

t33_midsp_1

(TMXzESXKYyZvvLLkFnrcVyfw1a1qnPviQqe)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_midsp_1 : \iota \Rightarrow o$ be given. Let $l1_midsp_1 : \iota \Rightarrow o$ be given. Let $m1_midsp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0))) \Rightarrow ((k4_midsp_1 X0 X1 = k4_midsp_1 \\ & X0 X2) \Rightarrow (r2_midsp_1 X0 X1 X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k2_zfmisc_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X0))) \Rightarrow ((r2_midsp_1 X0 X1 X2) \Rightarrow (k4_midsp_1 \\ & X0 X1 = k4_midsp_1 X0 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & ((r1_midsp_1 X0 X1 X2 X3 X4) \Rightarrow (r2_midsp_1 X0 (k1_domain_1 (u1_struct_0 \\ & X0) (u1_struct_0 X0) X1 X2) (k1_domain_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0) X3 X4)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\
& X6 (u1_struct_0 X0)) \Rightarrow (((r1_midsp_1 X0 X1 X2 X3 X4) \wedge (r1_midsp_1 \\
& X0 X2 X5 X4 X6)) \Rightarrow (r1_midsp_1 X0 X1 X5 X3 X6))))))))) \Rightarrow
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge \\
& (l1_midsp_1 X0))) \wedge (m1_subset_1 X1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)))) \Rightarrow (k5_midsp_1 X0 X1 = k4_midsp_1 X0 X1)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k3_domain_1 X0 X1 \\
& X2 = k2_xtuple_0 X2)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_domain_1 X0 X1 \\
& X2 = k1_xtuple_0 X2)
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
& ((\neg v1_xboole_0 X1) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X1)))) \Rightarrow \\
& (k1_domain_1 X0 X1 X2 X3 = k4_tarSKI X2 X3)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\
& (u1_struct_0 X0))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.(l1_midsp_1 X0) \Rightarrow (l1_struct_0 X0) \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\
& X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (m1_subset_1 (k3_domain_1 \\
& X0 X1 X2) X1)
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k2_domain_1 X0 X1 X2) X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow(m1_subset_1 (k1_domain_1 X0 X1 X2 X3) (k2_zfmisc_1 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_midsp_1 X0)\wedge(l1_midsp_1 X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\Rightarrow(\forall X2.(m1_subset_1 X2 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\Rightarrow((r2_midsp_1 X0 X1 X2)\Leftrightarrow(r1_midsp_1 X0 (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X1) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X1) (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X2) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X2)))) \quad (14)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v2_midsp_1 X0)\wedge(l1_midsp_1 X0)))\Rightarrow(\forall X1.(m1_midsp_1 X1 X0)\Rightarrow(\forall X2.(m1_midsp_1 X2 X0)\Rightarrow(\forall X3.(m1_midsp_1 X3 X0)\Rightarrow(\forall X4.(m1_midsp_1 X4 X0)\Rightarrow(\neg(\exists X5.(m1_subset_1 X5 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\wedge(\exists X6.(m1_subset_1 X6 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\wedge((X1 = k5_midsp_1 X0 X5)\wedge(X2 = k5_midsp_1 X0 X6)\wedge((k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X5 = k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X6)\wedge(X3 = k5_midsp_1 X0 (k1_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X5) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X6))))))))\wedge((\exists X5.(m1_subset_1 X5 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\wedge(\exists X6.(m1_subset_1 X6 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0))))\wedge((X1 = k5_midsp_1 X0 X5)\wedge((X2 = k5_midsp_1 X0 X6)\wedge((k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X5 = k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X6)\wedge(X4 = k5_midsp_1 X0 (k1_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) (k2_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X5) (k3_domain_1 (u1_struct_0 X0) (u1_struct_0 X0) X6))))))))\wedge(X3\neq X4))))))$$