

t28_tsp_2
(TMdrJeL5eM6aSTsEc2U2wuwEd89EZWfx46r)

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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 $k9_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tex_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_tops_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_struct_0 : \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (r1_tarski (k7_relat_1 X1 (k8_relat_1 X1 X0)) X0) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X0 \in k9_xtuple_0 X1) \Rightarrow (k9_relat_1 X1 X0 = k1_tarski (k1_funct_1 X1 X0))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 (k1_tarski X1)) \Leftrightarrow ((X0 = k1_xboole_0) \vee (X0 = k1_tarski X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v2_pre_topc X0)\wedge(l1_pre_topc \\ X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v2_tsp_2 X1 X0)\wedge(m1_pre_topc \\ X1 X0)))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(k8_relset_1 \\ (u1_struct_0 X0) (u1_struct_0 X1) (k1_tsp_2 X0 X1) (k6_domain_1 \\ (u1_struct_0 X1) (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) \\ (k1_tsp_2 X0 X1) X2)) = k4_tex_4 X0 X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(k8_relset_1 X0 X1 X2 X3 = k8_relat_1 X2 X3) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(k7_relset_1 X0 X1 X2 X3 = k7_relat_1 X2 X3) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m1_subset_1 X1 X0))\Rightarrow (k6_domain_1 X0 X1 = k1_tarski X1) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0)))\Rightarrow(k3_funct_2 X0 \\ X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (11)$$

Assume the following.

$$\forall X0.\exists X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(v1_xboole_0 X1) \quad (12)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (\neg v2_tops_1 (k2_struct_0 X0) X0) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_relat_1 X0)) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k9_xtuple_0 X0)))))) \Rightarrow (\neg v1_xboole_0 (k7_relat_1 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (\forall X1. (m1_pre_topc X1 X0) \Rightarrow (l1_pre_topc X1)) \quad (16)$$

Assume the following.

$$\forall X0. (l1_pre_topc X0) \Rightarrow (l1_struct_0 X0) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (m1_subset_1 (k7_relset_1 X0 X1 X2 X3) (k1_zfmisc_1 X1)) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow ((\neg v1_xboole_0 (k4_tex_4 X0 X1)) \wedge (m1_subset_1 (k4_tex_4 X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))) \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (m1_subset_1 (k3_funct_2 X0 X1 X2 X3) X1) \quad (20)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \wedge ((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc X1 X0)))) \Rightarrow ((v1_funct_1 (k1_tsp_2 X0 X1)) \wedge ((v1_funct_2 (k1_tsp_2 X0 X1) (u1_struct_0 X0) (u1_struct_0 X1)) \wedge ((v5_pre_topc (k1_tsp_2 X0 X1) X0 X1) \wedge (m1_subset_1 (k1_tsp_2 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))) \quad (21)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow (k2_struct_0 X0 = u1_struct_0 X0) \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (((X1 \neq k1_xboole_0) \Rightarrow ((v1_funct_2 X2 X0 \\ X1) \Leftrightarrow (X0 = k1_relset_1 X0 X2))) \wedge ((X1 = k1_xboole_0) \Rightarrow ((v1_funct_2 \\ X2 X0 X1) \Leftrightarrow (X2 = k1_xboole_0)))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow (\forall X1.k9_relat_1 X0 X1 = k7_relat_1 X0 (k1_tarski X1)) \quad (24)$$

Assume the following.

$$\forall X0.(l1_pre_topc X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow ((v1_xboole_0 X1) \Rightarrow (v2_tops_1 X1 X0))) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (v1_xboole_0 X1)) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (28)$$

Assume the following.

$$\forall X0.((v2_pre_topc X0) \wedge (l1_pre_topc X0)) \Rightarrow (\forall X1.(m1_pre_topc X1 X0) \Rightarrow (v2_pre_topc X1)) \quad (29)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_tsp_2 X1 X0) \wedge (m1_pre_topc \\ X1 X0))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k9_relat_1 \\ (k1_tsp_2 X0 X1) X2 = k7_relset_1 (u1_struct_0 X0) (u1_struct_0 \\ X1) (k1_tsp_2 X0 X1) (k4_tex_4 X0 X2)))) \end{aligned}$$