

# t34\_setwop\_2

## (TMLvjC12vYz1eLtTKDxSN3o4rh5AyncoTyf)

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  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  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. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow \\
& (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (k2\_zfmisc\_1 X0 \\
& X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X0) X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 ( \\
& k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (\forall X4. (m2\_finseq\_1 X4 X0) \Rightarrow ( \\
& \forall X5. (m2\_finseq\_1 X5 X0) \Rightarrow (((v1\_binop\_1 X2 X0) \wedge ((v2\_binop\_1 \\
& X2 X0) \wedge ((v1\_setwiseo X2 X0) \wedge ((X1 = k4\_binop\_1 X0 X2) \wedge ((k5\_binop\_1 \\
& X0 X3 X1 X1 = X1) \wedge ((\forall X6. (m1\_subset\_1 X6 X0) \Rightarrow (\forall X7. ( \\
& m1\_subset\_1 X7 X0) \Rightarrow (\forall X8. (m1\_subset\_1 X8 X0) \Rightarrow (\forall X9. \\
& (m1\_subset\_1 X9 X0) \Rightarrow (k5\_binop\_1 X0 X2 (k5\_binop\_1 X0 X3 X6 X7) (k5\_binop\_1 \\
& X0 X3 X8 X9) = k5\_binop\_1 X0 X3 (k5\_binop\_1 X0 X2 X6 X8) (k5\_binop\_1 \\
& X0 X2 X7 X9)))))) \wedge (k3\_finseq\_1 X4 = k3\_finseq\_1 X5)))))) \Rightarrow (k5\_binop\_1 \\
& X0 X3 (k1\_finsop\_1 X0 X4 X2) (k1\_finsop\_1 X0 X5 X2) = k1\_finsop\_1 X0 \\
& (k1\_finseqop X0 X0 X0 X3 X4 X5) X2))))))
\end{aligned} \tag{1}$$

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.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (((v1\_binop\_1 X1 X0) \wedge \\
& (v2\_binop\_1 X1 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 X0) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 X0) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X0) \Rightarrow (\forall X5. \\
& (m1\_subset\_1 X5 X0) \Rightarrow (k5\_binop\_1 X0 X1 (k5\_binop\_1 X0 X1 X2 X3) (k5\_binop\_1 \\
& X0 X1 X4 X5) = k5\_binop\_1 X0 X1 (k5\_binop\_1 X0 X1 X2 X4) (k5\_binop\_1 \\
& X0 X1 X3 X5))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 \\
& X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X0) X0)))))) \Rightarrow (m1\_subset\_1 (k4\_binop\_1 X0 X1) X0)
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow (\forall X2.(m2\_finseq\_1 \\
& X2 X0) \Rightarrow (\forall X3.(m2\_finseq\_1 X3 X0) \Rightarrow (((v1\_binop\_1 X1 X0) \wedge ( \\
& (v2\_binop\_1 X1 X0) \wedge (v1\_setwiseo X1 X0) \wedge (k3\_finseq\_1 X2 = k3\_finseq\_1 \\
& X3)))) \Rightarrow (k5\_binop\_1 X0 X1 (k1\_finsop\_1 X0 X2 X1) (k1\_finsop\_1 X0 \\
& X3 X1) = k1\_finsop\_1 X0 (k1\_finseqop X0 X0 X0 X1 X2 X3) X1))))))
\end{aligned}$$