t7_transgeo (TMP-bubCmsj76Wwg4TQYmZeBCPduwRcREXQH)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ 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 $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_transgeo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v2\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_funct\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_transgeo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (((v2\_funct\_1\ X0) \wedge (v2\_funct\_1\ X1)) \Rightarrow (k2\_funct\_1\ (k3\_relat\_1\ X0\ X1) = k3\_relat\_1\ (k2\_funct\_1\ X1)\ (k2\_funct\_1\ X0)))) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v2\_funct\_1\ X0) \Rightarrow (k2\_funct\_1\ (k2\_funct\_1\ X0) = X0)) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(v1\_relat\_1\ X1) \Rightarrow (\forall X2.(v1\_relat\_1\ X2) \Rightarrow (k3\_relat\_1\ (k3\_relat\_1\ X0\ X1)\ X2 = k3\_relat\_1\ X0\ (k3\_relat\_1\ X1\ X2)))) \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(k2\_funct\_2\ X0\ X1 = k2\_funct\_1\ X1) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X0)\wedge((v3\_funct\_2\ X2\ X0\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))))\Rightarrow(k1\_transgeo\ X0\ X1\ X2 = k3\_relat\_1\ X1\ X2) \tag{6}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v2\_funct\_1\ X0)))\Rightarrow((v1\_relat\_1\ (k2\_funct\_1\ X0))\wedge((v1\_funct\_1\ (k2\_funct\_1\ X0))\wedge(v2\_funct\_1\ (k2\_funct\_1\ X0)))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k3\_relat\_1\ X0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X0)\wedge((v3\_funct\_2\ X2\ X0\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))))\Rightarrow((v1\_funct\_1\ (k2\_transgeo\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k2\_transgeo\ X0\ X1\ X2)\ X0\ X0)\wedge((v3\_funct\_2\ (k2\_transgeo\ X0\ X1\ X2)\ X0\ X0)\wedge(m1\_subset\_1\ (k2\_transgeo\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow((v1\_funct\_1\ (k2\_funct\_2\ X0\ X1))\wedge((v1\_funct\_2\ (k2\_funct\_2\ X0\ X1)\ X0\ X0)\wedge((v3\_funct\_2\ (k2\_funct\_2\ X0\ X1)\ X0\ X0)\wedge(m1\_subset\_1\ (k2\_funct\_2\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow((v1\_relat\_1\ (k2\_funct\_1\ X0))\wedge(v1\_funct\_1\ (k2\_funct\_1\ X0))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X0)\wedge((v3\_funct\_2\ X2\ X0\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))))\Rightarrow((v1\_funct\_1\ (k1\_transgeo\ X0\ X1\ X2))\wedge((v1\_funct\_2\ (k1\_transgeo\ X0\ X1\ X2)\ X0\ X0)\wedge((v3\_funct\_2\ (k1\_transgeo\ X0\ X1\ X2)\ X0\ X0)\wedge(m1\_subset\_1\ (k1\_transgeo\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))) \tag{12}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X0)\wedge((v3\_funct\_2\ X2\ X0\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(k2\_transgeo\ X0\ X1\ X2 = k1\_transgeo\ X0\ (k2\_funct\_2\ X0\ X2)\ (k1\_transgeo\ X0\ X1\ X2)))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(((v1\_funct\_1\ X2)\wedge(v3\_funct\_2\ X2\ X0\ X1))\Rightarrow((v1\_funct\_1\ X2)\wedge((v2\_funct\_1\ X2)\wedge(v2\_funct\_2\ X2\ X1)))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{15}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ X0\ X0)\wedge((v3\_funct\_2\ X1\ X0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X0)\wedge((v3\_funct\_2\ X2\ X0\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\Rightarrow(r2\_funct\_2\ X0\ X0\ (k2\_transgeo\ X0\ (k2\_funct\_2\ X0\ X1)\ X2)\ (k2\_funct\_2\ X0\ (k2\_transgeo\ X0\ X1\ X2))))))$$