge(m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))))))\wedge(m1\_subset\_1 X4 X0)))\Rightarrow \\
& ((v1\_funct\_1 (k9\_funcop\_1 X0 X1 X2 X3 X4)\wedge((v1\_funct\_2 (k9\_funcop\_1 \\
& X0 X1 X2 X3 X4) X1 X0)\wedge(m1\_subset\_1 (k9\_funcop\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X1 X0))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\
& X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X0) X0))))))\Rightarrow(m1\_subset\_1 (k4\_binop\_1 X0 X1) X0)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\
& (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 ( \\
& k3\_funct\_2 X0 X1 X2 X3) X1)
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow(\forall X3.((v1\_funct\_1 \\
& X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 X1 X1) X1)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 X1 X1) X1))))))\Rightarrow((v1\_setwiseo X3 X1)\Rightarrow \\
& (r2\_funct\_2 X0 X1 (k9\_funcop\_1 X1 X0 X3 X2 (k4\_binop\_1 X1 X3)) X2))))
\end{aligned}$$