

t44_tsep_2 (TM-
PUEgMU7tK5sdCRwHv6gLMLFKZES6Q3kbbk)

October 27, 2020

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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_tsep_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_connsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge (m1_pre_topc X3 X0)) \Rightarrow (\\ & \forall X4.(m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & \forall X5.(m1_subset_1 X5 (k1_zfmisc_1 (u1_struct_0 X3))) \Rightarrow (\\ & ((X4 = X1) \wedge (X5 = X2)) \Rightarrow ((r1_connsp_1 X0 X1 X2) \Leftrightarrow (r1_connsp_1 X3 X4 \\ & X5)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (m1_subset_1 (u1_struct_0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (l1_pre_topc X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow \\ & (\forall X2.(m1_pre_topc X2 X0) \Rightarrow ((r3_tsep_1 X0 X1 X2) \Leftrightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X4. \\ & (m1_subset_1 X4 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((X3 = u1_struct_0 \\ & X1) \wedge (X4 = u1_struct_0 X2)) \Rightarrow (r1_connsp_1 X0 X3 X4))))))))) \end{aligned} \tag{4}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (m1_pre_topc X1 X0)) \Rightarrow (\\ & \forall X2.(m1_pre_topc X2 X0) \Rightarrow (\forall X3.(m1_pre_topc X3 X0) \Rightarrow \\ & (\forall X4.(m1_pre_topc X4 X1) \Rightarrow (\forall X5.(m1_pre_topc X5 X1) \Rightarrow \\ & ((u1_struct_0 X2 = u1_struct_0 X4) \wedge (u1_struct_0 X3 = u1_struct_0 \\ & X5)) \Rightarrow ((r3_tsep_1 X0 X2 X3) \Leftrightarrow (r3_tsep_1 X1 X4 X5))))))))) \end{aligned}$$