

t17_transgeo
(TMGz3wsXSyJjpG4GR2Nv6ysmdv4gu2if7a2)

October 27, 2020

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 $r2_transgeo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_1 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X0) \wedge ((v3_funct_2 \\ & X2 X0 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ & ((k3_funct_2 X0 X0 X2 (k3_funct_2 X0 X0 (k2_funct_2 X0 X2) X1) = X1) \wedge \\ & (k3_funct_2 X0 X0 (k2_funct_2 X0 X2) (k3_funct_2 X0 X0 X2 X1) = X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow \\ & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X0) \wedge ((v3_funct_2 \\ & X2 X0 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ & (\exists X3.(m1_subset_1 X3 X0) \wedge (k3_funct_2 X0 X0 X2 X3 = X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 X0) \wedge \\ & ((v3_funct_2 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0)))))) \Rightarrow (k2_funct_2 X0 X1 = k2_funct_1 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 X0 X0) \wedge \\ & ((v3_funct_2 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X0)))))) \Rightarrow ((v1_funct_1 (k2_funct_2 X0 X1)) \wedge ((v1_funct_2 (k2_funct_2 \\ & X0 X1) X0 X0) \wedge ((v3_funct_2 (k2_funct_2 X0 X1) X0 X0) \wedge (m1_subset_1 \\ & (k2_funct_2 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 X0) \wedge ((v3_funct_2 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) (k2_zfmisc_1 X0 X0)))) \Rightarrow ((r2_transgeo \\
& X0 X1 X2) \Leftrightarrow (\forall X3.(m1_subset_1 X3 X0) \Rightarrow (\forall X4.(m1_subset_1 \\
& X4 X0) \Rightarrow (\forall X5.(m1_subset_1 X5 X0) \Rightarrow (\forall X6.(m1_subset_1 \\
& X6 X0) \Rightarrow ((k4_tarski (k4_tarski X3 X4) (k4_tarski X5 X6) \in X2) \Leftrightarrow (k4_tarski \\
& (k4_tarski (k3_funct_2 X0 X0 X1 X3) (k3_funct_2 X0 X0 X1 X4)) (k4_tarski \\
& (k3_funct_2 X0 X0 X1 X5) (k3_funct_2 X0 X0 X1 X6)) \in X2)))))))))) \\
& \hspace{15em} (5)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\
& (v1_funct_2 X1 X0 X0) \wedge ((v3_funct_2 X1 X0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X0 X0)))))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) (k2_zfmisc_1 X0 X0)))) \Rightarrow ((r2_transgeo \\
& X0 X1 X2) \Rightarrow (r2_transgeo X0 (k2_funct_2 X0 X1) X2)))
\end{aligned}$$