

t15_msualg_6

(TMTE9svaUU6j1FGQbpvF69fSM9h85DEPwYX)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_rewrite1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_msualg_6 : \iota \Rightarrow \iota$ be given. Let $m1_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $v1_funcop_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_msualg_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_msualg_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_funct_7 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_msualg_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the

following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v1_msualg_6 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_rewrite1 X4 (k3_msualg_6 \\
& X0)) \Rightarrow (\forall X5.((v1_relat_1 X5) \wedge ((v1_funct_1 X5) \wedge ((v1_finseq_1 \\
& X5) \wedge (v1_funcop_1 X5)))) \Rightarrow (((k3_finseq_1 X4 = k2_nat_1 (k3_finseq_1 \\
& X5) np_1) \wedge ((X2 = k1_funct_1 X4 np_1) \wedge ((X3 = k1_funct_1 X4 (k3_finseq_1 \\
& X4)) \wedge (\forall X6.(m1_subset_1 X6 k5_numbers) \Rightarrow (\forall X7.((\\
& v1_relat_1 X7) \wedge (v1_funct_1 X7)) \Rightarrow (\forall X8.(m1_subset_1 X8 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X9.(m1_subset_1 X9 (u1_struct_0 X0)) \Rightarrow \\
& (((X6 \in k4_finseq_1 X5) \wedge ((X7 = k1_funct_1 X5 X6) \wedge ((X8 = k1_funct_1 \\
& X4 X6) \wedge (X9 = k1_funct_1 X4 (k2_nat_1 X6 np_1)))))) \Rightarrow (r1_msualg_6 \\
& X0 X8 X9 X1 X7)))))) \Rightarrow (((v1_funct_1 (k4_funct_7 (k1_funct_1 \\
& (u3_msualg_1 X0 X1) X2) X5)) \wedge ((v1_funct_2 (k4_funct_7 (k1_funct_1 \\
& (u3_msualg_1 X0 X1) X2) X5) (k1_funct_1 (u3_msualg_1 X0 X1) X2) (\\
& k1_funct_1 (u3_msualg_1 X0 X1) X3)) \wedge (m1_subset_1 (k4_funct_7 \\
& (k1_funct_1 (u3_msualg_1 X0 X1) X2) X5) (k1_zfmisc_1 (k2_zfmisc_1 \\
& (k1_funct_1 (u3_msualg_1 X0 X1) X2) (k1_funct_1 (u3_msualg_1 X0 \\
& X1) X3)))))) \wedge ((X5 \neq k1_xboole_0) \Rightarrow ((k1_funct_1 (u3_msualg_1 X0 \\
& X1) X2 \neq k1_xboole_0) \wedge (k1_funct_1 (u3_msualg_1 X0 X1) X3 \neq k1_xboole_0))))))))) \\
& \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& X3 (u1_struct_0 X0)) \Rightarrow ((r1_rewrite1 (k3_msualg_6 X0) X2 X3) \Rightarrow (\forall X4. \\
& ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (k1_funct_1 (u3_msualg_1 X0 \\
& X1) X2) (k1_funct_1 (u3_msualg_1 X0 X1) X3)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k1_funct_1 (u3_msualg_1 X0 X1) X2) (k1_funct_1 (\\
& u3_msualg_1 X0 X1) X3)))))) \Rightarrow ((m2_msualg_6 X4 X0 X1 X2 X3) \Leftrightarrow (\exists X5. \\
& (m1_rewrite1 X5 (k3_msualg_6 X0)) \wedge (\exists X6.((v1_relat_1 X6) \wedge \\
& ((v1_funct_1 X6) \wedge ((v1_finseq_1 X6) \wedge (v1_funcop_1 X6)))) \wedge ((X4 = \\
& k4_funct_7 (k1_funct_1 (u3_msualg_1 X0 X1) X2) X6) \wedge ((k3_finseq_1 \\
& X5 = k2_nat_1 (k3_finseq_1 X6) np_1) \wedge ((X2 = k1_funct_1 X5 np_1) \wedge \\
& ((X3 = k1_funct_1 X5 (k3_finseq_1 X5)) \wedge (\forall X7.(m1_subset_1 \\
& X7 k5_numbers) \Rightarrow (\forall X8.((v1_relat_1 X8) \wedge (v1_funct_1 X8)) \Rightarrow \\
& (\forall X9.(m1_subset_1 X9 (u1_struct_0 X0)) \Rightarrow (\forall X10.(\\
& m1_subset_1 X10 (u1_struct_0 X0)) \Rightarrow (((X7 \in k4_finseq_1 X6) \wedge ((X8 = \\
& k1_funct_1 X6 X7) \wedge ((X9 = k1_funct_1 X5 X7) \wedge (X10 = k1_funct_1 X5 (\\
& k2_nat_1 X7 np_1)))))) \Rightarrow (r1_msualg_6 X0 X9 X10 X1 X8))))))))) \\
& \tag{2}
\end{aligned}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 X0))) \Rightarrow (\forall X1.(l3_msualg_1 X1 X0) \Rightarrow ((v4_msualg_1 X1 X0) \Rightarrow (v1_msualg_6 X1 X0))) \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 X0))) \Rightarrow (\forall X1.((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r1_rewrite1 (k3_msualg_6 X0) X2 X3) \Rightarrow (\forall X4. \\ & (m1_rewrite1 X4 (k3_msualg_6 X0)) \Rightarrow (\forall X5.((v1_relat_1 X5) \wedge \\ & ((v1_funct_1 X5) \wedge ((v1_finseq_1 X5) \wedge (v1_funcop_1 X5)))))) \Rightarrow (((\\ & k3_finseq_1 X4 = k2_nat_1 (k3_finseq_1 X5) np_1) \wedge ((X2 = k1_funct_1 X4 np_1) \wedge ((X3 = k1_funct_1 X4 (k3_finseq_1 X4)) \wedge (\forall X6.(\\ & m1_subset_1 X6 k5_numbers) \Rightarrow (\forall X7.((v1_relat_1 X7) \wedge (v1_funct_1 X7)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow (\forall X9. \\ & (m1_subset_1 X9 (u1_struct_0 X0)) \Rightarrow (((X6 \in k4_finseq_1 X5) \wedge ((X7 = k1_funct_1 X5 X6) \wedge ((X8 = k1_funct_1 X4 X6) \wedge (X9 = k1_funct_1 X4 (k2_nat_1 X6 np_1)))))) \Rightarrow (r1_msualg_6 X0 X8 X9 X1 X7)))))) \Rightarrow (m2_msualg_6 \\ & (k4_funct_7 (k1_funct_1 (u3_msualg_1 X0 X1) X2) X5) X0 X1 X2 X3)))))) \end{aligned}$$