

t32_midsp_2

(TMb2A5ZXHjuax5Pz2WGLu2kJ4yGckJE1kpZ)

October 27, 2020

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 $v4_midsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_midsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $u2_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_midsp_2 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v1_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \wedge \\ & (l1_midsp_2 X1 X0)) \Rightarrow ((v1_funct_1 (u2_midsp_2 X0 X1)) \wedge ((v1_funct_2 \\ & (u2_midsp_2 X0 X1) (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 \\ & X0)) (u1_struct_0 (u1_midsp_2 X0 X1))) \wedge (m1_subset_1 (u2_midsp_2 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) \\ & (u1_struct_0 X0)) (u1_struct_0 (u1_midsp_2 X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \wedge \\ & (l1_midsp_2 X1 X0)) \Rightarrow ((\neg v2_struct_0 (u1_midsp_2 X0 X1)) \wedge (l2_algstr_0 \\ & (u1_midsp_2 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l1_midsp_1 X0) \Rightarrow (l1_struct_0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l2_algstr_0 X1)) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (k2_zfmisc_1 X0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r1_midsp_2 \\
& X0 X1 X2) \Leftrightarrow ((\forall X3.(m1_subset_1 X3 X0) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 (u1_struct_0 X1)) \Rightarrow (\exists X5.(m1_subset_1 X5 X0) \wedge (k2_binop_1 \\
& X0 X0 (u1_struct_0 X1) X2 X3 X5 = X4)))) \wedge ((\forall X3.(m1_subset_1 \\
& X3 X0) \Rightarrow (\forall X4.(m1_subset_1 X4 X0) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 X0) \Rightarrow ((k2_binop_1 X0 X0 (u1_struct_0 X1) X2 X3 X4 = k2_binop_1 X0 \\
& X0 (u1_struct_0 X1) X2 X3 X5) \Rightarrow (X4 = X5)))))) \wedge (\forall X3.(m1_subset_1 \\
& X3 X0) \Rightarrow (\forall X4.(m1_subset_1 X4 X0) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 X0) \Rightarrow (k1_algstr_0 X1 (k2_binop_1 X0 X0 (u1_struct_0 X1) X2 X3 X4) \\
& (k2_binop_1 X0 X0 (u1_struct_0 X1) X2 X4 X5) = k2_binop_1 X0 X0 (u1_struct_0 \\
& X1) X2 X3 X5)))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\
& X0))) \Rightarrow (\forall X1.(l1_midsp_2 X1 X0) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\
& X0)) \Rightarrow (k9_midsp_2 X0 X1 X2 X3 = k2_binop_1 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (u1_struct_0 (u1_midsp_2 X0 X1)) (u2_midsp_2 X0 X1) X2 X3))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \Rightarrow (\forall X1. \\
& (l1_midsp_2 X1 X0) \Rightarrow ((v4_midsp_2 X1 X0) \Leftrightarrow ((v2_midsp_2 (u1_midsp_2 \\
& X0 X1)) \wedge ((v3_rlvect_1 (u1_midsp_2 X0 X1)) \wedge ((v4_rlvect_1 (u1_midsp_2 \\
& X0 X1)) \wedge ((v13_algstr_0 (u1_midsp_2 X0 X1)) \wedge ((v2_rlvect_1 (u1_midsp_2 \\
& X0 X1)) \wedge ((v1_midsp_2 (u2_midsp_2 X0 X1) X0 (u1_midsp_2 X0 X1)) \wedge \\
& (r1_midsp_2 (u1_struct_0 X0) (u1_midsp_2 X0 X1) (u2_midsp_2 X0 \\
& X1)))))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\ & X0))) \Rightarrow (\forall X1.((v4_midsp_2 X1 X0) \wedge (l1_midsp_2 X1 X0)) \Rightarrow ((\\ & \forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 (u1_midsp_2 X0 X1))) \Rightarrow (\exists X4.(m1_subset_1 \\ & X4 (u1_struct_0 X0)) \wedge (k9_midsp_2 X0 X1 X2 X4 = X3)))))) \wedge ((\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & ((k9_midsp_2 X0 X1 X2 X3 = k9_midsp_2 X0 X1 X2 X4) \Rightarrow (X3 = X4)))))) \wedge (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & (k1_algstr_0 (u1_midsp_2 X0 X1) (k9_midsp_2 X0 X1 X2 X3) (k9_midsp_2 \\ & X0 X1 X3 X4) = k9_midsp_2 X0 X1 X2 X4)))))) \end{aligned}$$