

t10_tsep_2 (TMYYAWoKKvn- NtUjR56tViaNQe2cvAErVERH)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r2_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tops_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $r1_tsep_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ &X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ &X0))) \Rightarrow (\forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ &X0))) \Rightarrow ((r2_tsep_2 X0 X1 X2) \Rightarrow ((r2_tsep_2 X0 (k2_pre_topc X0 X1) \\ &(k1_tops_1 X0 X2)) \wedge (r2_tsep_2 X0 (k1_tops_1 X0 X1) (k2_pre_topc \\ &X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\forall X1. \\ &(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ &(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((X1 = k3_subset_1 \\ &(u1_struct_0 X0) X2) \vee (X2 = k3_subset_1 (u1_struct_0 X0) X1)) \Rightarrow (\\ &r1_tsep_2 X0 X1 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((\neg v2_struct_0 X0) \wedge (l1_struct_0 \\ &X0)) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (m1_subset_1 \\ &X2 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow ((r2_tsep_2 X0 X1 X2) \Leftrightarrow (r1_tsep_2 \\ &X0 X1 X2)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(m1_subset_1 (k3_subset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\Rightarrow((r2_tsep_2 X0 (k2_pre_topc X0 X1) (k1_tops_1 X0 (k3_subset_1 \\ & (u1_struct_0 X0) X1)))\wedge((r2_tsep_2 X0 (k2_pre_topc X0 (k3_subset_1 \\ & (u1_struct_0 X0) X1)) (k1_tops_1 X0 X1))\wedge((r2_tsep_2 X0 (k1_tops_1 \\ & X0 X1) (k2_pre_topc X0 (k3_subset_1 (u1_struct_0 X0) X1)))\wedge(r2_tsep_2 \\ & X0 (k1_tops_1 X0 (k3_subset_1 (u1_struct_0 X0) X1)) (k2_pre_topc \\ & X0 X1)))))) \end{aligned}$$