

t37_setwop_2

(TMSviXxEvp8p6SfJwuFSZBSqNVT2BEm6DB6)

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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 $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $r8_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $k5_finseqop : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_finsop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_relat_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\
 & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 \\
 & X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (((v1_binop_1 X1 X0) \wedge \\
 & ((v2_binop_1 X1 X0) \wedge ((v1_setwiseo X1 X0) \wedge ((v1_finseqop X1 X0) \wedge \\
 & (r8_binop_1 X0 X0 X0 X2 (k7_finseqop X0 X1 (k6_partfun1 X0) (k5_finseqop \\
 & X0 X1)))))) \Rightarrow (\forall X3. (m1_subset_1 X3 X0) \Rightarrow (\forall X4. (m1_subset_1 \\
 & X4 X0) \Rightarrow (\forall X5. (m1_subset_1 X5 X0) \Rightarrow (\forall X6. (m1_subset_1 \\
 & X6 X0) \Rightarrow (k5_binop_1 X0 X1 (k5_binop_1 X0 X2 X3 X4) (k5_binop_1 X0 X2 \\
 & X5 X6) = k5_binop_1 X0 X2 (k5_binop_1 X0 X1 X3 X5) (k5_binop_1 X0 X1 \\
 & X4 X6))))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))))) \Rightarrow (((v2_binop_1 X2 X0) \wedge ((v1_setwiseo X2 X0) \wedge (v1_finseqop \\
& X2 X0))) \Rightarrow (k5_binop_1 X0 (k7_finseqop X0 X2 (k6_partfun1 X0) (k5_finseqop \\
& X0 X2)) X1 X1 = k4_binop_1 X0 X2)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (\\
& k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (\forall X4.(v7_ordinal1 X4) \Rightarrow (\forall X5. \\
& (m2_finseq_2 X5 X0 (k4_finseq_2 X4 X0)) \Rightarrow (\forall X6.(m2_finseq_2 \\
& X6 X0 (k4_finseq_2 X4 X0)) \Rightarrow (((v1_binop_1 X2 X0) \wedge ((v2_binop_1 X2 \\
& X0) \wedge ((v1_setwiseo X2 X0) \wedge ((X1 = k4_binop_1 X0 X2) \wedge ((k5_binop_1 \\
& X0 X3 X1 X1 = X1) \wedge (\forall X7.(m1_subset_1 X7 X0) \Rightarrow (\forall X8.(m1_subset_1 \\
& X8 X0) \Rightarrow (\forall X9.(m1_subset_1 X9 X0) \Rightarrow (\forall X10.(m1_subset_1 \\
& X10 X0) \Rightarrow (k5_binop_1 X0 X2 (k5_binop_1 X0 X3 X7 X8) (k5_binop_1 X0 \\
& X3 X9 X10) = k5_binop_1 X0 X3 (k5_binop_1 X0 X2 X7 X9) (k5_binop_1 X0 \\
& X2 X8 X10)))))))))) \Rightarrow (k5_binop_1 X0 X3 (k1_finsop_1 X0 X5 X2) (k1_finsop_1 \\
& X0 X6 X2) = k1_finsop_1 X0 (k1_finseqop X0 X0 X0 X3 X5 X6) X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(((v1_funct_1 \\
& X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))))) \wedge ((v1_funct_1 X4) \wedge ((\\
& v1_funct_2 X4 (k2_zfmisc_1 X0 X1) X2) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X1) X2)))))) \Rightarrow ((r8_binop_1 X0 X1 X2 \\
& X3 X4) \Leftrightarrow (X3 = X4))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.k6_partfun1 X0 = k4_relat_1 X0 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_relat_1 (k4_relat_1 X0)) \wedge ((v4_relat_1 (k4_relat_1 \\
& X0) X0) \wedge ((v1_funct_1 (k4_relat_1 X0)) \wedge (v1_partfun1 (k4_relat_1 \\
& X0) X0)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\wedge(((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 X0 X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0))))))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X0)\wedge(m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))))))\Rightarrow((v1_funct_1 (k7_finseqop \\ & X0 X1 X2 X3))\wedge((v1_funct_2 (k7_finseqop X0 X1 X2 X3) (k2_zfmisc_1 \\ & X0 X0) X0)\wedge(m1_subset_1 (k7_finseqop X0 X1 X2 X3) (k1_zfmisc_1 (\\ & k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1_partfun1 (k6_partfun1 X0) X0)\wedge(m1_subset_1 (k6_partfun1 X0) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow((v1_funct_1 (k5_finseqop \\ & X0 X1))\wedge((v1_funct_2 (k5_finseqop X0 X1) X0 X0)\wedge(m1_subset_1 (\\ & k5_finseqop X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1)\wedge((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0))))))\Rightarrow(m1_subset_1 (k4_binop_1 X0 X1) X0) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))\Rightarrow((v1_partfun1 X2 X0)\Rightarrow(v1_funct_2 X2 X0 X1)) \end{aligned} \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((v1_funct_1 X1)\wedge(\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X2.((v1_funct_1 \\ & X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X3.(v7_ordinal1 \\ & X3)\Rightarrow(\forall X4.(m2_finseq_2 X4 X0 (k4_finseq_2 X3 X0))\Rightarrow(\forall X5. \\ & (m2_finseq_2 X5 X0 (k4_finseq_2 X3 X0))\Rightarrow(((v1_binop_1 X1 X0)\wedge(\\ & (v2_binop_1 X1 X0)\wedge((v1_setwiseo X1 X0)\wedge((v1_finseqop X1 X0)\wedge \\ & (r8_binop_1 X0 X0 X0 X2 (k7_finseqop X0 X1 (k6_partfun1 X0) (k5_finseqop \\ & X0 X1))))))\Rightarrow(k5_binop_1 X0 X2 (k1_finsop_1 X0 X4 X1) (k1_finsop_1 \\ & X0 X5 X1) = k1_finsop_1 X0 (k1_finseqop X0 X0 X0 X2 X4 X5) X1)))))) \end{aligned}$$