

t15_domain_1

(TMNmSu8jkFo4neTaHt7U4MyP65JZ3qmReAx)

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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 $k6_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_xtuple_0 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k7_mcart_1 X0 X1 \\ & X2 X3 X4 = k2_xtuple_0 X4) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k6_mcart_1 X0 X1 \\ & X2 X3 X4 = k5_xtuple_0 X4) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k5_mcart_1 X0 X1 \\ & X2 X3 X4 = k8_xtuple_0 X4) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\
& \quad \forall X6.\forall X7.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge \\
& \quad ((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge((m1_subset_1 X4 X0)\wedge \\
& ((m1_subset_1 X5 X1)\wedge((m1_subset_1 X6 X2)\wedge(m1_subset_1 X7 X3))))))\Rightarrow \\
& (k5_domain_1 X0 X1 X2 X3 X4 X5 X6 X7 = k6_xtuple_0 X4 X5 X6 X7)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\
& (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))))))\Rightarrow(k4_mcart_1 X0 X1 \\
& X2 X3 X4 = k7_xtuple_0 X4)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3_xtuple_0 X0)\Rightarrow(k6_xtuple_0 (k7_xtuple_0 X0) (k8_xtuple_0 \\
& X0) (k5_xtuple_0 X0) (k2_xtuple_0 X0) = X0)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\
& (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))))))\Rightarrow(m1_subset_1 (k7_mcart_1 \\
& X0 X1 X2 X3 X4) X3)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\
& (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))))))\Rightarrow(m1_subset_1 (k6_mcart_1 \\
& X0 X1 X2 X3 X4) X2)
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\
& (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))))))\Rightarrow(m1_subset_1 (k5_mcart_1 \\
& X0 X1 X2 X3 X4) X1)
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge((\neg v1_xboole_0 X3)\wedge \\
& (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))))))\Rightarrow(m1_subset_1 (k4_mcart_1 \\
& X0 X1 X2 X3 X4) X0)
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\
& ((\neg v1_xboole_0 X1)\wedge((\neg v1_xboole_0 X2)\wedge(\neg v1_xboole_0 X3))))\Rightarrow \\
& (\forall X4.(m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3))\Rightarrow(v3_xtuple_0 \\
& X4))
\end{aligned} \tag{12}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\forall X2.(\neg v1_xboole_0 \\
& X2)\Rightarrow(\forall X3.(\neg v1_xboole_0 X3)\Rightarrow(\forall X4.(\neg v1_xboole_0 \\
& X4)\Rightarrow(\forall X5.(m1_subset_1 X5 (k4_zfmisc_1 X1 X2 X3 X4))\Rightarrow((X0 = \\
& k6_mcart_1 X1 X2 X3 X4 X5)\Leftrightarrow(\forall X6.(m1_subset_1 X6 X1)\Rightarrow(\forall X7. \\
& (m1_subset_1 X7 X2)\Rightarrow(\forall X8.(m1_subset_1 X8 X3)\Rightarrow(\forall X9. \\
& (m1_subset_1 X9 X4)\Rightarrow((X5 = k5_domain_1 X1 X2 X3 X4 X6 X7 X8 X9)\Rightarrow(X0 = \\
& X8))))))))))
\end{aligned}$$