

t15_midsp_1
(TMJx9K9HcY9YCogui1WErgEgWZJDMjEvqHY)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_midsp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v2_midsp_1 X0) \wedge (l1_midsp_1 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k3_midsp_1 X0 X1 X2 = k1_midsp_1 X0 X1 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k1_midsp_1 X0 X1 X2) (u1_struct_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow ((r1_midsp_1 X0 X1 X2 X3 X4) \Leftrightarrow (k3_midsp_1 X0 X1 X4 = k3_midsp_1 X0 X2 X3))))))) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \Rightarrow ((v2_midsp_1 \\
& \quad X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& ((k1_midsp_1 X0 X1 X1 = X1) \wedge ((k1_midsp_1 X0 X1 X2 = k1_midsp_1 X0 X2 \\
& \quad X1) \wedge ((k1_midsp_1 X0 (k1_midsp_1 X0 X1 X2) (k1_midsp_1 X0 X3 X4) = \\
& \quad k1_midsp_1 X0 (k1_midsp_1 X0 X1 X3) (k1_midsp_1 X0 X2 X4)) \wedge (\exists X5. \\
& \quad (m1_subset_1 X5 (u1_struct_0 X0)) \wedge (k1_midsp_1 X0 X5 X1 = X2))))))))) \\
& \hspace{15em} (4)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 \\
& \quad X0) \wedge (l1_midsp_1 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 \\
& \quad X2 (u1_struct_0 X0)))) \Rightarrow (k3_midsp_1 X0 X1 X2 = k3_midsp_1 X0 X2 X1) \\
& \hspace{15em} (5)
\end{aligned}$$

Theorem 1

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