

# l31\_transgeo

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_transgeo : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $r3\_relat\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_analoaf : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. (\neg v1\_xboole\_0 \\ X2) \Rightarrow (\neg(X0 \in k2\_zfmisc\_1 X1 X2) \wedge (\forall X3. (m1\_subset\_1 X3 X1) \Rightarrow \\ (\forall X4. (m1\_subset\_1 X4 X2) \Rightarrow (X0 \neq k4\_tarski X3 X4)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ ((\neg v1\_xboole\_0 X1) \wedge ((m1\_subset\_1 X2 X0) \wedge (m1\_subset\_1 X3 X1)))) \Rightarrow \\ (k1\_domain\_1 X0 X1 X2 X3 = k4\_tarski X2 X3) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_analoaf X0) \Rightarrow (m1\_subset\_1 (u1\_analoaf X0) (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \\ (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (l1\_analoaf X0) \Rightarrow (l1\_struct\_0 X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & ((\neg v1\_xboole\_0 X1)\wedge((m1\_subset\_1 X2 X0)\wedge(m1\_subset\_1 X3 X1))))\Rightarrow \\ & (m1\_subset\_1 (k1\_domain\_1 X0 X1 X2 X3) (k2\_zfmisc\_1 X0 X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_analoaf X0))\Rightarrow((v1\_transgeo \\ & X0)\Leftrightarrow((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow \\ & (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0))\Rightarrow(\forall X6.(m1\_subset\_1 \\ & X6 (u1\_struct\_0 X0))\Rightarrow(((r2\_analoaf X0 X1 X2 X5 X6)\wedge(r2\_analoaf \\ & X0 X5 X6 X3 X4))\Rightarrow((X5 = X6)\vee(r2\_analoaf X0 X1 X2 X3 X4))))))))))\wedge(( \\ & \forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0))\Rightarrow(r2\_analoaf X0 X1 X1 X2 X3))))))\wedge((\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4. \\ & (m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow((r2\_analoaf X0 X1 X2 X3 X4)\Rightarrow \\ & (r2\_analoaf X0 X3 X4 X1 X2))))))\wedge(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(r2\_analoaf \\ & X0 X1 X2 X1 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.(r3\_relat\_2 X0 X1)\Leftrightarrow(\forall X2. \\ & \forall X3.((X2 \in X1)\wedge((X3 \in X1)\wedge(k4\_tarSKI X2 X3 \in X0)))\Rightarrow(k4\_tarSKI \\ & X3 X2 \in X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_analoaf X0))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow \\ & (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow((r2\_analoaf X0 \\ & X1 X2 X3 X4)\Leftrightarrow(k1\_domain\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (k1\_domain\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2) (k1\_domain\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0) X3 X4) \in u1\_analoaf X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \end{aligned} \quad (11)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_transgeo X0) \wedge (l1\_analoaf X0))) \Rightarrow (r3\_relat\_2 (u1\_analoaf X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))$$