

t66_finseqop
(TMYtpr9koUfDcjCBMv3BVGLkE1pHf2RCMGC)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseqop : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r6_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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. Let $k3_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (((v1_setwiseo X3 X0) \wedge \\ & ((v2_binop_1 X3 X0) \wedge (v1_finseqop X3 X0))) \Rightarrow (((k5_binop_1 X0 X3 \\ & X1 X2 \neq X2) \wedge (k5_binop_1 X0 X3 X2 X1 \neq X2)) \vee (X1 = k4_binop_1 X0 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow ((v1_setwiseo X1 X0) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 X0) \Rightarrow ((k5_binop_1 X0 X1 (k4_binop_1 \\ & X0 X1) X2 = X2) \wedge (k5_binop_1 X0 X1 X2 (k4_binop_1 X0 X1) = X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\
& X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (\\
& k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0) X0)))) \Rightarrow ((r6_binop_1 X0 X1 X2) \Leftrightarrow (\forall X3. \\
& (m1_subset_1 X3 X0) \Rightarrow (\forall X4. (m1_subset_1 X4 X0) \Rightarrow (\forall X5. \\
& (m1_subset_1 X5 X0) \Rightarrow ((k3_binop_1 X0 X1 X3 (k3_binop_1 X0 X2 X4 X5) = \\
& k3_binop_1 X0 X2 (k3_binop_1 X0 X1 X3 X4) (k3_binop_1 X0 X1 X3 X5)) \wedge \\
& (k3_binop_1 X0 X1 (k3_binop_1 X0 X2 X3 X4) X5 = k3_binop_1 X0 X2 (k3_binop_1 \\
& X0 X1 X3 X5) (k3_binop_1 X0 X1 X4 X5)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\
& ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \wedge ((m1_subset_1 X2 X0) \wedge \\
& (m1_subset_1 X3 X0))) \Rightarrow (k5_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\
& ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \wedge ((m1_subset_1 X2 X0) \wedge \\
& (m1_subset_1 X3 X0))) \Rightarrow (k3_binop_1 X0 X1 X2 X3 = k1_binop_1 X1 X2 X3)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X1) \wedge \\
& ((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))) \wedge ((m1_subset_1 X2 X0) \wedge \\
& (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (k3_binop_1 X0 X1 X2 X3) X0)
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow \\
& (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (\\
& k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0) X0)))) \Rightarrow (((v2_binop_1 X2 X0) \wedge ((v1_setwiseo \\
& X2 X0) \wedge ((v1_finseqop X2 X0) \wedge ((r6_binop_1 X0 X3 X2) \wedge (X1 = k4_binop_1 \\
& X0 X2)))) \Rightarrow (\forall X4. (m1_subset_1 X4 X0) \Rightarrow ((k5_binop_1 X0 X3 \\
& X1 X4 = X1) \wedge (k5_binop_1 X0 X3 X4 X1 = X1)))))))))
\end{aligned}$$