

t52\_transgeo  
(TMQwboXpfX8LBbG23wr6Li4EZVkZ1kadxsH)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_transgeo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v4\_transgeo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. k2\_funct\_1 (k4\_relat\_1 X0) = k4\_relat\_1 X0 \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v2\_analoaf X0) \wedge (l1\_analoaf \\ & X0))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v4\_transgeo X1 X0) \Rightarrow (v4\_transgeo \\ & (k2\_funct\_2 (u1\_struct\_0 X0) X1) X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 X0) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 X2 X0) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge \\ & ((v1\_funct\_2 X3 X0 X0) \wedge ((v3\_funct\_2 X3 X0 X0) \wedge (m1\_subset\_1 X3 ( \\ & k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \Rightarrow ((k3\_funct\_2 X0 X0 X3 X1 = \\ & X2) \Leftrightarrow (k3\_funct\_2 X0 X0 (k2\_funct\_2 X0 X3) X2 = X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 X0)\wedge \\ & ((v3\_funct\_2 X1 X0 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0))))))\Rightarrow(k2\_funct\_2 X0 X1 = k2\_funct\_1 X1) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_relat\_1 (k4\_relat\_1 X0))\wedge((v4\_relat\_1 (k4\_relat\_1 \\ & X0) X0)\wedge((v1\_funct\_1 (k4\_relat\_1 X0))\wedge(v1\_partfun1 (k4\_relat\_1 \\ & X0) X0))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l1\_analoaf X0)\Rightarrow(l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_partfun1 (k6\_partfun1 X0) X0)\wedge(m1\_subset\_1 (k6\_partfun1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 X0 X0)\wedge \\ & ((v3\_funct\_2 X1 X0 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X0))))))\Rightarrow((v1\_funct\_1 (k2\_funct\_2 X0 X1))\wedge((v1\_funct\_2 (k2\_funct\_2 \\ & X0 X1) X0 X0)\wedge((v3\_funct\_2 (k2\_funct\_2 X0 X1) X0 X0)\wedge(m1\_subset\_1 \\ & (k2\_funct\_2 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v2\_analoaf X0) \wedge (l1\_analoaf \\
& X0))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v5\_transgeo X1 X0) \Leftrightarrow ((v4\_transgeo \\
& X1 X0) \wedge ((r2\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 (k6\_partfun1 \\
& (u1\_struct\_0 X0))) \vee (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)) \Rightarrow (X2 \neq k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow ((v2\_struct\_0 X0) \Rightarrow (v7\_struct\_0 X0)) \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v1\_partfun1 X2 X0) \Rightarrow (v1\_funct\_2 X2 X0 X1))
\end{aligned} \tag{14}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v2\_analoaf X0) \wedge (l1\_analoaf \\
& X0))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)) \wedge ((v3\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v5\_transgeo X1 X0) \Rightarrow (v5\_transgeo \\
& (k2\_funct\_2 (u1\_struct\_0 X0) X1) X0)))
\end{aligned}$$