

t25_tsp_2 (TMGaKf- PCpHq7LCqrjdfZLMT5TutHmiZSNdS)

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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 $v2_tsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_pre_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tex_4 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_borsuk_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc \\ & X1 X0))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 \\ & X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc X2 X0 X1) \wedge (m1_subset_1 X2 \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (1) \\ & ((v3_borsuk_1 X2 X0 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X1)) \Rightarrow ((X3 = X4) \Rightarrow \\ & (k8_relset_1 (u1_struct_0 X0) (u1_struct_0 X1) X2 (k6_domain_1 \\ & (u1_struct_0 X1) X4) = k4_tex_4 X0 X3)))))) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge \\ & (l1_pre_topc X0))) \wedge ((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc \\ & X1 X0)))) \Rightarrow ((v1_funct_1 (k1_tsp_2 X0 X1)) \wedge ((v1_funct_2 (k1_tsp_2 \\ & X0 X1) (u1_struct_0 X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc (k1_tsp_2 \\ & X0 X1) X0 X1) \wedge (m1_subset_1 (k1_tsp_2 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\ & (u1_struct_0 X0) (u1_struct_0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc \\
& X1 X0))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 \\
& X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc X2 X0 X1) \wedge (m1_subset_1 X2 \\
& (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))) \Rightarrow \\
& ((X2 = k1_tsp_2 X0 X1) \Leftrightarrow (v3_borsuk_1 X2 X0 X1)))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\
& X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc \\
& X1 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow ((X2 = X3) \Rightarrow (k8_relset_1 (u1_struct_0 \\
& X0) (u1_struct_0 X1) (k1_tsp_2 X0 X1) (k6_domain_1 (u1_struct_0 \\
& X1) X3) = k4_tex_4 X0 X2))))))
\end{aligned}$$