

t79\_transgeo  
(TMFmS2Ua86B2QFu4HLCTktE8SYCQL7Sf7LG)

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Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_diraf : \iota \Rightarrow o$  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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_transgeo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_transgeo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v6\_transgeo X1 X0) \Rightarrow ((v7\_transgeo \\
& X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (r2\_analoaf X0 X2 (k3\_funct\_2 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2) X3 (k3\_funct\_2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0) X1 X3))))))))) \Rightarrow (1)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
& X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5. \\
& (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (((r2\_analoaf X0 X1 X2 X3 X4) \wedge \\
& ((r2\_analoaf X0 X1 X2 X3 X5) \wedge ((r2\_analoaf X0 X1 X3 X2 X4) \wedge (r2\_analoaf \\
& X0 X1 X3 X2 X5)))) \Rightarrow ((r1\_aff\_1 X0 X1 X2 X3) \vee (X4 = X5)))))) \Rightarrow (2)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v6\_transgeo X1 X0) \Leftrightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X0)) \Rightarrow (r2\_analoaf X0 X2 X3 (k3\_funct\_2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0) X1 X2) (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0) X1 X3))))))
\end{aligned} \tag{3}$$

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.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v7\_transgeo X1 X0) \Leftrightarrow ((v6\_transgeo \\
& X1 X0) \wedge ((r2\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 (k6\_partfun1 \\
& (u1\_struct\_0 X0))) \vee (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)) \Rightarrow (X2 \neq k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2))))))
\end{aligned} \tag{7}$$

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**

$$\begin{aligned} & \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\ & X3 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X3 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (\forall X4.((v1\_funct\_1 \\ & X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 \\ & X4 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (((v7\_transgeo \\ & X3 X0) \wedge ((v7\_transgeo X4 X0) \wedge (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0) X3 X1 = k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X1))) \Rightarrow \\ & ((r1\_aff\_1 X0 X1 (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) \\ & X3 X1) X2) \vee (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X3 X2 = \\ & k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4 X2)))))) \end{aligned}$$