

t52_setwiseo (TMWHhQARvNCZEVvFkewCXg-
LYzjFEk5ghpZL)

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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 $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setwiseo : \iota \Rightarrow \iota$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.v2_binop_1 (k9_setwiseo X0) (k5_finsub_1 X0) \quad (1)$$

Assume the following.

$$\forall X0.v1_binop_1 (k9_setwiseo X0) (k5_finsub_1 X0) \quad (2)$$

Assume the following.

$$\forall X0.v3_binop_1 (k9_setwiseo X0) (k5_finsub_1 X0) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X1 \\
& X1) X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))))) \Rightarrow (((v1_binop_1 X2 X1) \wedge ((v2_binop_1 X2 X1) \wedge (v3_binop_1 \\
& X2 X1))) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow (\forall X4.((v1_funct_1 \\
& X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 X3 X3) X3) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X3 X3) X3)))))) \Rightarrow (((v1_binop_1 X4 X3) \wedge \\
& ((v2_binop_1 X4 X3) \wedge (v3_binop_1 X4 X3))) \Rightarrow (\forall X5.((v1_funct_1 \\
& X5) \wedge ((v1_funct_2 X5 X0 X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge ((v1_funct_2 X6 X1 X3) \wedge \\
& (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X1 X3)))))) \Rightarrow ((\forall X7. \\
& (m1_subset_1 X7 X1) \Rightarrow (\forall X8.(m1_subset_1 X8 X1) \Rightarrow (k3_funct_2 \\
& X1 X3 X6 (k5_binop_1 X1 X2 X7 X8) = k5_binop_1 X3 X4 (k3_funct_2 X1 X3 \\
& X6 X7) (k3_funct_2 X1 X3 X6 X8)))) \Rightarrow (\forall X7.(m1_subset_1 X7 (\\
& k5_finsub_1 X0)) \Rightarrow ((X7 \neq k1_xboole_0) \Rightarrow (k3_funct_2 X1 X3 X6 (k7_setwiseo \\
& X0 X1 X2 X7 X5) = k7_setwiseo X0 X3 X4 X7 (k1_partfun1 X0 X1 X1 X3 X5 X6))))))))) \\
& \tag{4}
\end{aligned}$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_funct_1 (k9_setwiseo X0)) \wedge ((v1_funct_2 (k9_setwiseo \\
& X0) (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) (k5_finsub_1 \\
& X0)) \wedge (m1_subset_1 (k9_setwiseo X0) (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 X0)) (k5_finsub_1 \\
& X0)))))) \\
& \tag{6}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.\forall X2.(m1_subset_1 \\
& X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\
& X3 X0 (k5_finsub_1 X1)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 (k5_finsub_1 X1)))))) \Rightarrow (k10_setwiseo X0 X1 X2 X3 = k7_setwiseo \\
& X0 (k5_finsub_1 X1) (k9_setwiseo X1) X2 X3)) \\
& \tag{7}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\
& (k5_finsub_1 X0) (k5_finsub_1 X0)) (k5_finsub_1 X0)) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\
& X0)) (k5_finsub_1 X0)))))) \Rightarrow ((X1 = k9_setwiseo X0) \Leftrightarrow (\forall X2. \\
& (m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (k5_finsub_1 X0)) \Rightarrow (k5_binop_1 (k5_finsub_1 X0) X1 X2 X3 = k5_setwiseo \\
& X0 X2 X3)))) \\
& \tag{8}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 \\
& X0 X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0)))))) \Rightarrow (((v1_binop_1 X3 X0) \wedge ((v2_binop_1 X3 X0) \wedge (v3_binop_1 \\
& X3 X0))) \Rightarrow (\forall X4.(m1_subset_1 X4 (k5_finsub_1 X1)) \Rightarrow ((X4 \neq \\
& k1_xboole_0) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X1 \\
& (k5_finsub_1 X2)) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X1 (k5_finsub_1 X2)))))) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge ((v1_funct_2 \\
& X6 (k5_finsub_1 X2) X0) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k5_finsub_1 X2) X0)))))) \Rightarrow ((\forall X7.(m1_subset_1 X7 (k5_finsub_1 \\
& X2)) \Rightarrow (\forall X8.(m1_subset_1 X8 (k5_finsub_1 X2)) \Rightarrow (k3_funct_2 \\
& (k5_finsub_1 X2) X0 X6 (k5_setwiseo X2 X7 X8) = k5_binop_1 X0 X3 (k3_funct_2 \\
& (k5_finsub_1 X2) X0 X6 X7) (k3_funct_2 (k5_finsub_1 X2) X0 X6 X8)))) \Rightarrow \\
& (k3_funct_2 (k5_finsub_1 X2) X0 X6 (k10_setwiseo X1 X2 X4 X5) = k7_setwiseo \\
& X1 X0 X3 X4 (k1_partfun1 X1 (k5_finsub_1 X2) (k5_finsub_1 X2) X0 X5 \\
& X6)))))))))
\end{aligned}$$