

# t23\_setwiseo (TMFfxqj- maX3LAVWG5XXLAKZa8j2kcimVoCd)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow \\ & (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 \\ & X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0) X0)))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X1 \\ & X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0)))) \Rightarrow ((( \\ & v3\_binop\_1 X2 X0) \wedge ((v1\_binop\_1 X2 X0) \wedge (v2\_binop\_1 X2 X0))) \Rightarrow (\forall X4. \\ & (m1\_subset\_1 X4 (k5\_finsub\_1 X1)) \Rightarrow (\forall X5. (m1\_subset\_1 X5 \\ & (k5\_finsub\_1 X1)) \Rightarrow (\neg(X4 \neq k1\_xboole\_0) \wedge ((X5 \neq k1\_xboole\_0) \wedge ( \\ & k7\_setwiseo X1 X0 X2 (k5\_setwiseo X1 X4 X5) X3 \neq k5\_binop\_1 X0 X2 (k7\_setwiseo \\ & X1 X0 X2 X4 X3) (k7\_setwiseo X1 X0 X2 X5 X3)))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k2\_xboole\_0 X0 X1 = X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((m1\_subset\_1 X1 (k5\_finsub\_1 \\ & X0)) \wedge (m1\_subset\_1 X2 (k5\_finsub\_1 X0))) \Rightarrow (k5\_setwiseo X0 X1 X2 = \\ & k2\_xboole\_0 X1 X2) \quad (4) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0 X0)\Rightarrow(\neg v1\_xboole\_0 (k2\_xboole\_0 X0 X1)) \quad (5)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow \\ & (\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 \\ & X0) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0) X0))))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X1 \\ & X0)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))))))\Rightarrow((( \\ & v1\_binop\_1 X2 X0)\wedge((v2\_binop\_1 X2 X0)\wedge(v3\_binop\_1 X2 X0)))\Rightarrow(\forall X4. \\ & (m1\_subset\_1 X4 (k5\_finsub\_1 X1))\Rightarrow(\forall X5.(m1\_subset\_1 X5 \\ & (k5\_finsub\_1 X1))\Rightarrow((r1\_tarSKI X4 X5)\Rightarrow((X4 = k1\_xboole\_0)\vee(k5\_binop\_1 \\ & X0 X2 (k7\_setwiseo X1 X0 X2 X4 X3) (k7\_setwiseo X1 X0 X2 X5 X3) = k7\_setwiseo \\ & X1 X0 X2 X5 X3)))))))))) \end{aligned}$$