

t14_domain_1

(TMH5FEYT759DYqf3MfmSgmQZZpuNuaBkDtM)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & \forall X6. \forall X7. (k6_xtuple_0 X0 X1 X2 X3 \in k4_zfmisc_1 X4 X5 \\ & X6 X7) \Leftrightarrow ((X0 \in X4) \wedge ((X1 \in X5) \wedge ((X2 \in X6) \wedge (X3 \in X7)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \neg (X0 \in \\ & k4_zfmisc_1 X1 X2 X3 X4) \wedge (\forall X5. \forall X6. \forall X7. \forall X8. \\ & \neg (X5 \in X1) \wedge ((X6 \in X2) \wedge ((X7 \in X3) \wedge ((X8 \in X4) \wedge (X0 = k6_xtuple_0 X5 X6 \\ & X7 X8)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. (\neg v1_xboole_0 X3) \Rightarrow \\ & (\forall X4. (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)) \Rightarrow (\forall X5. \\ & \forall X6. \forall X7. \forall X8. (X4 = k6_xtuple_0 X5 X6 X7 X8) \Rightarrow \\ & ((k4_mcart_1 X0 X1 X2 X3 X4 = X5) \wedge ((k5_mcart_1 X0 X1 X2 X3 X4 = X6) \wedge \\ & (k6_mcart_1 X0 X1 X2 X3 X4 = X7) \wedge (k7_mcart_1 X0 X1 X2 X3 X4 = X8)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. (\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2. (\neg v1_xboole_0 X2) \Rightarrow (\forall X3. (\neg v1_xboole_0 X3) \Rightarrow \\ & (\forall X4. (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)) \Rightarrow (X4 = k6_xtuple_0 \\ & (k4_mcart_1 X0 X1 X2 X3 X4) (k5_mcart_1 X0 X1 X2 X3 X4) (k6_mcart_1 \\ & X0 X1 X2 X3 X4) (k7_mcart_1 X0 X1 X2 X3 X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1_xboole_0 X2) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow \\
& (\forall X4.(\neg v1_xboole_0 X4) \Rightarrow ((X0 = k4_zfmisc_1 X1 X2 X3 X4) \Leftrightarrow (\\
& \forall X5.(X5 \in X0) \Leftrightarrow (\exists X6.(m1_subset_1 X6 X1) \wedge (\exists X7. \\
& (m1_subset_1 X7 X2) \wedge (\exists X8.(m1_subset_1 X8 X3) \wedge (\exists X9. \\
& (m1_subset_1 X9 X4) \wedge (X5 = k6_xtuple_0 X6 X7 X8 X9))))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(\neg v1_xboole_0 \\
& X2) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow (\forall X4.(\neg v1_xboole_0 \\
& X4) \Rightarrow ((X0 \in k4_zfmisc_1 X1 X2 X3 X4) \Leftrightarrow (\exists X5.(m1_subset_1 X5 \\
& X1) \wedge (\exists X6.(m1_subset_1 X6 X2) \wedge (\exists X7.(m1_subset_1 \\
& X7 X3) \wedge (\exists X8.(m1_subset_1 X8 X4) \wedge (X0 = k6_xtuple_0 X5 X6 X7 \\
& X8))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& \forall X6.\forall X7.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
& ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge ((m1_subset_1 X4 X0) \wedge \\
& ((m1_subset_1 X5 X1) \wedge ((m1_subset_1 X6 X2) \wedge (m1_subset_1 X7 X3)))))) \Rightarrow \\
& (k5_domain_1 X0 X1 X2 X3 X4 X5 X6 X7 = k6_xtuple_0 X4 X5 X6 X7)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge (\neg v1_xboole_0 X3))) \Rightarrow \\
& (\neg v1_xboole_0 (k4_zfmisc_1 X0 X1 X2 X3))
\end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(\neg v1_xboole_0 \\
& X2) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow (\forall X4.(\neg v1_xboole_0 \\
& X4) \Rightarrow (\forall X5.(m1_subset_1 X5 (k4_zfmisc_1 X1 X2 X3 X4)) \Rightarrow ((X0 = \\
& k5_mcart_1 X1 X2 X3 X4 X5) \Leftrightarrow (\forall X6.(m1_subset_1 X6 X1) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 X2) \Rightarrow (\forall X8.(m1_subset_1 X8 X3) \Rightarrow (\forall X9. \\
& (m1_subset_1 X9 X4) \Rightarrow ((X5 = k5_domain_1 X1 X2 X3 X4 X6 X7 X8 X9) \Rightarrow (X0 = \\
& X7))))))))))
\end{aligned}$$