

t57\_finseqop  
(TMUhPmiKLLbojCpTgQczbhc1dzPYi5XBJAk)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k3\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k5\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow (\forall X3.((v1\_funct\_1 \\ & X3) \wedge ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X1 X1) X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X1 X1) X1)))))) \Rightarrow ((v1\_setwiseo X3 X1) \Rightarrow \\ & (r2\_funct\_2 X0 X1 (k10\_funcop\_1 X1 X0 X3 (k4\_binop\_1 X1 X3) X2) X2)))))) \end{aligned} \quad (2)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Leftrightarrow(m1\_finseq\_1 X1 X0) \quad (5)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge((\neg v1\_xboole\_0 X2)\wedge( \\ & ((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) X2)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2))))\wedge((m1\_subset\_1 \\ & X4 X0)\wedge(m1\_finseq\_1 X5 X1))))))\Rightarrow(k3\_finseqop X0 X1 X2 X3 X4 X5 = k5\_funcop\_1 \\ & X3 X4 X5) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(k2\_finseq\_1 X0 = k1\_finseq\_1 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\ & X0)\wedge(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\ & X0))))\wedge((m1\_subset\_1 X3 X0)\wedge((v1\_funct\_1 X4)\wedge((v1\_funct\_2 \\ & X4 X1 X0)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))))))\Rightarrow \\ & (k10\_funcop\_1 X0 X1 X2 X3 X4 = k5\_funcop\_1 X2 X3 X4) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(v7\_ordinal1 X1)\Rightarrow( \\ & \forall X2.((v3\_card\_1 X2 X1)\wedge(m2\_finseq\_1 X2 X0))\Rightarrow((v1\_funct\_1 \\ & X2)\wedge((v1\_funct\_2 X2 (k2\_finseq\_1 X1) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_finseq\_1 X1) X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow \\
& (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (k2\_zfmisc\_1 X0 \\
& X1) X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1) X2)))))) \Rightarrow (\forall X5.((v3\_card\_1 X5 k6\_numbers) \wedge (m2\_finseq\_1 \\
& X5 X1)) \Rightarrow (r2\_relset\_1 k5\_numbers X2 (k3\_finseqop X0 X1 X2 X4 X3 X5) \\
& (k6\_finseq\_1 X2))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.v1\_xboole\_0 (k6\_finseq\_1 X0) \tag{13}$$

Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (\neg v1\_xboole\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (k1\_finseq\_1 X0)) \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ( \\
& (v1\_finseq\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& X0))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\
& X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X0) X0)))))) \Rightarrow (m1\_subset\_1 (k4\_binop\_1 X0 X1) X0)
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0 \\
& X0) \wedge (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 X0) X0) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) \\
& X0)))))) \wedge ((m1\_subset\_1 X3 X0) \wedge ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
& X4 X1 X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))))))))) \Rightarrow \\
& ((v1\_funct\_1 (k10\_funcop\_1 X0 X1 X2 X3 X4)) \wedge ((v1\_funct\_2 (k10\_funcop\_1 \\
& X0 X1 X2 X3 X4) X1 X0) \wedge (m1\_subset\_1 (k10\_funcop\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X1 X0))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.(v3\_card\_1 X0 k1\_xboole\_0) \Rightarrow (v1\_xboole\_0 X0) \tag{18}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ( \\ & \quad \forall X2.((v3\_card\_1 X2 X1) \wedge (m2\_finseq\_1 X2 X0)) \Rightarrow (\forall X3. \\ & \quad ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 \\ & \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow ((v1\_setwiseo \\ & \quad X3 X0) \Rightarrow (r2\_relset\_1 k5\_numbers X0 (k3\_finseqop X0 X0 X0 X3 (k4\_binop\_1 \\ & \quad X0 X3) X2) X2)))))) \end{aligned}$$