

l33_metrizts

(TMTvs69wthg3LXVJyexxhrr2f8DQBzCrQa5)

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Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $v1_metrizts : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_tops_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_setfam_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_ordinal1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow ((v1_metrizts \\ & X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow (\neg(v1_tops_2 X1 X0) \wedge ((m1_setfam_1 X1 (u1_struct_0 X0)) \wedge \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow (\neg(r1_tarski X2 X1) \wedge ((m1_setfam_1 X2 (u1_struct_0 X0)) \wedge \\ & (v4_card_3 X2)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v4_card_3 X0) \Leftrightarrow (r1_ordinal1 (k1_card_1 X0) k4_ordinal1) \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow ((v1_metrizts \\ & X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow (\neg(v1_tops_2 X1 X0) \wedge ((m1_setfam_1 X1 (u1_struct_0 X0)) \wedge \\ & (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))) \Rightarrow (\neg(r1_tarski X2 X1) \wedge ((m1_setfam_1 X2 (u1_struct_0 X0)) \wedge \\ & (r1_ordinal1 (k1_card_1 X2) k4_ordinal1)))))))))) \end{aligned}$$