

t55_transgeo (TMGiwf- vAWUS3vmHTHSkeHaLD6vjxZMmq9XP)

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Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v2_analoaf : \iota \Rightarrow o$ be given. Let $l1_analoaf : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_transgeo : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (((r1_diraf X0 \\
& X2 X1 X4) \wedge ((r3_diraf X0 X1 X3 X5) \wedge (r2_diraf X0 X2 X3 X5 X4)) \Rightarrow ((r3_diraf \\
& X0 X1 X2 X3) \vee (r1_diraf X0 X3 X1 X5))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\
& X0))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)) \wedge ((v3_funct_2 X1 (u1_struct_0 X0) (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0))))))) \Rightarrow ((v4_transgeo X1 X0) \Leftrightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (r2_diraf X0 X2 X3 (k3_funct_2 (u1_struct_0 \\
& X0) (u1_struct_0 X0) X1 X2) (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 \\
& X0) X1 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& ((r2_diraf X0 X1 X2 X3 X4) \Rightarrow ((r2_diraf X0 X1 X2 X4 X3) \wedge ((r2_diraf X0 \\
& X2 X1 X3 X4) \wedge ((r2_diraf X0 X2 X1 X4 X3) \wedge ((r2_diraf X0 X3 X4 X1 X2) \wedge (\\
& (r2_diraf X0 X3 X4 X2 X1) \wedge ((r2_diraf X0 X4 X3 X1 X2) \wedge (r2_diraf X0 X4 \\
& X3 X2 X1))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1_analoaf X0) \Rightarrow (l1_struct_0 X0) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\
& (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0)) \Rightarrow (m1_subset_1 (\\
& k3_funct_2 X0 X1 X2 X3) X1)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& ((r3_diraf X0 X1 X2 X3) \Leftrightarrow (r2_diraf X0 X1 X2 X1 X3))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((\neg v7_struct_0 X0) \Rightarrow (\neg v2_struct_0 X0)) \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\
& X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 \\
& X4 (u1_struct_0 X0) (u1_struct_0 X0)) \wedge ((v3_funct_2 X4 (u1_struct_0 \\
& X0) (u1_struct_0 X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& (u1_struct_0 X0) (u1_struct_0 X0)))))) \Rightarrow (((v4_transgeo X4 X0) \wedge \\
& ((k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X0) X4 X1 = X1) \wedge (r1_diraf \\
& X0 X2 X1 (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X0) X4 X2))) \Rightarrow \\
& ((r3_diraf X0 X1 X2 X3) \vee (r1_diraf X0 X3 X1 (k3_funct_2 (u1_struct_0 \\
& X0) (u1_struct_0 X0) X4 X3))))))
\end{aligned}$$