

t79_tsep_1 (TMM8g1ivNAMmsSAFYohAHDkAWDkgXUMrMawD)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r2_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_pre_topc\ X1\ X0) \Rightarrow (\forall X2.(m1_pre_topc\ X2\ X0) \Rightarrow ((r1_tarski \\ & (u1_struct_0\ X1)\ (u1_struct_0\ X2)) \Leftrightarrow (m1_pre_topc\ X1\ X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v2_pre_topc\ X0) \wedge (l1_pre_topc\ X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X2. \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow ((r1_tarski \\ & X1\ X2) \Rightarrow (r2_tsep_1\ X0\ X1\ X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc\ X0) \Rightarrow (\forall X1.(m1_pre_topc\ X1\ X0) \Rightarrow \\ & (\forall X2.(m1_pre_topc\ X2\ X0) \Rightarrow ((r4_tsep_1\ X0\ X1\ X2) \Leftrightarrow (\forall X3. \\ & (m1_subset_1\ X3\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (\forall X4. \\ & (m1_subset_1\ X4\ (k1_zfmisc_1\ (u1_struct_0\ X0))) \Rightarrow (((X3 = u1_struct_0 \\ & X1) \wedge (X4 = u1_struct_0\ X2)) \Rightarrow (r2_tsep_1\ X0\ X3\ X4)))))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0) \wedge ((v2_pre_topc\ X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0\ X1) \wedge (m1_pre_topc\ X1\ X0)) \Rightarrow (\\ & \forall X2.((\neg v2_struct_0\ X2) \wedge (m1_pre_topc\ X2\ X0)) \Rightarrow ((m1_pre_topc \\ & X1\ X2) \Rightarrow (r4_tsep_1\ X0\ X1\ X2)))) \end{aligned}$$