

t45_setwiseo
(TMYpuc3LC1WvLJDQ4LkArhiJ1r87ZwrZQdF)

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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 $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_setwiseo : \iota \Rightarrow \iota$ be given. Let $v1_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_binop_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\ & X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 \\ & X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (((\\ & v3_binop_1 X2 X0) \wedge (v1_binop_1 X2 X0) \wedge (v2_binop_1 X2 X0))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 X1) \Rightarrow (\forall X5.(m1_subset_1 X5 X1) \Rightarrow (k7_setwiseo \\ & X1 X0 X2 (k3_setwiseo X1 X4 X5) X3 = k5_binop_1 X0 X2 (k3_funct_2 X1 \\ & X0 X3 X4) (k3_funct_2 X1 X0 X3 X5)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\ & X1 X0) \wedge (m1_subset_1 X2 X0))) \Rightarrow (m1_subset_1 (k3_setwiseo X0 X1 X2) \\ & (k5_finsub_1 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.\forall X2.(m1_subset_1 \\ & X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 X0 (k5_finsub_1 X1)) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 (k5_finsub_1 X1)))))) \Rightarrow (k10_setwiseo X0 X1 X2 X3 = k7_setwiseo \\ & X0 (k5_finsub_1 X1) (k9_setwiseo X1) X2 X3))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & (k5_finsub_1 X0) (k5_finsub_1 X0)) (k5_finsub_1 X0)) \wedge (m1_subset_1 \\ & X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (k5_finsub_1 X0) (k5_finsub_1 \\ & X0)) (k5_finsub_1 X0)))))) \Rightarrow ((X1 = k9_setwiseo X0) \Leftrightarrow (\forall X2. \\ & (m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (k5_finsub_1 X0)) \Rightarrow (k5_binop_1 (k5_finsub_1 X0) X1 X2 X3 = k5_setwiseo \\ & X0 X2 X3)))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.\forall X2.((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 X0 (k5_finsub_1 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 (k5_finsub_1 X1)))))) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 X0) \Rightarrow (\forall X4.(m1_subset_1 X4 X0) \Rightarrow (k10_setwiseo X0 X1 (k3_setwiseo \\ & X0 X3 X4) X2 = k5_setwiseo X1 (k3_funct_2 X0 (k5_finsub_1 X1) X2 X3) \\ & (k3_funct_2 X0 (k5_finsub_1 X1) X2 X4)))))) \end{aligned}$$