

t10_setwop_2
(TMZQRRcasPVEf7fGcgAiXM9e4JC9C6M46u5)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ 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 $v1_setwiseo : \iota \Rightarrow \iota \Rightarrow o$ 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 $k6_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2. (m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3. (m1_subset_1 \\
& X3 X1) \Rightarrow (\forall X4. ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k2_zfmisc_1 \\
& X1 X1) X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X1 X1) X1)))) \Rightarrow (\forall X5. ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (\\
& k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k2_zfmisc_1 X1 X1) X1)))) \Rightarrow (\forall X6. ((v1_funct_1 X6) \wedge ((v1_funct_2 \\
& X6 X0 X1) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow \\
& (\forall X7. ((v1_funct_1 X7) \wedge ((v1_funct_2 X7 X0 X1) \wedge (m1_subset_1 \\
& X7 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (((v1_binop_1 X4 X1) \wedge \\
& ((v2_binop_1 X4 X1) \wedge (v1_setwiseo X4 X1) \wedge ((X3 = k4_binop_1 X1 X4) \wedge \\
& ((k5_binop_1 X1 X5 X3 X3 = X3) \wedge (\forall X8. (m1_subset_1 X8 X1) \Rightarrow (\\
& \forall X9. (m1_subset_1 X9 X1) \Rightarrow (\forall X10. (m1_subset_1 X10 \\
& X1) \Rightarrow (\forall X11. (m1_subset_1 X11 X1) \Rightarrow (k5_binop_1 X1 X4 (k5_binop_1 \\
& X1 X5 X8 X9) (k5_binop_1 X1 X5 X10 X11) = k5_binop_1 X1 X5 (k5_binop_1 \\
& X1 X4 X8 X10) (k5_binop_1 X1 X4 X9 X11)))))))))) \Rightarrow (k5_binop_1 X1 \\
& X5 (k7_setwiseo X0 X1 X4 X2 X6) (k7_setwiseo X0 X1 X4 X2 X7) = k7_setwiseo \\
& X0 X1 X4 X2 (k6_funcop_1 X1 X0 X5 X6 X7)))))))))
\end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) X0)))))) \Rightarrow (((v1_binop_1 X1 X0) \wedge \\ & (v2_binop_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 X0) \Rightarrow (\forall X4.(m1_subset_1 X4 X0) \Rightarrow (\forall X5. \\ & (m1_subset_1 X5 X0) \Rightarrow (k5_binop_1 X0 X1 (k5_binop_1 X0 X1 X2 X3) (k5_binop_1 \\ & X0 X1 X4 X5) = k5_binop_1 X0 X1 (k5_binop_1 X0 X1 X2 X4) (k5_binop_1 \\ & X0 X1 X3 X5)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (k2_zfmisc_1 \\ & X0 X0) X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0) X0)))))) \Rightarrow (m1_subset_1 (k4_binop_1 X0 X1) X0) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k5_finsub_1 X0)) \Rightarrow (\forall X3.((\\ & v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 X1 X1) X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X1 X1) X1)))))) \Rightarrow (\forall X4. \\ & ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \Rightarrow (\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 \\ & X5 X0 X1) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow \\ & (((v1_binop_1 X3 X1) \wedge ((v2_binop_1 X3 X1) \wedge (v1_setwiseo X3 X1))) \Rightarrow \\ & (k5_binop_1 X1 X3 (k7_setwiseo X0 X1 X3 X2 X4) (k7_setwiseo X0 X1 X3 \\ & X2 X5) = k7_setwiseo X0 X1 X3 X2 (k6_funcop_1 X1 X0 X3 X4 X5)))))) \end{aligned}$$